2013 Joint UFFC, EFTF and PFM Symposium

IEEE Advancing Technology for Humanity

IEEE-International Ultrasonics Symposium (IUS), Joint IEEE-International Symposium on the Applications of Ferroelectric (ISAF) and Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials (PFM), Joint IEEE-International Frequency Control Symposium (IFCS) and European Frequency and Time Forum (EFTF)

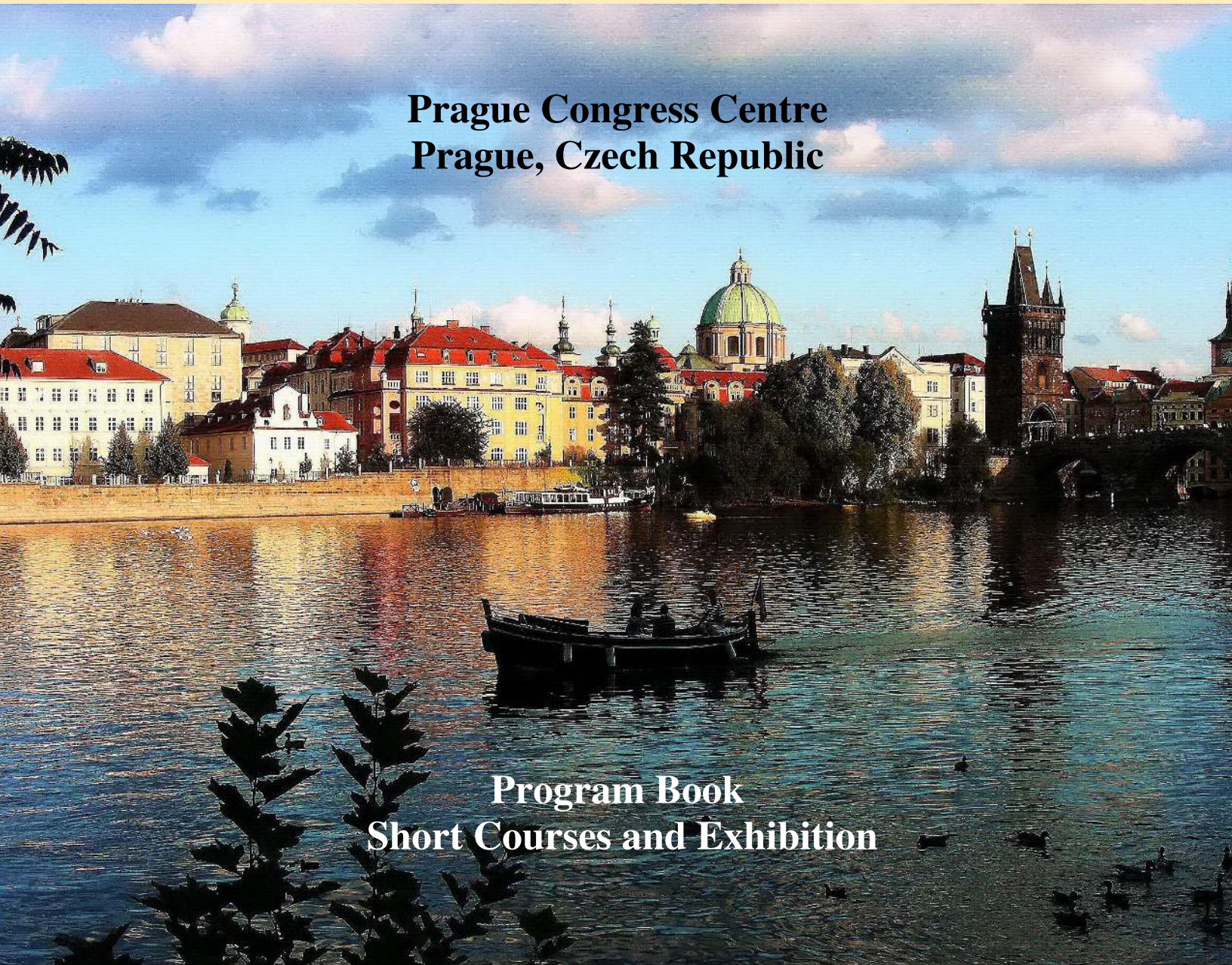
EFTF European Frequency & Time Forum

21-25 July 2013, Prague, Czech Republic

Sponsored by the IEEE Ultrasonics, Ferroelectrics, Frequency Control Society and European Frequency & Time Forum

International Ultrasonics Symposium
International Symposium on the Applications of Ferroelectrics
Joint International Frequency Control Symposium
European Frequency and Time Forum

Prague Congress Centre
Prague, Czech Republic



Program Book
Short Courses and Exhibition

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Welcome from the General Chair

Welcome To Prague!

Ahmad Safari
General Chair

Jirka Hlinka
Local Chair

Prague is one of my favorite cities in Europe. It holds high standards offering a rich history, vibrant places of interest, and modern conference venues. Its historical center is the largest United Nations Educational, Scientific, and Cultural Organization (UNESCO) urban conservation area in the world. Physics has a long tradition in Prague and famous physicists like Johannes Kepler, Christian Doppler, Ernst Mach and Albert Einstein worked in Prague. With everything Prague has to offer, it provides a perfect venue for the joint conference.

The three brother entities that make up the IEEE UFFC Society have reunited once again after 10 years to celebrate its 60th anniversary. We are particularly pleased that at this time the joint event is also hosting the European Frequency and Time Forum (EFTF) as well as the Piezoresponse Force Microscopy (PFM) workshops allowing us the opportunity to experience the synergy of five highly professional conferences and workshops.

For your convenience, the technical program of the joint UFFC, EFTF, and PFM symposium is offered in this book. The program is also available on the conference website and may also be downloaded onto a smartphone. We hope you will enjoy this symposium and wish you a pleasant stay in the city of Prague. We cordially thank you for your contribution to the success of this meeting.

Ahmad Safari
General Chair
Department of Materials Science and Engineering
Rutgers University, Piscataway, NJ 08854
Safari@rci.rutgers.edu

Conference venue

The venue of the 2013 Joint UFFC, EFTF, and PFM Symposium will be held in Prague Congress Centre, located close to the historical center of Prague, Czech Republic.

Venue Address:

Prague Congress Centre
5 kvetna 65, 140 21 Prague 4
Czech Republic
Website: www.kcp.cz/an

Registration Desk for the Conference

The registration desk is located on the First floor. Hours for the registration desk are:

Sat	July 20	15:30–21:00
Sun	July 21	8:00–21:00
Mon	July 22	7:00–18:00
Tue	July 23	7:00–18:00
Wed	July 24	7:00–18:00
Thurs	July 25	8:00–18:00

Registration and Fees ($USD)

Conference Registration includes admission to Technical Sessions, Luncheons, Monday Reception, Wednesday Banquet, a copy of Abstract Book (Flash Memory) and a copy of Proceedings (CD ROM).

	Advance	After June 1
IEEE member	665.00	820.00
Non-Member	820.00	995.00
Reduced (student/Retiree)	300.00	300.00
Guest		
Short Course (regular)	245.00	245.00
Life Member	245.00	245.00
One day	425.00	425.00
Short Course (student/Retiree)	90.00	90.00
Additional Banquet Ticket	75.00	75.00
Additional Lunch Ticket	26.00	26.00

Refund Policy

The deadline to request a refund is July 1, 2013. No refunds will be issued after this deadline.

To request a refund before the deadline, email Lauren Pasquarelli, laurenp@conferencecatalysts.com. Registration fees will be refunded via the original payment method.

IEEE and UFFC-S Enrollment

If you wish to join the IEEE when registering for the Conference, you may register at the member rate and receive one year of free membership in the Ultrasonics, Ferroelectrics and Frequency Control Society (UFFCS). This offer applies only to on-site registration and is applicable only to memberships above the Student Member level. IEEE/UFFC-S enrollment forms will be available at the IEEE exhibit booth.

Messages

A bulletin board for posting messages will be located in the registration area.
Telephone: +420 721 286 730.

Conference Proceedings

All participants of the 2013 Joint UFFC, EFTF and PFM Symposium are encouraged to submit the manuscript to the Proceedings, which will be published on CD-ROM and on the IEEE Xplore Digital Library in a format compatible with IEEE Xplore. Authors publishing in the proceedings will be required to transfer the copyright of the paper to the IEEE, the publisher of the proceedings of 2013 Joint UFFC, EFTF and PFM Symposium, via the IEEE Xplore digital library.

The proceedings document is expected to be "camera ready", i.e. a final document with all figures placed in the text and converted to a PDF document format. Regular poster and oral presentations are limited to 4 pages, invited papers to 10 pages.

The authors could use the MS Word template or LaTeX template when preparing the manuscript, as the templates are compatible with IEEE Xplore. Papers which are not PDF eXpress compliant will not be published through IEEE Xplore. The templates can be downloaded from following web site: http://www.ieee.org/conferences_events/conferences/publishing/templates.html

Only papers of presented abstracts at the symposium will be included in the Proceedings. Proceedings will not be reviewed by independent referees. However, editors of the proceedings will check the content, figures, references and format of the manuscripts.

Proceedings will be electronically available for IEEE members three months after the conference on the IEEE Xplore Digital Library. A CD-ROM of proceedings will be distributed by mail to all participants of the conference.

Proceedings will be published in three sections:

a. Proceedings of International Ultrasonics Symposium (IUS), Editor *Jafar Saniie*.
b. Proceedings of International Symposium on the Applications of Ferroelectric and Piezoresponse Force Microscopy Workshop (ISAF–PFM), Editor *Stanislav Kamba*.
c. Proceedings of International Frequency Control Symposium and European Frequency and Time Forum (IFCS–EFTF), Editor *Aaron Partridge*.

Publication in special issues of IEEE TUFFC

Only selected authors, who presented top-quality results on the 2013 Joint UFFC, EFTF and PFM Symposium, will be invited by conference organizers to submit a significantly expanded version of their proceedings manuscript to three special issues of **IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control (IEEE TUFFC)**. The manuscripts will be submitted through the journal website and **thoroughly peer reviewed**, as would any other manuscript submitted to this journal. Authors will be asked to submit their manuscripts via the **IEEE TUFFC** journal website. The final closing **deadline** for submission will be **1st November 2013.**

Additional information regarding publications can be found at http://ewh.ieee.org/conf/uffc/2013/

Visa Application

Invitation letters for the purpose of application for Czech or Schengen visa are sent regularly to the REGISTERED participants or to the participants presenting ACCEPTED abstracts, provided such request was marked in their **registration form** or in their abstract submission web form. We do our best to process the requests as soon as possible. For more info, or if you failed to request the **invitation letter** previously, please contact local chair J. Hlinka (uffc13@fzu.cz).

For very urgent special requests requiring fast delivery services or notary-certified documents can be handled by Guarant International. Please contact Veronika Brejchova, (uffc2013@guarant.cz) but in this case an additional handling fee of 100 EUR will be required.

Student Travel Support

Student Travel Support will be available beginning Monday, July 22nd at 1:00 pm in the registration area. Please have identification and travel receipts available.

Student Luncheon

Students attending the Conference are invited to attend a complimentary Lunch on Thursday July 25th from 12:00 to 13:00 at Zoom Restaurant. This is an opportunity for students to network with other students and with the Administrative Committee members of the UFFC Society.

Women in Engineering

All women active in the technical areas of the joint UFFC, EFTF, and PFM conference are invited to attend a complimentary lunch and networking event organized by the women in UFFC group on Monday July 22nd from 12:00 to 13:00 at Zoom Restaurant. The event will offer a highlight presentation by Dr. Jacqueline Hines President of UFFC-S, Engineering Duty Officer in the U.S. Naval Reserves (Retired), and founder of a company specializing in development of acoustic wave sensors and systems.

IEEE Event Photography Statement

Attendance at, or participation in , this conference constitutes to the use and distribution by IEEE of the attendee's image or voice for informational, publicity, promotional and / or reporting purpose in print or electronic communications media. No flash photography will be used.

Video recording by participants and other attendees during any portion of the conference is not allowed without special prior written permission of IEEE.

Photographs of PowerPoint or other slides as well as posters are not permitted.

IEEE Non-Discrimination Policy

IEEE is committed to the principle that all persons shall have equal access to programs, facilities, services, and employment without regard to personal characteristics not related to ability, performance or qualification as determined by IEEE policy and / or applicable laws.

Accommodations

GUARANT International is the official hotel accommodation agent for the 2013 IEEE–UFFC Joint Symposia and is handling all related arrangements. GUARANT staff will be able to help you with your accommodation requests at the Information desk located in the registration area on the 1st Floor of the Prague Congress Centre. You can also contact GUARANT International via email uffc2013@guarant.cz or by telephone +420 721 286 730.

Local Transportation

Transport from Prague Airport to the Symposium venue:

The airport is located approx. 30 minutes by car from the city center. The travelling time extends during rush hours. There is a good connection by public transport buses and taxis, no train or underground connection is available.

Public Transportation:

Bus 119: Prague Airport (Letiste Ruzyne) → Dejvicka (end stop of the bus and Metro line A terminal), then take Metro: Dejvicka → Muzeum (5 stations), then change the line and take Metro C: Muzeum → Vysehrad (2 stations). The journey takes less than 1 hour including the changes and waiting times. The bus stop is situated directly in front of the airport terminal.
Prague public transport is fast, efficient and frequent. Metro and most daily trams and buses operate every day from 5 am till midnight. Night trams and buses (line numbers beginning with 5) operate throughout the night. Similar to most capitals, the concentration of Pocket Pickers is elevated, be aware in the historical centre as well as on your route from / to the airport.
Tickets: Basic fare of 32 CZK (approx. 1.30 EUR) entitles the holder to use all means of public transport (Metro, trams, buses and cable car to the Petrin hill) for up to 90 minutes including unlimited number of changes. The ticket must be validated using a yellow box inside the first bus or tram, or while first entering designated area in Metro. After validation, just keep the ticket with you.
Tickets can be purchased either at the Public Transportation counters in Arrivals Halls of Terminals 1 & 2 (from 7 am till 10 pm) or at the ticket machine situated at the airport bus stop (CZK coins required). For Cashpoint withdrawals, we therefore recommend setting an amount not ending with thousands CZK (200 CZK is a typical monetary quantum a Cashpoint can dispense).
In the city, tickets can be purchased at newsagents, tobacconists, hotel receptions, ticket machines in Metro entrance areas etc. ***When entering the bus, remember to validate the ticket*.**

Airport express

The fast bus line operates daily from 5 AM till 10 PM in regular intervals 30 minutes. The route is Prague Airport → Dejvicka (Metro A) → Masarykovo Nadrazi railway station (Metro B) → Hlavni Nadrazi (Prague Main Railway Station, Metro C). The fare is 50 CZK or 30 CZK if travelling just between the airport and Dejvicka Metro terminal.
From the terminal stop, Hlavni Nadrazi, you can continue by Metro directly to the conference venue (Vysehrad, 2 stations). A cheaper 26 CZK ticket can be used for this route. From Dejvicka Metro terminal, you can use Metro as described under Public transport.

Taxi (AAA, Radiocab)

The journey from the airport to Kongresove Centrum takes at least half an hour and should cost around 600 CZK. The taxi rank of both official airport companies (AAA radiotaxi and Radiocab) is situated directly in front of the airport terminal. For the journey back, we strongly recommend ordering a taxi from your hotel reception rather than finding a cab in the street.

Transportation from railway stations to Prague Congress Centre

All principal railway stations are situated along Metro stations. There are only 3 Metro lines in Prague (A, B, C) so it is not difficult to reach Vysehrad station (line C). If you decide to take a taxi, we strongly recommend ordering one rather than finding a cab in the street. For AAA radiotaxi, just call 14014 and wait 5–10 minutes until your taxi (yellow color) picks you up.

PLEASE NOTE – All registered participants will receive Free PUBLIC TRANSPORT TICKET valid within the dates of the symposium with registration package.
Prague has a very sophisticated subway, tram and bus transport system. The Prague underground is quite new and efficient. At peak times, trains run every 2 or 3 minutes, and during off-peak hours at least every 8–10 minutes.

Conference Reception

Monday, July 22
Time: 19:00–21:00

Location: Prague Congress Centre, second floor
The Conference Reception will be held at the Prague Congress Centre in the Exhibition Area.

Conference Banquet

(A): For Registered Student Participants

BOAT # 1 (Európe)
Date: Wednesday, July 24
Time: 20:00–23:00
Buffet, soft drinks, wine, beer and live music included

Admission: Free for all registered student participants but with a limited capacity (*250 places*) so please reserve your seat well in advance. The tickets will be given on a first-come first-served basis.
Embarkation address: The boat sets sail from the Wharf Na Františku.

Európe is a salon motor boat that is one of the largest boats operated on the Vltava River in Prague. Boat trip through Prague will be 2–3 hours in duration. In your journey you will observe Prague Castle, Rudolfinum, Charles Bridge, Kampa, National Theatre, Vyšehrad, etc. The trip includes sailing through 1 sluice, back and forth.

Direction to embarkation place:
Dvorakovo Nabrezi, where the Wharf Na Františku is located, can be reached by metro and tram. From Vysehrad (symposium venue) take metro – red line C – to Hlavni Nadrazi station, than take the tram 26 to the stop Dlouha Trida. The tram stop is located approx. 3 min by foot from the metro Hlavni Nadrazi station: you get out by the main entrance and turn right; you continue across the park and reach the tram stop (direction Divoka Sarka). From the Dlouha Trida stop, you continue by foot in the direction of the tram to the river bank and you will be able to see Dvorakovo Nabrezi and the sailed boats on your left.
You will receive an invitation with a map on the back to find the embarkation spot.

BOAT # 2 (Classic River)
Date: Wednesday, July 24
Time: 20:00–23:30
Buffet, soft drinks, wine, beer and live music included

Admission: Free for all registered student participants but with a limited capacity (*250 places*) so please reserve your seat well in advance. The tickets will be given on a first-come first-served basis.
Embarkation address: The boat sets sail from the Wharf Na Františku.

This recently renovated boat on the Vltava River has the largest capacity in Prague – 400 seats. You can choose between the upper deck in classic style and the lower deck in wooden style pub and between the three sun decks with the most beautiful view of Prague.
Boat trip through Prague will be 2–3 hours in duration. On your journey you will observe Prague Castle, Rudolfinum, Charles Bridge, Kampa, National Theatre, and Vyšehrad. The trip includes sailing through 1 sluice, back and forth.

How to get to the embarkation spot:
Dvorakovo Nabrezi, where the Wharf Na Františku is located, can be reached by metro and tram. From Vysehrad (symposium venue) take metro – red line C – to Hlavni Nabrazi station, than take the tram 26 to the stop Dlouha Trida. The tram stop is located approx. 3 min by foot from the metro Hlavni Nabrazi station: you get out by the main entrance and turn right; you continue across the park and reach the tram stop (direction Divoka Sarka). From the Dlouha Trida stop, you continue by foot in the direction of the tram to the river bank and you will be able to see Dvorakovo Nabrezi and the sailed boats on your left.
You will receive an invitation with a map on the back to find the embarkation spot.

(B): Banquet For regular registered conference participants

Date: Wednesday July 24
Time: 20:00–23:30
Location: Zofin Palace, Slovansky Ostrov 226, Prague 1

Admission: Free for all registered participants but with capacity of 1200 seats, so please reserve your seat well in advance. The tickets will be given on a first-come first-served basis.
The historic Neo-Renaissance Zofin Palace on the picturesque "Slovansky" Island in the center of Prague boasts a historical landmark which has been a leading center of cultural and social life in Prague since 1837.
It is not uncommon to run into people of importance at Zofin frequently. It offers Prague's famous hall that you will have the opportunity to explore.
The banquet dinner will be served to all participants to taste Czech and international cuisine. Czech beer and wine will be served during the event.
How to get to the Zofin Palace: Zofin Palace is located on the Slovanský Island. It is accessible by tram 6, 7, 9, 10, 14, 16, 18, 22 (stop Narodni Divadlo). From Vysehrad (congress venue) take metro – red line C – to I. P. Pavlova station, than take the tram 22 or 6 to the stop Narodni Divadlo.
For further information, please refer to the conference website: www.ewh.ieee.org/conf/uffc/2013/

Tours

All tours will leave from the Prague Congress Centre (Entrance No. 10).
Participants are kindly asked to gather at the meeting point 15 minutes before the scheduled departure.

TOUR #1: PANORAMIC TOUR
Sunday, July 21, Time: 16:00 – 18:00 Price: 15 EUR

TOUR #2: PRAGUE CASTLE TOUR
Monday, July 22, Time: 9:00 – 13:00 Price: 57 EUR (Lunch included)

TOUR# 3: Kutna Hora – UNESCO
Monday, July 22, Time: 13:00 – 19:00 Price: 57 EUR
The price includes: Entrance fees to St. Barbara Church, Italian Court, Royal Mint, and Bone Church in Sedlec.

TOUR #4: Grand Sightseeing Tour Prague Castle and Charles Bridge
Tuesday, July 23, Time: 11:15 – 14:45 Price: 29 EUR

TOUR #5: Karlovy Vary and Moser Factory
Tuesday, July 23, Time: 9:00 – 18:30 Price: 67 EUR
The price includes: Lunch and Entrance fee to the Moser Glass Factory

TOUR #6: Evening sightseeing River Cruise with dinner and music
Tuesday, July 23, Time: 18:30 – 22:30 Price: 50 EUR
The price includes: Welcome drink, Buffet dinner

TOUR #7: Prague Jewish Town
Wednesday, July 24, Time: 9:00 – 12:30 Price: 55EUR
The price includes: Entrance fees to Maisel Synagogue, Pinkas Synagogue, Klausen Synagogue, Spanish Synagogue, the Old Jewish Cemetery; and lunch at Kolkovna restaurant.

TOUR #8: Konopiste Castle
Wednesday, July 24, Time: 9:00 – 13:00 Price: 42EUR *(The price includes Entrance Fee to the Chateau)*

TOUR #9: Grand Sightseeing Tour & Prague Castle & boat trip
Thursday, July 25, Time: 14:00 – 17:30 Price: 36 EUR

TOUR #10: Evening River cruise with dinner, music and sightseeing
Thursday, July 25, Time: 18:30 – 22:30 Price: 50 EUR
The price includes welcome drink and buffet dinner

TOUR #11: Cesky Krumlov – UNESCO, (2 DAY Tour)
Friday, July 26 – Saturday, July 27 Price: 125 EUR

TOUR #12: Karlstejn Castle
Thursday, July 25, Time: 9:00 – 13:00 Price: 38 EUR
The price includes entrance fee to the chateau (tour 1)

Exhibitors List and Booth Numbers

Logo	Booth	Description
ACERTARA acoustic laboratories	8	Acertara provides advanced products and testing services to medical imaging ultrasound and ultrasound related Original Equipment Manufacturers worldwide.
AOS Advanced OEM Solutions	27	Advanced OEM Solutions (AOS) designs and manufactures customizable Ultrasonic Phased Array and conventional Ultrasonic instruments perfect for research and industrial applications.
AMS Systems	15	Advanced Modular Systems is a leading supplier of thin film process equipment and technologies for piezoelectric devices. The generation 4 tool is a combination of all thin film technological processes in one cluster tool.
aixACCT SYSTEMS GMBH	47/48	AixACCT Systems is world leader in testing piezoelectric materials and devices. This covers characterization of piezoelectric films, bulk ceramics and single crystals as well as ink jet print heads and fuel injection multilayer systems.
AnaPico of Switzerland	7	AnaPico AG manufactures RF & microwave signal generators, broadband synthesizer and signal generator modules, phase noise test equipment and signal source analyzers. Customized solutions are provided.
A	19	Apex Ultrasound company is one of the leading companies for designing, developing and manufacturing medical ultrasonic transducer and probe products and providing interrelated technical service.
ASYLUM RESEARCH an Oxford Instruments company	42	Asylum Research is the technology leader in atomic force microscopy, piezoresponse force microscopy, piezoelectrics, ferroelectrics and multiferroics.
BSAC	38	The Berkeley Sensor & Actuator Center, headquartered at the University of California, Berkeley, will discuss their research projects related to RF MEMS and mechanical structures suitable for frequency control and radio integration.
brandywine	2	Brandywine Communications supplies ultra-precise GPS and time code based Time and Frequency products, offering next generation solutions for telecom, government / aerospace & defense, power utilities, and public safety.

Brilliant Instruments	**10**	Brilliant Instruments is a manufacturer of modular measurement instruments for timing and signal generation. Products include time interval analyzers, clock generator, and electronic multiplexers.
Cephasonics	**18**	Embedded–ultrasound technology and subsystem electronics for B2B health care and industrial applications as well as cutting-edge research can be simply stated: We enable ultrasound.
DICOM MESIT Group	**43**	DICOM is a technology company which develops and manufactures leading-edge products for voice and data communications. Our products are used by high-profile government and military entities.
E&I	**28**	Electronics & Innovation Ltd., E&I, is a world leader in providing rugged and reliable RF power amplifiers, phased array systems, impedance matching and variable transformers, and custom RF solutions.
Fomos	**11**	Fomos–Materials company is one of the worldwide leaders in producing innovative piezoelectric materials: Lanthanum Gallium silicate (Langasite) and Lanthanum Gallium tantalate (Langatate).
Fraunhofer IBMT	**23**	The ultrasound department of the Fraunhofer Institute for Biomedical Engineering is specialized in flexible customized single- and multichannel systems and ultrasound imaging techniques for use in biomedical and technical applications.
FREQUENCY ELECTRONICS, INC.	**5**	Frequency Electronics, Inc. (FEI) is a world leader in the design, development and manufacture of high precision timing, frequency control and synchronization products for space and terrestrial applications.
gampt ULTRASONIC SOLUTIONS	**37**	GAMPT stands for comprehensive expertise in ultrasonic measuring technology, e.g. the “BubbleCounter” in medical technology and the membrane hydrophone for the measuring of sound fields.
GuideTech	**36**	GuideTech is a leading provider of High-precision Frequency Counters and “CTIA” Continuous Time Interval Analyzers With 2 ps resolution and 4.5 million Measurements per second.
holzworth instrumentation	**34**	Holzworth Instrumentation is a global provider of high performance Phase Noise Analyzers and RF Synthesis products, in particular cross correlation analyzers and ultra low phase noise RF sources.

HONDA ELECTRONICS	**25**	Honda Electronics is known as a manufacturer and supplier of wide range of ultrasonic apparatus such as ultrasonic cleaner, welder, and medical diagnostic imaging system beside with ultrasonic flow meter and tank gauges.
The Leader in Next Generation HUMANSCAN	**41**	HUMANSCAN is well known for its innovation in medical ultrasound transducer technology. We are supplying ultrasound transducer for many system companies.
IMASONIC	**26**	Imasonic develops and produces ultrasonic transducers for Medical and NDT applications. Using our proprietary Piezocomposite technology, any type of transducer can be designed from single element to Phased Array transducers.
IPPT PAN	**13**	IPPT PAN is a government funded scientific institute conducting research in theoretical and applied mechanics, theory of coupled mechanical and physical fields, theoretical and experimental mechanics of materials and structures, computational methods in mechanics, acoustoelectronics, and ultrasonic medical diagnostics.
lecoeur électronique	**33**	Lecoeur Electronique company is devoted to non-destructive testing, using ultrasounds. We are capable of building your custom-made equipment and we are able to adapt to your technical and budgetary requests.
MenloSystems	**4**	Menlo Systems, a global supplier of instrumentation for high-precision metrology, offers complete solutions based on ultrafast lasers, synchronization electronics and THz systems for applications in industry and research.
MORION, INC. ST. PETERSBURG	**6**	Morion, Inc. is a designer and manufacturer of quartz frequency control products (FCP) – quartz oscillators, filters and crystals dedicated for various applications such as telecommunications, navigation, test & measurement.
NEL FREQUENCY CONTROLS, INC.	**22**	NEL Frequency Controls designs and manufactures ultra-low phase noise crystal oscillators. *Highlighted NEW product:* Precision Ultra Low Phase Noise O-CDF Series OCXO Dual Frequency Reference Modules.

NOISE XT	**12**	Noise XT is a provider of high spectral purity Test and Measurement solutions. Phase Noise testers and Pulsed Signals analysis systems enables users to achieve lower noise characteristics at high testing speed.
ONDA	**40**	Onda Corporation is the global leader in ultrasound measurement instrumentation and services, including acoustic characterization and control of a variety of complex medical and industrial devices.
PIK Time Systems	**29**	Piktime Systems sp. z o.o. is a satellite techniques and precise time sector company focused on development and manufacturing scientific equipment for precise, long-distance atomic clocks comparison.
PA Precision Acoustics	**14**	Precision Acoustics is a leading manufacturer of test equipment for high frequency ultrasound measurement including membrane, needle and fibre-optic hydrophones along with ultrasound transducers for research purposes.
PZFlex Virtual Prototyping	**16**	Weidlinger Associates is the developer of PZFlex, the premier finite element simulation software for piezoelectric and ultrasound analyses. PZFlex simulates ultrasound imaging, SONAR, NDT, sensor and actuators.
RADIANT TECHNOLOGIES, INC.	**21**	Radiant's Precision materials testers can characterize the individual material properties of dielectric response, remanent polarization, piezoelectricity, pyroelectricity, and electrical leakage with no configuration change.
scia Systems	**30**	scia Systems provide advanced solutions for ion beam processing in thin film technology. The industry proven scia Trim systems define the leading standard for frequency trimming of piezoelectric resonators (SAW, BAW).
SIMetris	**9**	SIMetris support ultrasonic product development using our finite element simulation tool NACS. We provide analysis of piezoelectric, vibroacoustic, and magneto-mechanical interactions as well as product optimization.
SONIC CONCEPTS	**39**	Sonic Concepts is a leading manufacturer of ultrasound transducers and related equipment including arrays, transmit electronics, PCDs, hydrophones, radiation force balances, water degassing equipment etc.
SDI SpectraDynamics, Inc.	**31**	SpectraDynamics, Inc. is a leading supplier of Time and Frequency Products such as Time and Frequency Distribution Amplifiers, Frequency Synthesizers and Noise Measurement Systems.

Symmetricom	**32**	Symmetricom® is the world's leading source of highly precise timekeeping technologies, instruments and solutions. We serve communications, enterprise IT, power utilities, financial services, aerospace, defense, and national labs.
T4Science iPRECISION MASER SOLUTIONS™	**20**	T4Science is designing and offering maser products since 1982. The company is a world's leader in designing, manufacturing high performance, cost effective, high quality and compact maser products with smart functionality.
TIMETECH	**17**	TimeTech GmbH specializes in precise frequency and time systems for Space and Ground applications. The SATRE modems are widely used for comparison of atomic clocks and for precise ranging and orbit determination of satellites.
Uliss®	**3**	The only technology to provide a relative frequency stability better than 1×10^{-14} for integration times ranging from 0.1 s to 1 day. ULISS does not require annoying and extremely expensive use of liquid helium.
ultrasonix Analogic Ultrasound	**24**	Ultrasonix has been a leading provider of dynamic ultrasound research systems for university and biomedical research for more than 10 years. Ultrasonix Medical Corporation was acquired by Analogic (Nasdaq:ALOG).
Verasonics®	**35**	Verasonics has developed revolutionary ultrasound system technology based on real-time software. The system accelerates research, provides unsurpassed control while simplifying data collection and analysis process.
	44/45	Czech Technical University in Prague: On site demonstration of sub-picosecond event timing device with femtosecond long-term stability and two way time transfer via single coaxial cable providing picoseconds accuracy.

EFTF 2014
28th European Frequency and Time Forum

23–26 June 2014, Neuchâtel, Switzerland
www.eftf-2014.ch

The European Frequency and Time Forum (EFTF), is an international conference and exhibition, providing information on recent advances and trends of scientific research and industrial development in the fields of Frequency and Time. In 2014, EFTF will come back to Neuchâtel, one of the founding cities of the Forum and a center of research and high-tech industry in Switzerland.
Contact: Steve Lecomte, steve.lecomte@csem.ch for more information.
www.eftf.org

2014 IEEE International Frequency Control Symposium

Abstract Submission Deadline: Jan. 10, 2014

Taipei International Conference Center (TICC), Taipei, Taiwan

Conference: Tues. May 20th through Thur. May 22nd, 2014; Tutorials: Monday May 19th

General Chair:
Wan–Thai Hsu
Discera
whsu@discera.com

Technical Program Committee Chair:
Gregory Weaver
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Finance Chair & TPC Administration:
Debra Coler
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Location: The 2014 IEEE International Frequency Control Symposium will be held at the Taipei International Conference Center (TICC) in Taipei, Taiwan. The TICC is situated in the foothills of eastern Taipei's Hsin-yi District, an area where the modern face of Taipei shines with glass and steel skyscrapers, one of the tallest buildings in the world, wide boulevards, and the Taipei World Trade Center complex. As the political, economic, and cultural center of Taipei, the district houses many landmark buildings, including the Taipei City Hall, Taipei City Council, National Dr. Sun Yat-Sen Memorial Hall, and Taipei 101.

Manufacturers' Forum: On Wednesday, May 21st there will be a special session for manufacturers. Frequency control device manufacturers are invited to bring forward review topics or emerging processing technology in the following:

Process control and/or quality metrics
Manufacturing methods or technology approaches
System engineering applied to customer needs
Capacity planning for emerging device production

Authors are invited to submit papers with recent and original work of interest to the frequency control communities in the following topics. Special interest is given toward manufacturing methods and realization technology of emerging products in MEMS resonator-based devices, quartz micro-clocks, and advanced atomic frequency standards**:**

Group 1: Materials, Resonators, & Resonator Circuits
Group 2: Oscillators, Synthesizers, Noise, & Circuit Techniques
Group 3: Microwave Frequency Standards
Group 4: Sensors & Transducers
Group 5: Timekeeping, Time and Frequency Transfer, GNSS Applications
Group 6: Optical Frequency Standards and Applications

Abstract Submission: Abstracts will be collected through a web-based submission tool. For updates on abstract submission and conference information as it becomes available, please visit IEEE website at http://ifcs2014.e-papers.org

Student Paper Competition: Students submitting abstracts for presentation are invited to participate in a student paper competition. A request to be considered for the student paper competition must be made at the time of abstract submission.

23rd International Symposium on Applications of Ferroelectrics (ISAF)
International Workshop on Acoustic Transduction Materials and Devices (IWATMD)
Piezoresponse Force Microscopy Workshop (PFM)
May 12 – 16, 2014

The Penn Stater Conference Center Hotel
Penn State University
State College, PA, 16801 USA

http://www.mri.psu.edu/conferences/2014IEEE-ISAF-IWATMD-PFM/

1st Call for Papers

It is our pleasure to announce the 2014 ISAF/IWATMD/PFM.
This joint conference will cover a wide range of topics around ferroelectric & piezoelectric materials and their applications as piezoelectrics, pyroelectrics, electro-optics, capacitors, and memory devices. The synergy that will result from co-hosting ISAF/PFM and IWATMD will enable participants from industry, national laboratories, and academia to gather in a highly interactive environment for technical exchange.

Please follow this link to our website for more information including:

- Abstract submission (begins October 1, 2013)
- Registration
- Exhibitor information
- Lodging information
- Preliminary agenda (approximately February 10, 2014)
- Organizing Committee
- Important dates
- Tutorials

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Sponsored by the IEEE Ultrasonics, Ferroelectrics & Frequency Control Society

IEEE ULTRASONICS, FERROELECTRICS, AND FREQUENCY CONTROL SOCIETY

2014 IEEE INTERNATIONAL ULTRASONICS SYMPOSIUM
CHICAGO, ILLINOIS USA
September 3, 2014

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IUS 2014 – FIRST ANNOUNCEMENT

The annual 2014 IEEE International Ultrasonics Symposium will be held at the **Hilton Hotel, CHICAGO, IL, USA,** from **September, 3–6, 2014**. Papers are solicited for this conference describing original work in the field of ultrasonics. Poster and oral presentation formats will be used at the symposium. Prospective authors should note that poster sessions provide an alternative format which allows for greater flexibility and expanded audience interaction. Papers are solicited from the following **subject classifications:**

Group 1: Medical Ultrasonics
MBB Medical Beamforming and Beam Steering
MBE Biological Effects & Dosimetry
MBF Blood Flow Measurement
MCA Contrast Agents
MEL Elastography
MIM Medical Imaging
MPA Medical Photoacoustics
MSD System & Device Design
MSP Medical Signal Processing
MTC Medical Tissue Characterization
MTH Therapeutics, Hyperthermia, and Surgery

Group 2: Sensors, NDE & Industrial Applications
NAF Acoustics Microfluidics
NAI Acoustic Imaging
NAM Acoustic Microscopy
NAS Acoustic Sensors
NDE General NDE Methods
NEH Energy Harvesting
NFM Flow Measurement
NMC Material & Defect Characterization
NPA Photoacoustics
NPC Process Control
NSP Signal Processing
NTD Transducers: NDE and Industrial
NUA Underwater Acoustics
NWP Wave Propagation

Group 3: Physical Acoustics
PAT Acoustic Tweezers
PBW Bulk Wave Effects & Devices
PGP General Physical Acoustics
PLP Physical Acoustics Laser Interactions
PMI Magnetic/Electromagnetic Interactions
PNA Nano Acoustics
POI Optical Interactions
PPN Phononic Crystal Devices
PTF Thin Films
PTM Novel Transducer Mechanisms
PUM Ultrasonic Motors & Actuators

Group 4: Microacoustics: SAW, FBAR, MEMS
ADA Device Applications
ADD Device Design
ADM Device Modeling
AMP Materials & Propagation
AMS Microacoustic Sensor Devices & Applications

Group 5: Tranducers & Transducer Materials
TMC Materials Characterization & Fabrication
TMI Medical ImagingTransducers
TMO Modeling (Analytical & Numerical)
TMU Micromachined Ultrasonic Transducers
TFT Thick Film Piezo-Technology
TPF Applications of Piezoelectric & Ferroelectrics
TTT Medical Therapeutic Transducers

Sponsored by the IEEE Ultrasonics, Ferroelectrics & Frequency Control Society

IEEE ULTRASONICS, FERROELECTRICS, AND FREQUENCY CONTROL SOCIETY

2013 IEEE Maxwell Award

Richard White (UFFC-Society member): One of the recipients of the 2013 IEEE Maxwell Award

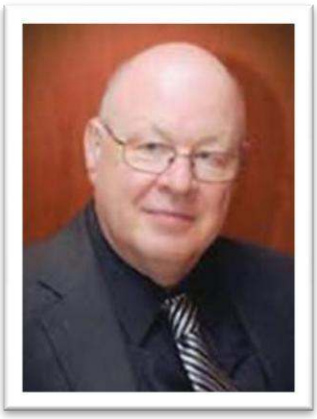
Scope of the Award: For groundbreaking contributions that have had an exceptional impact on the development of electronics and electrical engineering or related fields

The individual and collective contributions of Richard S. Muller and Richard M. White to the development and advancement of micro-electro-mechanical systems (MEMS) have resulted in technologies critical to applications ranging from cell phones to air-bag sensors in automobiles. Dr. White's development in 1965 of a microfabricated surface acoustic wave (SAW) electric filter is considered an early example of a MEMS device and the first to receive worldwide commercial attention. Today's mobile phones rely on SAWs based on Dr. White's work in order to function properly. Dr. Muller's research in 1965 demonstrating mechanical coupling into microelectronic devices, and his further work on fabrication processes during the 1980s, was fundamental to the growth of MEMS. Dr. Muller and his research group introduced polysilicon as a structural mechanical material and pioneered "surface micromachining" for creating MEMS devices. In 1981, Dr. Muller successfully proposed to IEEE the creation of the Journal of Microelectromechanical Systems and served as its Editor-in-Chief from 1997 to 2012. Together, Drs. Muller and White in 1986 founded the Berkeley Sensor & Actuator Center (BSAC) with the support of the NSF at the University of California. Under the pair's guidance, together with that of a subsequent growing number of BSAC Directors, this industry/university cooperative research center has educated generations of students, developing some of the premier researchers active today in the MEMS field. BSAC researchers have investigated and contributed in a broad area of MEMS advances, including those making possible the accelerometers and gyroscopes found in automobile safety systems.

Both recipients are IEEE Life Fellows, members of the U.S. National Academy of Engineering, and Professors Emeriti with the Department of Electrical Engineering and Computer Sciences at the University of California, Berkeley, CA, USA.

2013 IEEE UFFC AWARDS

2013 Society Awards

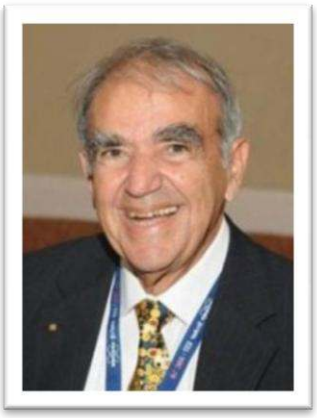


Michael Driscoll
Distinguished Service Award

Chen Tsai
Achievement Award

Takaaki Tsurumi
Distinguished Lecturer Award

2013 Ultrasonics Award and Ferroelectrics Awards



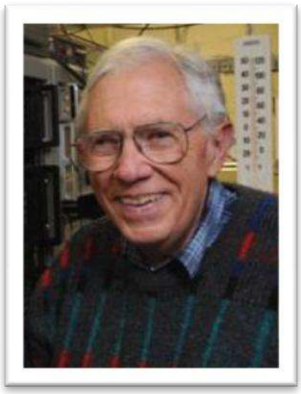
Moises Levi
Rayleigh Award

Kenji Uchino
Ferroelectrics Recognition Award

Nazanin Bassiri–Gharb
Ferroelectrics Young Investigator Award

2013 Frequency Control Awards

Dave Howe
Cady Award



Judah Levine
Rabi Award

Lute Maleki
Sawyer Award

2013 European Frequency and Time Forum Awards

Kurt Gibble
European Frequency and Time Award

Andrew Ludlow
EFTF Young Scientist Award

2013 IEEE FELLOWS of the UFFC-Society

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Ferroelectrics

Paul Muralt
Ferroelectrics

Kenji Uchino
Ferroelectrics

Ton van der Steen
Ultrasonics

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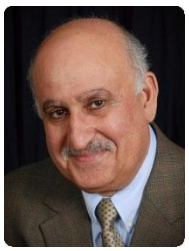

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Welcome from the Technical Program Chairs






The Institute of Electrical and Electronic Engineers' Ultrasonics, Ferroelectrics, and Frequency Control society (IEEE–UFFC) in concert with the International Symposium on the Applications of Ferroelectrics – Piezoresponse Force Microscopy Workshop (ISAF–PFM) and the European Frequency and Time Forum (EFTF) welcome you to Prague. The joint symposium celebrates the 60th anniversary of the IEEE–UFFC Society and also will be the 6th in the series of successful joint meetings between the EFTF and IFCS and the 3rd joint meeting between the ISAF and PFM. The technical program, consisting of tutorials, plenary sessions, invited presentations, round table discussions and oral/poster sessions, clearly shows the diversity and synergy of our rich and vibrant international community. This four day meeting is truly a unique opportunity to meet, discuss, and learn from colleagues across the technical community from around the globe. We hope you enjoy the week in Prague.

IUS Technical Program Chair
Stanislav Emelianov, The University of Texas at Austin

ISAF Technical Program Co-Chairs
Susan Trolier–McKinstry, Penn State University
Dragan Damjanovic, EPFL, Switzerland
Andrei Kholkin, University of Aveiro, Portugal

IFCS–EFTF Technical Program Co-Chairs
Warren Walls, U.S. Naval Observatory
Gaetano Mileti, University of Neuchâtel, Switzerland

IUS Short Courses

1A: 8:30–12:30 **Medical Ultrasound Transducers**
Instructors: **Douglas G. Wildes, L. Scott Smith**, GE Global Research

1B: 8:30–12:30 **Hydrophone-based Measurement of Ultrasonic Fields for Biomedical, Non-Destructive Testing, and Regulatory (US FDA) Applications**
Instructors: **Keith A. Wear,** US Food and Drug Administration, **Andrew M. Hurrell,** PrecisionAcoustics Ltd, **Peter A. Lewin,** Drexel University, **Volker Wilkens,** Physikalisch–Technische Bundesanstalt, **Bajram Zeqiri,** National Physical Laboratory

1C: 8:30–12:30 **Signal Processing and System-on-Chip Designs for Ultrasonic Imaging, Detection and Estimation Application**
Instructors: **Jafar Saniie**, Department of Electrical and Computer Engineering at Illinois Institute of Technology, **Ramazan Demirli**, Center for Advanced Communications, Villanova University, **Erdal Oruklu**, Department of Electrical and Computer Engineering, Illinois Institute of Technology

1D: 8:30–12:30 **Nondestructive Materials Characterization by Ultrasonic Techniques**
Instructors: **Walter Arnold,** Saarland University

1E: 8:30–12:30 **High Frequency Transducers and Their Applications**
Instructors: **Jeffrey C. Bamber**, Institute of Cancer Research and Royal Marsden Hospital, **Timothy Button**, University of Birmingham, **Christine Demore**, Dundee University

1F: 8:30–12:30 **Biomedical Photoacoustics: From Bench to Bedside**
Instructors: **Stanislav Emelianov**, **Richard Bouchard**, University of Texas

2A: 1:30–6:00 **Acoustic Tweezing: Modeling, Implementation and Applications**
Instructors: **Bruce W Drinkwater,** Department of Mechanical Engineering, University of Bristol, **Martyn Hill**, Sounthampton University, **Sandy Cochran**, Dundee University

2B: 1:30–6:00 **Materials for ultrasound transducers**
Instructors: **Susan Trolier–McKinstry** Materials Research Lab, Penn State University, **Sandy Cochran**, Dundee University

2C: 1:30–6:00 **Ultrasonic Characterization of Advanced Materials**
Instructors: **Michal Landa, Hanuš Seiner, Petr Sedlák**, Institute of Thermomechanics, Academy of Sciences of the Czech Republic

2D: 1:30–6:00 **Quantitative Acoustic Microscope – Measurement, Analysis, Biological and Materials Science Application**
Instructors: **Naohiro Hozumi,** Toyohashi University of Technology**, Kazuto Kobayashi**, Honda Electronics, **Sachiko Yoshida**, Toyohashi University of Technology, **Roman Gr. Maev,** Institute for Diagnostic Imaging Research, **Fedar Seviaryn**, University of Windsor

2E: 1:30–6:00 **Plane Wave Imaging and Applications for Ultrafast Doppler, Elastography, and Contrast**
Instructors: **Mathias Fink, Mickael Tanter,** Langevin Institute, ESPCI ParisTech

2F: 1:30–6:00 **Ultrasound Contrast Agents: Theory and Experiment**
Instructors: **Nico de Jong**, Erasmus MC, **Michel Versluis**, University of Twente

ISAF-PFM Short Courses

Basic Principles of Ferroelectricity and Piezo Force Microscopy

1A: 8:00 am–10:00 am, Fundamentals of Ferroelectrics and Piezoelectrics
Instructor: David Cann

1B: 10:30 am–12:30 pm, Principles and Applications of Piezoresponse Force Microscopy
Instructor: Alexei Gruverman

Theory and Modeling

2A: 8:00 am–10:00 am, *First principles methods*
Instructor: Craig Fennie

2B: 10:30 am – 12:30 pm, *Phenomenology of ferroelectrics*
Instructor: George Rossetti

Advanced PFM Techniques

1C: 1:30 pm – 3:30 pm, Advanced Piezoresponse Force Microscopy Modes including acoustic and ultrasonic applications
Instructor: Sergei Kalinin

1D: 4:00 pm – 6:00 pm, Visualization and Manipulation of Electric Polarization and Charges using Atomic Force Microscopy
Instructor: Seungbum Hong

Piezo MEMS

2C: 1:30 pm – 3:30 pm, Piezoelectric thin films
Instructor: Isaku Kanno

2D: 4:00 pm – 6:00 pm, Piezoelectric materials for MEMS applications
Instructor: Paul Muralt

IFCS-EFTF Short Courses

Track 1

1.1 8:00–10.00 **Timing for GNSS and GNSS for Timing**
Pascale Defraigne, Royal Observatory of Belgium, Belgium

1.2 10.30 -12.30 **Statistical Characterization of Clocks for Timekeeping and Navigation Applications**
Patrizia Tavella, Instituto Nazionale di Ricerca Metrologica, Italy

1.3 1:30–3.30 **Fabrication Methods for MEMS-Based Frequency Control Devices**
Clark T.-C. Nguyen, Berkeley, USA

1.4 4:00–6:00 **Fundamentals of Crystal Resonators and Oscillators**
John Vig, USA

Track 2

2.1 8:00–10:00 **Femtosecond Laser-based Optical frequency combs for frequency metrology**
Yann Le Coq, LNE-SYRTE, Observatoire de Paris, CNRS, UPMC, France

2.2 10:30–12.30 **Lasers for Optical Frequency Standards**
Stephen Webster, M SQUARED LASERS LTD, UK

2.3 1:30–3.30 **Frequency & Time Transfer using Optical Fibers**
Gesine Grosche, PTB, Germany

2.4 4:00–6:00 **Compact Atomic Clocks**
Gaetano Mileti, Laboratoire Temps – Fréquence, Université de Neuchâtel, Switzerland

Track 3

3.1 8:00–10:00 **Crystal Oscillator Design, Analysis, Simulation and Verification**
M. Michael. Driscoll, USA

3.2 10:30–12:30 **The Pound Drever Hall Frequency Control Loop, Theory and Application**
E. Rubiola, FEMTO-ST Institute, France

3.3 1:30–3:30 **Optical Oscillators**
Lute Maleki, OEWaves, USA

3.4 4:00–6:00 **Phase and Amplitude Noise: Theory & Measurement**
Craig Nelson, NIST, Boulder USA

IUS Technical Program Committee

Group 1: Medical Ultrasonics

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Olivier Basset, CREATIS, Universite Lyon I, France
Ayache Bouakaz, INSERM, Universite Tours, France
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Piero Tortoli, Universita degli Studi di Firenze, Italy
Ton van der Steen, Erasmus Medical Centre, Rotterdam, Netherlands

Kendall Waters, Silicon Valley Medical Instruments, USA
Keith Wear, US Food and Drug Administration, USA
Wilko Wilkening, Siemens Medical Solution, USA
Hairong Zheng, Zhenzhen Institutes of Advanced Technology, China

Group 2: Sensors, NDE, and Industrial Application

Jafar Saniie-Chair, Illinois Institute of Technology, Chicago, Illinois, USA
Robert C. Addison, Rockwell Science Center, USA
Walter Arnold, Fraunhofer Institute for NDT, Germany
Michal Bezdek, Endress+Hauser Flowtec AG, Switzerland
James Blackshire, Air Force Research Laboratory
Ramazan Demirli, Villanova University, USA
James Friend, Monash University, Australia
Eric S. Furgason, Purdue University, USA
David Greve, Carnegie Mellon University, USA
Edward Haeggstrom, University of Helsinki, Finland
Jacqueline Hines, Applied Sensor R&D Corporation, USA
Patrick Johnston, NASA Langley Research Center, USA
Fabien J. Josse, Marquette University, USA
Lawrence W. Kessler, Sonoscan Inc., USA
Pierre T. Khuri–Yakub, Stanford University, USA
Mario Kupnik, Brandenburg University of Technology, Germany
Roman Maev, University of Windsor, Canada
Kentaro Nakamura, Tokyo Institute of Technology
Erdal Oruklu, Illinois Institute of Technology, USA
Massimo Pappalardo, University di Roma TRE, Italy
Bernhard Tittman, Pennsylvania State University, USA
Jiromaru Tsujino, Kanagawa University, Japan
John F. Vetelino, University of Maine, USA
Paul Wilcox, University of Bristol, UK
William Wright, University College Cork, Ireland
Donald E. Yuhas, Industrial Measurement Systems, USA

Group 3: Physical Acoustics

Vincent Laude-Chair, Centre National de la Recherche Scientifique, France
Manabu Aoyagi, Muroran Institute of Technology, Japan
Art Ballato, Clemson University, Clemson SC, USA
Jan Brown, JB Consulting, USA
Emmanuel Defay, CEA LETI, Minatec Campus, France
Christine Demore, University of Dundee, UK
Jianke Du, Ningbo University, China
Tao Han, Shanghai Jiaotong University, China
Fred Hickernell, Retired from Motorola, USA
Takefumi Kanda, Okayama University, Japan
Eun Sok Kim, University of Southern California, USA
Minoru Kuribayashi Kurosawa, Tokoy Institute of Technology, Japan
Amit Lal, Cornell University, USA

John Larson, Avago Technologies, USA
Andreas Mayer, Hochschule Offenburg, Germany
Roy H. Olsson III, Sandia National Laboratories, USA
Mihir Patel, Schlumberger–Doll Research, USA
Yan Pennec, Universite de Lille 1, France
Susan Schneider, Marquette University, USA
Bikash Sinha, Schlumberger–Doll Research, USA
Koen W.A. van Dongen, Delft University of Technology, Netherlands
Joerg Wallaschek, Leibniz Universitaet Hannover, Germany
Ji Wang, Ningbo University, China
Tsung–Tsong Wu, National Taiwan University, Taiwan R.O.C.
Yook–Kong Yong, Rutgers University, USA
Jiun Der Yu, Epson Research and Development Inc., USA
Sergei Zherlitsyn, Helmholtz–Zentrum Dresden–Rossendorf, Germany

Group 4: Sensors & Transducers

Karl Wagner-Chair, TDK Corporation, Germany
Ben Abbott, Triquint Semiconductor, USA
Robert Aigner, Triquint Semiconductor, USA
Ivan Avramov, Institute of Solid State Physics, Bulgaria
Sylvain Ballandras, FEMTO–ST—CNRS, France
Kushal Bhattacharjee, RF Micro Devices, USA
Sunil Bhave, Cornell University, USA
Sergey Biryukov, IFW Dresden, Germany
Paul Bradley, Avago Technologies, USA
Jidong Dai, RF Monolithics, USA
Omar Elmazria, Universite de Nancy—CNRS, France
Gernot Fattinger, Triquint Semiconductor, USA
Gerhard Fischerauer, University of Bayreuth, Germany
James Friend, RMIT University, Australia
Ken–ya Hashimoto, Chiba University, Japan
Shitang He, IACAS, China
Chunyun Jian, Ericsson, Canada
Michio Kadota, Tohoku University, Japan
Jyrki Kaitila, Avago Technologies, Germany
Ilia Katardjiev, Uppsala University, Sweden
Takaharu Kawakatsu, Murata Manufacturing, Japan
Kimmo Kokkonen, Aalto University, Finland
Jan Kuypers, Sand 9, Inc., USA
Don Malocha, University of Central Florida, USA
Natalya Naumenko, Technological University Moscow, Russia
Hiroyuki Odagawa, Kumamoto National College of Technology, Japan
Takeo Oita, University of Tokyo, Japan
Tuomas Pensala, VTT, Finland
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Richard Ruby, Avago Technologies, USA

Clemens Ruppel, TDK Corporation, Germany
Takahiro Sato, Samsung, Japan
Marc Solal, Triquint Semiconductor, USA
Florian Thalmayr, Sand 9, Inc., USA
Masanori Ueda, Taiyo Yuden, Japan
Robert Weigel, Friedrich–Alexander University Erlangen–Nuernberg, Germany
Sergei Zhgoon, Moscow Power Engineering Institute, Russia

Group 5: Transducer and Transducer Materials

Paul Reynolds-Chair, Transformatix Technologies Inc, USA
Scott Smith, GE Global Research, USA
Sandy Cochran, University of Dundee, UK
Christopher, Daft Cephasonics Inc, USA
Levent Degertekin, Georgia Institute of Technology, USA
Charles Emery, Mirabilis Medical, USA
John Fraser, John Fraser Consulting, USA
Jean– Francois Gelly, GE Healthcare, France
Reinhard Lerch, Friedrich–Alexander–Universitaet Erlangen–Nuremberg, Germany
Geoff Lockwood, Queen's University, Canada
Omer Oralkan, North Carolina State University, USA
Paul Reynolds, Paul Reynolds Consulting, USA
Yongrae Roh, Kyungpook National University, Korea
Ahmad Safari, Rutgers University, USA
Mark Schafer, Sonic Tech Inc., USA
Stephen Smith, Duke University, USA
Wallace Smith, Office of Naval Research, USA
Yasuhito Takeuchi, Kagoshima University, Japan
Jian Yuan, Philips Shanghai Apex, USA
Qiming Zhang, Pennsylvania State University, USA
Qifa Zhou, University of Southern California, USA
Steven Freear, University of Leeds, UK
Richard O'Leary, University of Strathclyde, UK
Sorah Rhee, Ethicon Endo–Surgery, USA
Loriann Davidsen, Philips Healthcare, USA
Wei Ren, Xi'an Jiaotong University, China
Jean–Francois, Saillant, Areva, France

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Susan Trolier–McKinstry–Chair, Pennsylvania State University, USA
David Cann, Oregon State University, USA
Dragan Damjanovic, EPFL, Switzerland

Group II: Processing of Ferroelectric Crystals, Ceramics, Thick and Thin Films

Geoffrey Brennecka–Chair, Sandia National Laboratories, USA
Paul Clem, Sandia National Laboratories, USA

Group III: Characterization & Properties of Ferroelectrics

Jacob Jones–Chair, University of Florida, USA
Xiaoli Tan, Iowa State, USA

Group IV: Applications of Ferroelectrics, Piezoelectrics and Related Materials

Nazanin Bassiri Gharb–Chair, Georgia Institute of Technology, USA
Glen Fox, Fox Materials Consulting, USA

PFM Technical Program Committee

Andrei Kholkin–Chair, University of Aveiro, Portugal
Jiangyu Li, University of Washington, USA

IFCS-EFTF Technical Program Committee

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Jean-Pierre Aubry, Consultant
Shih Chuang, Statek CO
Bernard Dulmet, FEMTO-ST
Yoonkee Kim, US Army CERDEC, C2D
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Dan Stevens, Consultant
Ji Wang, Ningbo University
Yasuaki Watanabe, Tokyo Metro University
Dana Weinstein, MIT
Yook-Kong Yong, Rutgers University

Group 2: Oscillators, Synthesizers, Noise & Circuit Techniques

Martin Bloch, Frequency Electronic Inc
Gilles Cibiel, CNES
Michael Driscoll, Consultant
Jeremy Everard, University of York
Marvin Frerking, Innovative Technology Products
Patrick Green, Norhrop Grumman
David Howe, NIST
Wan-Thai Hsu, Discera Inc
Eugene Ivanov, University of Western Australia
Eun Sok Kim, USC
Takeo Oita, the University of Tokyo
Enrico Rubiola, FEMTO-ST
Fabrice Sthal (group chair), FEMTO-ST
Michael Tobar, the University of Western Australia
Mike Underhill, Underhill Research
Wei Xidian, University

Group 3: Microwave Frequency Standards

Patrick Berthoud, Oscilloquartz SA
Eric Burt, Jet Propulsion Laboratory
Elizabeth Donley, NIST
Christopher Ekstrom, U.S. Naval Observatory
Kurt Gibble, Penn State
Yuko Hanado, NICT
John Kitching (group chair), NIST
Arnaud Landragin, SYRTE
Steve Lecomte, CSEM
Ho Seong Lee, KRISS
Filippo Levi, INRIM
Tianchu Li, NIM
Robert Lutwak, Symmetricom
Lute Maleki, OEwaves
Louis Marmet, INMS, NRC Canada
Fritz Riehle, Physikalisch-Technische Bundesanstalt
Christophe Salomon, LKB/ENS
Krzysztof Szymaniec, NPL
Robert Tjoelker, Jet Propulsion Laboratory
Stefan Weyers, PTB

Group 4: Sensors & Transducers

Jeff Andle, SenGenuity
Sylvain Ballandras, FEMTO-ST
Mark Cheng, Wayne State University
Philip Feng, Case Western Reserve University
Jackie Hines, Applied Sensor Research
Diethelm Johannsmann, TU Clausthal
Fabien Josse (group chair), Marquette University
Svenja Knappe, NIST
Shigeru Kurosawa, Adv. Industrial Science & Tech
Olivier Le Traon, ONERA
Ryszard Lec, Drexel University
Ralf Lucklum, Otto-von-Guericke-University
Donald Malocha, University of Central Florida
Glen McHale, Nottingham Trent University (UK)
Paul Muralt, EPFL (CH)
Mauricio Pereira da Cunha, Univ. of Maine
Leonhard Reindl, University of Freiburg
Clemens Ruppel, EPCOS AG
Ashwin Seshia, University of Cambridge
Isao Shimoyama, Univ. of Tokyo

Group 5: Timekeeping, Time and Frequency Transfer, GNSS Applications

Andreas Bauch, PTB
Laurent-Guy Bernier, METAS Swiss Office of Metrol.
Javier de Vicente, ESA-ESOC
Pascale Defraigne, Royal Observatory of Belgium
Jérôme Delporte, CNES
Gesine Grosche, PTB
Philippe Guillemot, CNES
Jorg Hahn, ESA
Masaki Amemiya, AIST
Jan Johansson, SP Tech. Research Inst. of Sweden
Judah Levine, NIST
Demetrios Matsakis, U.S. Naval Observatory
Dirk Piester (group chair), PTB
Wolfgang Schaefer, TimeTech GmbH
Samuel Stein, Symmetricom, Inc
Patrizia Tavella, INRIM
Philip Tuckey, LNE-SYRTE, Paris Observatory
Pierre Uhrich, SYRTE
Pierre Waller, ESA
Michael Wouters, National Measurement Institute

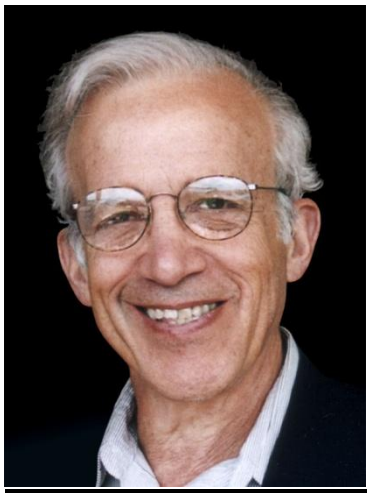
Group 6: Optical Frequency Standards and Applications

Sébastien Bize (group chair), SYRTE-Observatoire de Paris
Luigi Cacciapuotti, European Space Agency
Pierre Dube, NRC
Patrick Gill, National Physical Laboratory
Jason Jones, University of Arizona
Hidetoshi Katori, Quantum Metrology Laboratory, Tokyo
Nikolai Kolachevsky, Lebedev Inst. of Russian Ac.
Yann Le Coq, SYRTE
Christian Lisdat, PTB
Andrew Ludlow, NIST
Long-Sheng Ma, East China Normal University
Ekkehard Peik, PTB
Nicola Poli, LENS
Ivan Prochazka, Electronics, ELT Prague
Bruce Warrington, National Measurement Institute
Jun Ye, JILA, University of Colorado

Plenary Sessions-Speakers

Monday: Peter Burns

Tuesday: Kenji Uchino



Wednesday: Daniel Kleppner

Thursday: Patrick Gill

Thursday: Andreas Schoenecker

Thursday: Roman Maev

<u>Plenary Session I</u>, Monday July 22, 8:30 – 10:00
Opening, UFFC Achievement Award, Ultrasonics New Fellows, and IUS Awards
IUS Plenary talk: Session Chair: Stanislav Emelianov
Plenary speaker: Peter Burns, University of Toronto, Canada
Cancer and the Acoustic Bubble

<u>Plenary Session II</u>, Tuesday July 23, 8:30 – 10:00
UFFC Distinguished Lecturer Award, Ferroelectrics Awards, Ferroelectrics New Fellows
ISAF-PFM Plenary talk: Session Chair: Susan Trolier-McKinstry
Plenary speaker: Kenji Uchino, ONR Global-Asia & the Pennsylvania State University, USA
Piezoelectric Actuator Renaissance

Plenary Session III, Wednesday July 24, 8:30 – 10:00
Distinguished Service Award, IFCS and EFTF Awards
IFCS-EFTF Plenary talk: Session Chair: Warren Walls
Plenary speaker: Daniel Kleppner, MIT-Harvard Centre for Ultracold Atoms, USA
In Praise of the Useless and the Useful: The Creation of Atomic Clocks

Plenary Session IV and Roundtable Discussion, Thursday July 25, 16:30 – 18:15
Session Chair, Ahmad Safari

IFCS-EFTF: Patrick Gill, National Physical Laboratory, UK
Optical Clocks – Way ahead of their Time?

ISAF-PFM: Andreas Schoenecker, Fraunhofer IKTS, Germany
Smart solutions for a sustainable future – advances in smart materials, production technologies and applications

IUS: Roman Maev, University of Windsor, Ontario, Canada
New Generation of High Resolution Ultrasonic Imaging Technology for Material Characterization and NDT in Advanced Automotive Manufacturing

Roundtable discussion: 17:45–18:15
Patrick Gill, Andreas Schoenecker, Roman Maev

IUS Invited Speakers

Group 1: Medical *Ultrasonics*

Mickael Tanter, Institut Langevin, ESPCI, France
Vasilis Nitziachristos, Institute for Biological and Medical Imaging, Germany
Ayache Bouakaz, Université François–Rabelais de Tours, France
John Hossack, University of Virginia, USA
Denise Hocking, University of Rochester, USA
Kathy Nightingale, Duke University, USA

Group 2: Sensors, NDE, and Industrial Application

Yonina Eldar, Israel Institute of Technology, Israel
Mike Todd, University of California San Diego, USA
Mauricio Pereira da Cunha, University of Maine, USA

Group 3: Physical Acoustics

Bruce W. Drinkwater, University of Bristol, UK
Sébastien Guenneau, Institut Fresnel, France
Victor V. Krylov, Loughborough University, UK

Group 4: Microacoustics - SAW, FBAR, MEMS

Rich Ruby, Avago Technologies, USA
Robert Aigner, Triquint Semiconductor Inc, USA
Wolfram Pernice, Karlsruhe Institute of Technology, Germany
Naoki Uchiyama, Hamamatsu Photonics, Japan

Group 5: Transducers and Transducer Materials

Qifa Zhou, University of Southern California, USA
Christine Démoré, University of Dundee, United Kingdom
Margaret Lucas, University of Glasgow, United Kingdom
Rémi Dufait, Vermon, France

ISAF Invited Speakers

Group 1: Fundamentals of Ferroelectrics and Related Materials

George Rossetti, University of Connecticut, USA
Ian Reaney, University of Sheffield, United Kingdom
Lane Martin, University of Illinois, USA
Tor Grande, Norwegian Institute of S&T, Trondheim, Norway
Stanislav Kamba, Institute of Physics, Academy of Sciences, Czech Republic
Celine Lichtensteiger, University of Geneva, Switzerland

Group 2: Processing of Ferroelectric Crystals, Ceramics, Thick and Thin Films

Takaaki Tsurumi, Tokyo Tech, Japan
Tadej Rojac, Jozef Stefan Institute, Slovenia
Shujun Zhang, Pennsylvania State University, USA
Nazanin Bassiri-Gharb, Georgia Tech, USA
Jon Ihlefeld, Sandia National Laboratories, USA
Hong Wang, Xi'an Jiaotong University, PR China

Group 3: Characterization & Properties of Ferroelectrics

Yasuo Cho, Tohoku University, Japan
Ruediger Eichel, RWTH Aachen, Germany
Pam Thomas, University of Warwick, United Kingdom
Jan Petzelt, Institute of Physics, Academy of Sciences, Czech Republic

Group 4: Applications of Ferroelectrics, Piezoelectrics and Related Materials

Clive Randall, Pennsylvania State University, USA
Paul Muralt, Swiss Federal Institute of Technology in Lausanne, Switzerland
Shoichiro Suzuki, Murata, Japan
Arman Hajati, Fujifilm Dimatix, USA
Brian Pazol, Materials Systems, USA

PFM Invited Speakers

Ying–Hao (Eddie) Chu, National Chiao Tung University, Taiwan, ROC
Marin Alexe, Max–Planck Institute, Germany
Alexei Gruverman, University of Nebraska–Lincoln, USA
Valanoor Nagarajan, University of New South Wales, Australia
Sergei Kalinin, Oak Ridge National Laboratory, USA
Brian Rodriguez, University College Dublin, Ireland

IFCS–EFTF Invited Speakers

Group 1: Materials, Resonators, & Resonator Circuits

Randy Kubena, Hughes Research Laboratory, USA
Dana Weinstein, Massachusetts Institute of Technology, USA
Aaron Partridge, SiTime Corporation, USA
Sheng–Shian Li, National Tsing Hua University, Taiwan

Group 2: Oscillators, Synthesizers, Noise, & Circuit Techniques

Wei Zhou, Xidian University, China
Vincent Cros, CNRS, France
Xianhe Huang, Chengdu University, China
Maxim Goryachev, University of Western Australia, Australia

Group 3: Microwave Frequency Standards

Peter Schwindt, Sandia National Labratories, USA
Filippo Levi, INRIM, Italy
Jocelyne Guena, SYRTE, France
Guglielmo Tino, LENS, Italy

Group 4: Sensors & Transducers

Bernard Legrand, IEMN Lilles, France
Antoine Weis, University of Fribourg, Switzerland
Max Zenghui Wang, Case Western Reserve University, USA
Diethelm Johannsmann, Clausthal University of Technology, Germany

Group 5: Timekeeping, Time and Frequency Transfer, GNSS Applications

Erik van der Bij, CERN, France
Alexander Mudrak, ESTEC, Netherlands
Ulrich Schreiber, Technical University Munich, Germany
Miho Fujieda, NICT, Japan

Group 6: Optical Frequency Standards and Applications

Jun Ye, JILA, USA
Andrew Ludlow, NIST, USA,
Stephan Falke, PTB, Germany
Tobias Kippenberg, EPFL, Switzerland

IUS Student Paper Competition

IUS-SPC-1 Ultrasonic imaging of tightly closed cracks by linear phased array with global preheating and local cooling and the estimation of crack closure stress
Koji Takahashi, Yoshikazu Ohara, Kazushi Yamanaka
Materials Processing, Tohoku University, Sendai, Japan

IUS-SPC-2 Performance evaluation of reconfigurable FPGA based embedded ARM Processor for ultrasonic imaging
Spenser Gilliland, Pramod Govindan, Thomas Gonnot, Jafar Saniie
Electrical and Computer Engineering, Illinois Institute of Technology, USA

IUS-SPC-3 Laser ultrasonic velocity measurement for Phase transformation investigation in Ti alloy (Ti-6% Al-4% V)
Saeid Zamiri[1,2], Bernhard Reitinger[1], Jürgen Roither[1], Siegfried Bauer[3], Peter Burgholzer[1,2]
[1]Research Center for Non Destructive Testing, GmbH (RECENDT), Linz, Austria, [2]Christian Doppler Laboratory for Photoacoustic Imaging and Laser Ultrasonic, Linz, Austria, [3]Department of Soft Matter Physics, Johannes Kepler University, Linz, Austria

IUS-SPC-4 Optoacoustic Elastography for Tissue Biomechanical Property Characterization Using a Ring Transducer
Teng Ma[1], Rui Li[2], Wenjuan Qi[2], Qifa Zhou[1], Zhongping Chen[2], K. Kirk Shung[1]
[1]Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, [2]Beckman Laser Institute & Medical Clinic, University of California, Irvine, Irvine, California, USA

IUS-SPC-5 A 32x32 Integrated CMUT Array for Volumetric Ultrasound Imaging
Anshuman Bhuyan[1], Chienliu Chang[2], Jung Woo Choe[1], Byung Chul Lee[1], Amin Nikoozadeh[1], Omer Oralkan[3], Yagi Takayuki[2], Butrus Khuri–Yakub[1]
[1]Stanford University, USA, [2]Canon Inc., Japan, [3]North Carolina State University, USA

IUS-SPC-6 Towards Backscattering Tensor Imaging (BTI): Analysis of the Spatial coherence of ultrasonic speckle in anisotropic soft tissues
Clément Papadacci, Mathieu Pernot, Mickael Tanter, Mathias Fink
Institut Langevin, CNRS, ESPCI, Paris, France

IUS-SPC-7 Compensation of the Combined Effects of Absorption and Dispersion in Plane Wave Pulse-Echo Ultrasound Imaging Using Sparse Recovery
Martin Schiffner, Georg Schmitz
Chair of Medical Engineering, Bochum, NRW, Germany

IUS-SPC-8 Ultrasound-induced bioorthogonal chemistry in-situ using composite droplets
Marine Bézagu[1], Claudia Errico[1], Victor Chaulot–Talmon[1], Stellios Arseniyadis[1,2], Olivier Couture[1,2], Mickael Tanter[1,3], Janine Cossy[1], Patrick Tabeling[1]
[1]ESPCIParisTech, Paris, France, [2]CNRS, France, [3]INSERM, France

IUS-SPC-9 New Quantification Methods for Carotid Intraplaque Neovascularization in Contrast Enhanced Ultrasound (CEUS)
Zeynettin Akkus[1], Gonzalo Vegas Sanchez–Ferrero[2], Guillaume Renaud[1], Stijn C.H. van den Oord[3], Arend F.L. Schinkel[3], Nico de Jong[1], Antonius F.W. van der Steen[1]
[1]Biomedical Engineering-Thoraxcenter, Erasmus MC, Netherlands, [2]Image Processing Laboratory, University of Valladolid, Spain, [3]Department of Cardiology, Thorax center, Erasmus MC, Netherlands

IUS-SPC-10 Leaky Wedge Acoustic Waves in Single-Crystal Silicon
Alexey Lomonosov[1,2], Pavel Pupyrev[1,3], Peter Hess[2], Andreas Mayer[3]
[1]General Physics Institute, RAS, Moscow, Russian Federation,[2]Institute of Physical Chemistry, University of Heidelberg, Germany, [3]HS Offenburg- University of Applied Sciences, Gengenbach, Germany

IUS-SPC-11 Polarity control of c-axis oriented ZnO films and application to polarity-inverted ZnO multilayer resonators Ryosuke Hashimoto[1], Takahiko Yanagitani[2], **Ryo Ikoma**[1], Shinji Takayanagi[1], Masashi Suzuki[2], Hiroyuki Odagawa[3], Mami Matsukawa[1]
[1]Doshisha University, Japan, [2]Nagoya Institute of Technology, Japan,[3]Kumamoto National College of, Technology, Japan

IUS-SPC-12 Acoustic metamaterial: experimental investigation of the acoustic field scattered by isolated active resonators
RemiMarchal[1], Bernard Bonello[2], Jinfeng Zhao[1], Olga Boyko
[1]University Pierre et Marie Curie, France, [2]INSP, CNRS and University Paris 6, France

IUS-SPC-13 ScAlN Lamb Wave Resonator in GHz Range Released by XeF2 Etching
Akira Konno[1], ShotaSumisaka[2], Akihiko Teshigahara[3], Kazuhiko Kano[3], Ken-ya Hashimoto[2], Hideki Hirano[1], Masayoshi Esashi[1], ShujiTanaka[1]
[1]Tohoku University, Sendai, Japan, [2]Chiba University, Chiba, Japan, [3]DENSO CORPORATION, Nisshin, Japan

IUS-SPC-14 Advanced 2D Periodic Array and Full Transversal Mode Suppression
Jiman Yoon[1,2], Markus Mayer[2], Thomas Ebner[2], Karl Wagner[2], Achim Wixforth[1]
[1]Experimental Physics I, University of Augsburg, Augsburg, Bayern, Germany, [2]Advanced Development Discretes, TDK Corporation, Munich, Bayern, Germany

IUS-SPC-15 Impact of Surface Periodic Grating on FBAR Structures to Spurious Transverse Resonances
Jiansong Liu, Tatsuya Omori, Changjun Ahn, Ken-ya Hashimoto
Graduate School of Engineering, Chiba University, Chiba-shi, Chiba, Japan

IUS-SPC-16 Multifrequency intravascular ultrasound for assessment of atherosclerotic plaque vulnerability
Chelsea Munding, Emmanuel Cherin[2], JianhuaYin[2], HyunggyunLee[2], David Goertz[2], Brian Courtney[3], Stuart Foster[2]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada, [2]Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada, [3]Schulich Heart Research Program, Sunnybrook Health Sciences Centre, Canada

IUS-SPC-17 Performance of a Miniaturized 64-Element High-Frequency Phased Array based on PMN-PT
Andre Bezanson, Robert Adamson, Jeremy Brown
Biomedical Engineering, Dalhousie University, Halifax, Nova Scotia, Canada

IUS-SPC-18 Real-time Co-registered IVUSOCT Catheter for Atherosclerotic Plaque Identification and Stent Deployment Verification
Teng Ma[1], Jiawen Li[2], Dilbahar Mohar[3], Joseph Jing[2], Matthew Brenner[4], Pranav M. Patel[3], K. Kirk Shung[1], Zhongping Chen[2], Qifa Zhou[1]
[1]NIH Ultrasonic Transducer Resource Center and Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, [2]Beckman Laser Institute & Medical Clinic and Department of Biomedical Engineering, University of California – Irvine, Irvine, California, USA, [3]Division of Cardiology, UC Irvine Medical Center, Irvine, California, USA, [4]Division of Pulmonary and Critical Care, UC Irvine Medical Center, Irvine, California, USA

ISAF–PFM Student Paper Competition

ISAF-SPC-1 Electric Field-Induced Deformation Behavior In Mixed $Bi_{0.5}(Na_{0.8}K_{0.2})_{0.5}TiO_3$ and $Bi_{0.5}(Na_{0.385}K_{0.09}Li_{0.025})(Ti_{0.975}Ta_{0.025})O_3$
Dae–Jun Heo, Chang–Ho Yoon, Hyoung–Su Han, Hyun–Young Lee, Jae-Shin Lee
University of Ulsan, Republic of Korea

ISAF-SPC-2 Temperature Dependence of Domain Contributions to Pie-zoelectric Activity in the Soft- & Hard-doped Lead ZirconateTitanate and La-doped Bismuth Ferrite Lead Titanate Systems
Adam Qaisar, Andrew Bell, Tim Comyn
Institute for Materials Research, University of Leeds, Leeds, West Yorkshire, United Kingdom

ISAF-SPC-3 General Behavior of Soft Mode and Central Mode in Strained $SrTiO_3/DyScO_3$ multilayers
Volodymyr Skoromets[1], Christelle Kadlec[1], Jürgen Schubert[2], Gregor Panaitov[2], Petr Kužel[1]
[1]Department of Dielectrics, Institute of Physics, Academy of Sciences of Czech Republic, Prague 8, Prague, Czech Republic, [2]Institute of Bio and Nanosystems, Germany

ISAF-SPC-4 Fabrication and characterization of $BaTiO_3$ ultrathin ferroelectric layers to investigate the origin and characteristics of domain conductivity
Alan Douglas, Li–Wu Chang, Marty Gregg
Centre for Nanostructured Media, Queens University of Belfast, Belfast, United Kingdom

ISAF-SPC-5 Composition dependence of PMN–PT thin films prepared by Combinatorial sputtering
Fumiya Kurokawa[1], Kohei Tomioka[2], Hirotaka Hida[3], Isaku Kanno[3]
[1]Mechanical Engineering, Kobe University, Kobe City, Japan, [2]Micro Engineering, Kyoto, [3]Kobe University, Japan

ISAF-SPC-6 Processing ceramic (Bi,Sm)FeO_3: comparing two methods of synthesis by microstructure, phase evolution, polarization and strain behavior
Julian Walker[1]
[1]Materials science and engineering, University of New South Wales, Ljubljana, Slovenia

ISAF-SPC-7 Textured $K_{0.5}Na_{0.5}NbO_3$ thin films by aqueous chemical solu-tion deposition on $SrTiO_3$ substrates
Ky Nam Pham[1], Maxim Morozov[1], Thomas Tybell[2], Tor Grande[1], Mari–Ann Einarsrud[1]
[1]Department of Material Science and Engineering, Norwegian University of Science and Technology, Trondheim, Norway, [2]Department of Electronics and Telecommunications, Norwegian University of Science and Technology, Trondheim, Norway

ISAF-SPC-8 Growth and Piezo-/Ferroelectric Properties of $Pb(Mg_{1/3}Nb_{2/3})O_3$–$PbTiO_3$–$Bi(Zn_{½}Ti_{1/2})O_3$ Ternary Single Crystals
Reagan Belan[1], Hamel Tailor[2], Zuo–Guang Ye[2]
[1]Chemistry, Simon Fraser University, Vancouver, British Columbia, Canada, [2]Simon Fraser University, Canada

ISAF-SPC-9 Enhanced Flexoelectric Effect in A Non-ferroelectric Composite
Yong Li, Hong Wang
Xi'an Jiaotong University, China, People's Republic of

ISAF-SPC-10 High frequency magnetoimpedance effects in multiferroic $CoTiO_2$–$Bi_4Ti_3O_{12}$ multilayer films
Hanae Kijima[1,2], Yiwen Zhang[3], Nobukiyo Kobayashi[4], Shigehiro Ohnuma[3,4], Nava Setter[5], Paul Muralt[5], Hiroshi Masumoto[3]
[1]Center for Interdisciplinary Research, Tohoku University, Sendai, Miyagi, Japan, [2]Laboratoire de Ceramique, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland, [3]Center for Interdisciplinary Research, Tohoku University, Japan, [4]Research Institute for Electromagnetic Materials, Japan, [5]Ecole Polytechnique Fédérale de Lausanne, Switzerland

ISAF-SPC-11 Large and stable actuation strain by reversible 90º domain switching in 0.62%PMN–0.38%PT crystal under electromechanical loading
Yingwei Li, Faxin Li
Peking University, China, People's Republic of

ISAF-SPC-12 A MEMS AlN transducer array for use as a cochlear implant
Katherine Knisely, Karl Grosh
University of Michigan – Ann Arbor, USA

ISAF-SPC-13 Piezoelectric Films for High Density Switching Arrays for Logic
Ryan Keech[1], Smitha Shetty[1], Susan Trolier–McKinstry[1], Dennis Newns[2], Glenn Martyna[2]
[1]Materials Science and Engineering, Pennsylvania State University, State College, Pennsylvania, USA, [2]IBM TJ Watson Research Center, Yorktown Heights, NY, USA

ISAF-SPC-14 $Pb(In_{1/2}Nb_{1/2})–Pb(Mg_{1/3}Nb_{2/3})–PbTiO_3$ single crystal monomorph with perpendicular electrode connections for sensing and energy harvesting
Ming Ma, Zhenrong Li, Zhuo Xu, Xi Yao
Electronic Materials Research Laboratory, Key Laboratory of Education Ministry; International Center, Xi'an Jiaotong University, Xi'an, Shaanxi, People's Republic of China

ISAF-SPC-15 $Al_{1-x}Sc_xN$ thin films as promising non-ferroelectric materials for energy harvesting
Ramin Matloub[1], Gilles Moulard[2], Thomas Metzger[2], Paul Muralt[1]
[1]Material science, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland
[2]TDK–EPC Corporation, Munich, Munich, Germany

IFCS–EFTF Student paper Competition

GROUP 1

IFCS-EFTF SPC-21 2.8 GHz Combined Mode of Vibration Aluminum Nitride MEMS Resonator with High Figure of Merit Exceeding 45
Yu Hui
Department of Electrical and Computer Engineering, Northeastern University, Boston, MA/USA

IFCS-EFTF SPC-22 Close-in Phase Noise Reduction in an Oscillator based on 222 MHz Non-Linear Contour Mode AlN Resonators
Jeronimo Segovia–Fernandez
Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA

IFCS-EFTF SPC-23 Sliced Lithium Niobate on Silicon Dioxide for Engineering the Temperature Coefficient of Frequency of Laterally Vibrating Resonators
Lisha Shi
Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA

IFCS-EFTF SPC-24 Micromechanical Disk Array-Composite for Enhanced Frequency Stability Against Bias Voltage Fluctuations
Lingqi Wu
Dept. of EECS, University of California at Berkeley, Berkeley, CA, USA

GROUP 2

IFCS-EFTF SPC-5 Design of Ultra-Low-Power (2.5µW) 1GHz Low Phase Noise Pierce Oscillator with Nanowire NEMS Resonator
Hamidreza Zamani
Electrical Engineering, Case Western Reserve University, Cleveland, OH 44016, USA

IFCS-EFTF SPC-6 High spectral purity microwave and terahertz oscillator
Gwennaël Danion
Departement Optique et Photonique, IPR, Université Rennes1 CNRS, Rennes, France

IFCS-EFTF SPC-7 Inverse Relationship between OEO Q-factor and g-sensitivity
James P. Cahill
U.S. Army Research Laboratory, Adelphi, MD and University of Maryland: Baltimore County, Baltimore, MD

IFCS-EFTF SPC-20 120-µW GSM Phase Noise-Compliant Pierce Oscillator Referenced to a 61 MHz Wine-Glass Disk Resonator
Thura Lin Naing
University of California at Berkeley, Berkeley, California, USA

GROUP 3

IFCS-EFTF SPC-8 Resonantly enhanced Fe^{3+} spin-spin interaction in cryogenic sapphire
Jeremy Bourhill
EQuS Frequency and Quantum Control Metrology Laboratory, University of Western Australia, Perth, Western Australia

IFCS-EFTF SPC-9 Short term noise investigation on compact CPT clocks
Jean-Marie Danet
LNE SYRTE, Observatoire de Paris, Paris, France

IFCS-EFTF SPC-10 MiniAtom: realization of a compact atomic gravimeter
Jean Lautier
LNE-SYRTE, Observatoire de Paris, CNRS, UPMC, 61 boulevard de l'Observatoire, 75014 Paris, France

IFCS-EFTF SPC-11 Spatially Resolved Measurement of Relaxation Times in a Microfabricated Vapor Cell
Andrew Horsley
Department Physik, Universität Basel, Switzerland

GROUP 4

IFCS-EFTF SPC-1 An Integrated SAW Sensor with Direct Write Antenna
Mark Gallagher
Department of Electrical Engineering and Computer Science, University of Central Florida, Orlando, FL 32816

IFCS-EFTF SPC-2 Nanomechanical mass spectrometry for the characterization of high mass nanoparticles
Eric Sage
CEA, LETI, MINATEC campus, 17 rue des martyrs, 38054 Grenoble, Cedex 9, France

IFCS-EFTF SPC-3 Micro-electro-mechanical resonant tilt sensor with 250 nano-radian resolution
Xudong Zou
Nanoscience Centre, Department of Engineering, University of Cambridge, United Kingdom

IFCS-EFTF SPC-4 Mapping Thermomechanical Vibrations and Mode Shapes in High Frequency SiC-on-Insulator Nanoscale Resonators
Jaesung Lee
Electrical Engineering, Case Western Reserve University, Cleveland, OH 44106, USA

GROUP 5

IFCS-EFTF SPC-12 Towards a Large-Scale, Optical Timing Distribution System with Sub-Femtosecond Residual Timing Jitter
Michael Y. Peng
Department of EECS and Research Laboratory for Electronics, Massachusetts Institute of Technology, Cambridge, MA, USA

IFCS-EFTF SPC-13 Optical Frequency Transfer over a single-span 1840 km Fiber Link
Stefan Droste
Max-Planck-Institut für Quantenoptik, Hans-Kopfermann-Str. 1, 85748 Garching, Germany

IFCS-EFTF SPC-14 A Fiber Optic Gyroscope on multiplexed telecommunication network with a large enclosed area
Cecilia Clivati
Istituto Nazionale di Ricerca Metrologica and Politecnico di Torino, Torino, Italy

IFCS-EFTF SPC-15 Towards large scale metrological fibre network
Anthony Bercy, Laboratoire de Physique des Lasers, Université Paris 13, Sorbonne Paris Cité, CNRS, Villetaneuse, France

GROUP 6

IFCS-EFTF SPC-16 Microwaves generation from mode-locked Er-fiber lasers with sub-fs-level absolute timing jitter
Kwangyun Jung
Korea Advanced Institute of Science and Technology (KAIST), Daejeon 305–701, Korea

IFCS-EFTF SPC-17 Optical lattice clocks with 87Sr in a cryogenic environment
Ichiro Ushijima
Department of Applied Physics, Graduate School of Engineering, University of Tokyo, Japan

IFCS-EFTF SPC-18 First spectroscopy of the 1S0–P0 transition in Lamb-Dicke confined magnesium atoms
André Kulosa
Institut für Quantenoptik, Leibniz Universität Hannover, Hannover, Germany

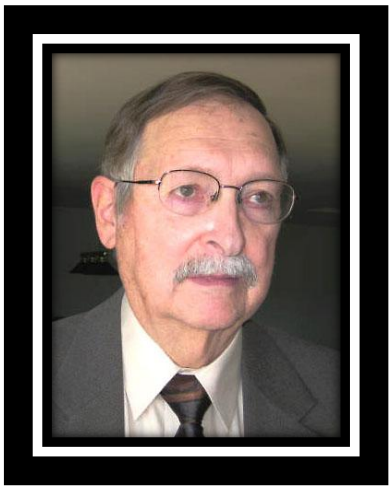
IFCS-EFTF SPC-19 Optical lattice clocks near the QPN limit: A tenfold improvement in optical clock stability
Travis Nicholson
JILA, University of Colorado, Boulder, CO, USA

Memorial Sessions

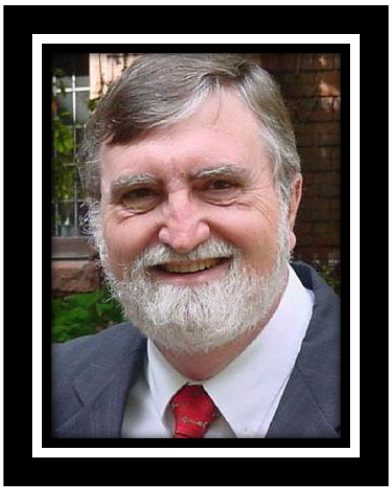
We were all saddened to hear of the passing of four of our dear friends and distinguished colleagues within the past year. We would like to invite you to attend a memorial session to witness and acknowledge their many contributions and achievements to the Ultrasonics, Ferroelectrics and Frequency Control Community.

Profesor Marija Kosec
Jozef Stefan Institute
Memorial Session ISAF2-D1
Tuesday, July 23

Dr. Les Bowen
Materials Systems Inc.
Memorial Session ISAF4-L3
Thursday, July 25



Dr. Ken Lakin
TFR Technologies
Memorial Session IUS4-F
Tuesday, July 23



Clinton Hartmann
RF SAW, Inc.
Memorial Session IUS4-I
Wednesday, July 24

Poster Presentation Guide

Posters will be on display in the Poster Area located in the **Forum Hall** and the adjacent Foyer on the 2nd Floor. Special area will be designated for **SPC**. **SPC** poster should be in display for four days. Judges will review the SPS poster on Monday only.

Dimensions including the frame (landscape): 100 × 150 cm (h × w)

Net dimensions of the poster area (landscape): 94 × 144 cm (h × w)

We recommend a maximum size of 94 cm in height and 140 cm in width. Pins for fastening the posters will be available in the Poster Area.

The material of the poster board is cork, so please do not use laminated paper for your posters. Your posters should be printed on paper, as light as possible.

Note: All posters should be posted in the morning before 9 am.

IUS, ISAF, and PFM posters should be removed on the same day after the end of the poster sessions. IFCS–EFTF posters will remain for two days during the duration of the sessions.

Oral Presentation Guide

PowerPoint Instructions: Please use the Microsoft PowerPoint 97–2007 or 2010* (*.ppt) or (*pptx) and save the PowerPoint presentation using PPT(X) format instead of PPS. Please check in 2 hours before your session the Windows compatibility of MacIntosh-based presentations.

Pictures/Videos: JPG images are the preferred file format for inserted images. However, GIF, TIF or BMP formats will be accepted as well. Images inserted into PowerPoint are embedded into the presentations. In case you have any in your presentation – please test the videos of presentation at the on-site PC several hours before your presentation. Generally, the MPEG–1 and AVI format should work with no difficulties.

Fonts: English version of Windows will be only fonts that are included in the basic installation of MS-Windows. Suggested fonts are: Arial, Times New Roman, Tahoma

Please save your presentation in one of the following disc or medium: CD-ROM (CD-R/RW), DVD-ROM (DVD±R/RW) and USB flash disc. Save all files associated with your presentation (PowerPoint file, movie / video files, etc.) to one folder / location.

Presentation duration: Please note the following time durations for oral presentations:

Plenary I, II, III: 50 min. (including question/discussions), Plenary IV: 30 min. Invited talks: 30 min. (including question/discussions), Contributed talks: 15 min. (including question/discussions).

Speaker Ready Room

Speakers´ Ready Room, **Room 2.1**, is located on the 2nd Floor of the Prague Congress Centre.

Please submit your presentation in person to the Speakers´ Ready Room at least 1 ½ hour before the beginning of session. For the morning sessions please submit power point presentations by the end of the prior day.

The Speaker ready hours for submitting presentation are:

Sunday-Thursday: 7:30–18:00

Condensed IUS Sessions Program

MONDAY	8:30–10:00	Opening, Achievement Award, IUS Fellows & Awards & IUS Plenary Talk					
	10:00–10:30	Refreshments					
	10:30–12:00	IUS1-A1(CH)	IUS1-A2(M4)	IUS1-A3(M5)	IUS2-A(NH)	IUS3-A(T1)	IUS4-A (T2)
	12:00–13:00	Lunch					
	13:00–14:00	Poster Session and Student Paper Competition (SPC)					
	14:00–15:30	IUS1-B1(CH)	IUS1-B2(M4)	IUS1-B3(M5)	IUS2-B(NH)	IUS5-B(T1)	IUS4-B(T2)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)					
	16:30–1800	IUS1-C1(CH)	IUS1-C2(M4)	IUS1-C3(M5)	IUS2-C(NH)	IUS5-C(T1)	IUS3-C(T2)
TUESDAY	8:30–10:00	Distinguished Lecturer Award, Ferroelectrics Fellows and Awards & ISAF Plenary Talk					
	10:00–10:30	Refreshments					
	10:30–12:00	IUS1-D1(CH)	IUS1-D2(M4)	IUS1-D3(M5)	IUS2-D(NH)	IUS4-D(T1)	IUS5-D(T2)
	12:00–13:00	Lunch					
	13:00–14:00	Poster Session and Student Paper Competition (SPC)					
	14:00–15:30	IUS1-E1(CH)	IUS1-E2(M4)	IUS1-E3(M5)	IUS2-E(NH)	IUS5-E(T1)	IUS5-E(T2)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)					
	16:30–1800	IUS1-F1(CH)	IUS1-F2(M4)	IUS1-F3(M5)	IUS2-F(NH)	IUS4-F(T1)	IUS3-F(T2)
WEDNESDAY	8:30–10:00	Distinguished Service Award, FC and EFTF Awards & IFCS–EFTF Plenary Talk					
	10:00–10:30	Refreshments					
	10:30–12:00	IUS1-G1(CH)	IUS1-G2(M4)	IUS1-G3(M5)	IUS2-G(NH)	IUS5-G(T1)	IUS4-G(T2)
	12:00–13:00	Lunch					
	13:00–14:00	Poster Session and Student Paper Competition (SPC)					
	14:00–15:30	IUS1-H1(CH)	IUS1-H2(M4)	IUS1-H3(M5)	IUS2-H(NH)	IUS5-H(T1)	IUS3-H(T2)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)					
	16:30–1800	IUS1-I1(CH)	IUS1-I2(M4)	IUS1-I3(M5)	IUS2-I	IUS4-1(T1)	IUS3-I(T2)
THURSDAY	8:30–10:00	IUS1-K1(CH)	IUS1-K2(M4)	IUS1-K3(M5)	IUS2-K(NH)	IUS5-K(T1)	IUS4-K(T2)
	10:00–10:30	Refreshments					
	10:30–12:00	IUS1-L1(CH)	IUS1-L2(M4)	IUS1-L3(M5)	IUS2-L(NH)	IUS3-L(T1)	IUS4-L(T2)
	12:00–13:00	Lunch					
	13:00–14:00	Poster Session and Student Paper Competition (SPC)					
	14:00–15:30	IUS1-M1(CH)	IUS1-M2(M4)	IUS1-M3(M5)	IUS5-M(NH)	IUS3-M(T1)	IUS4-M(T2)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)					
	16:30–1800	IFCS–EFTF, ISAF–PFM , and IUS Plenary Talks and Roundtable Discussions					

CH (Congress Hall), M4 (Meeting Hall 4), M5, NH (North Hall)
T1 (Terrace 1), T2 (Terrace 2)

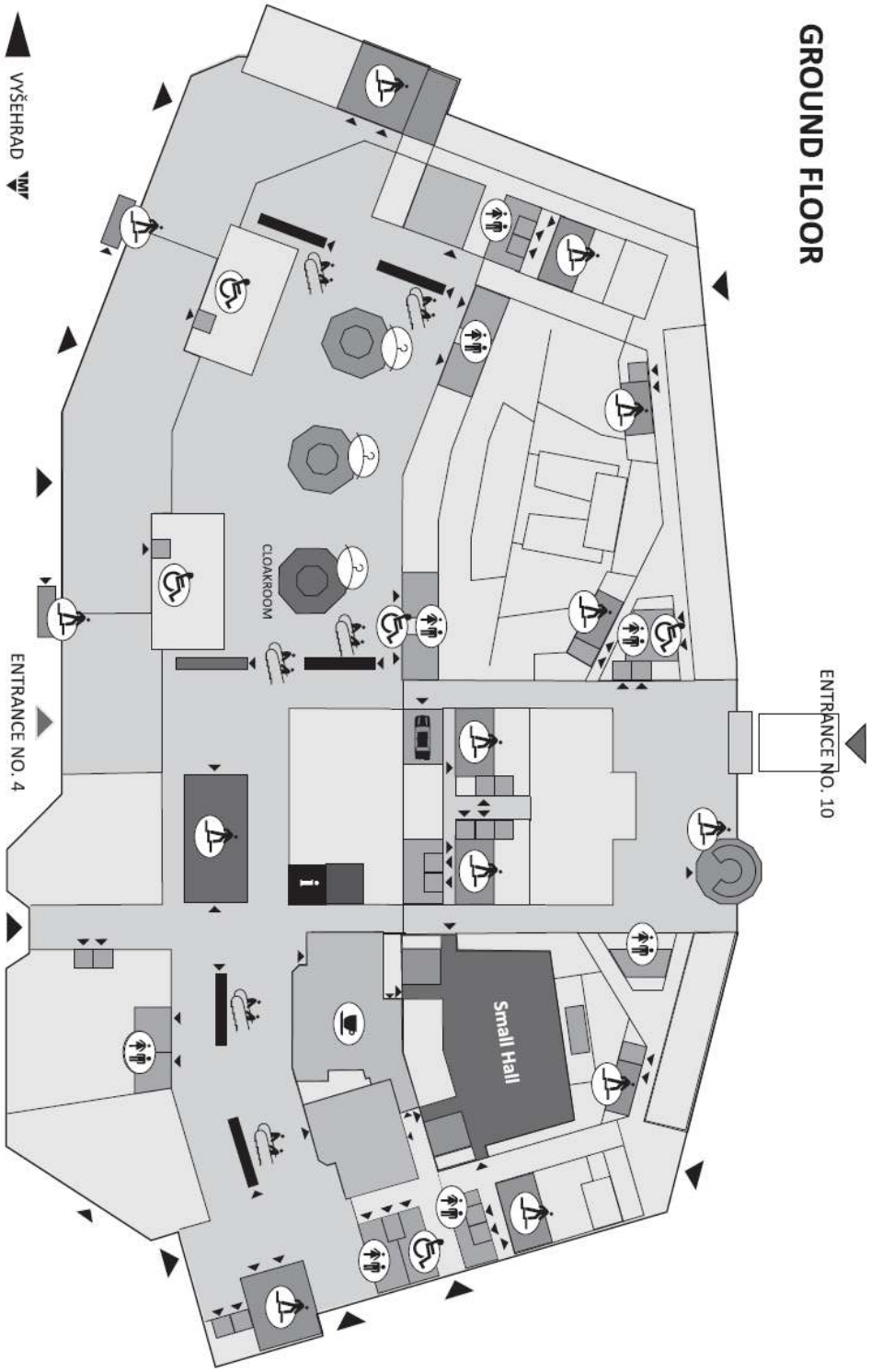
Condensed ISAF–PFM Sessions Program

MONDAY	8:30–10:00	Opening, Achievement Award, IUS Fellows & Awards, & Plenary Talk I		
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	ISAF3-A1 (Club E)	ISAF2-A2 (Club C+D)	PFM-A3 (Club B)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	ISAF3-B1 (Club E)	ISAF1-B2 (Club C+D)	PFM-B3 (Club B)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–1800	ISAF3-C1 (Club E)	ISAF1-C2 (Club C+D)	PFM-C3
TUESDAY	8:30–10:00	Distinguished Lecturer Award, Ferroelectrics Fellows & Awards, &Plenary Talk II		
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	ISAF2-D1 (Club E)	ISAF1-D2 (Club C+D)	ISAF1-D3 (Club B)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	ISAF3-E1 (Club E)	ISAF2-E2 (Club C+D)	PFM-E3 (Club B)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–18:00	ISAF3-F1 (Club E)	ISAF3-F2 (Club C+D)	ISAF2-F3 (Club B)
WEDNESDAY	8:30–10:00	Distinguished Service Award, FC and EFTF Awards, & Plenary Talk III		
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	ISAF2-G1 (Club E)	ISAF2-G2 (Club C+D)	ISAF3-G3 (Club B)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	ISAF2-H1 (Club E)	ISAF4-H2 (Club C+D)	ISAF4-H3 (Club B)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–1800	ISAF3-I1 (Club E)	ISAF4-I2 (Club C+D)	ISAF4-I3 (Club B)
THURSDAY	8:30–10:00	ISAF4-K1 (Club E)	ISAF1-K2	ISAF1-K3 (Club B)
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	ISAF4-L1 (Club E)	ISAF1-L2 (Club C+D)	ISAF4-L3 (Club B)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	ISAF1-M1 (Club E)	ISAF2-M2 (Club C+D)	ISAF4-M3 (Club B)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–18:00	IFCS–EFTF, ISAF–PFM , and IUS Plenary Talks IV and Roundtable Discussions		

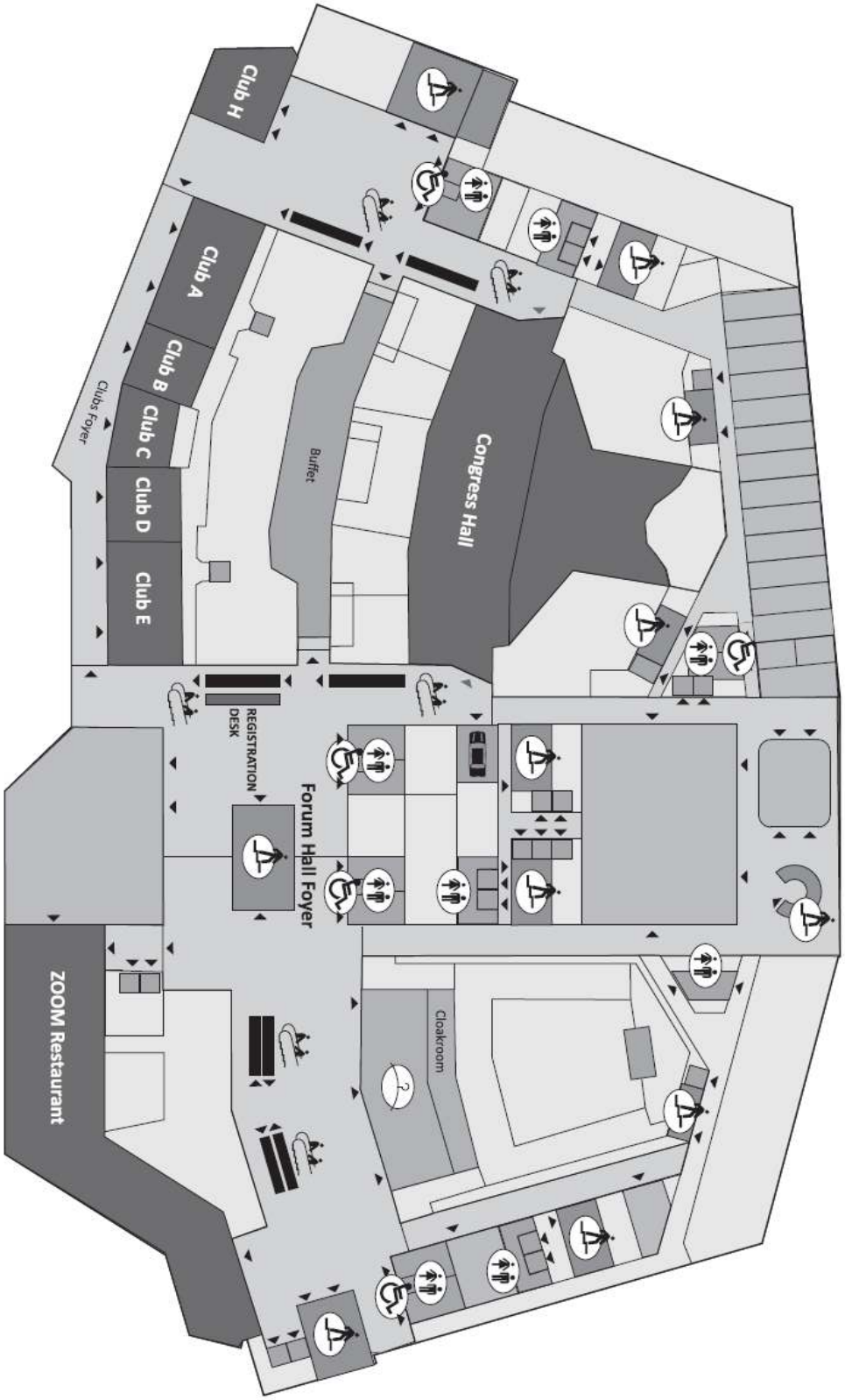
Condensed IFCS–EFTF Sessions Program

MONDAY	8:30–10:00	Opening, Achievement Award, IUS Fellows and Awards & Plenary Talk I		
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	IFCS–EFTF3-A1 (Small Hall)	IFCS–EFTF2-A2 (Club H)	IFCS–EFTF4-A3 (Club A)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	IFCS–EFTF5-B1 (Small Hall)	IFCS–EFTF6-B3 (Club H)	IFCS–EFTF1-B2 (Club A)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–18:00	IFCS–EFTF5-C1 (Small Hall)	IFCS–EFTF6-C3 (Club H)	IFCS–EFTF4-C2 (Club A)
TUESDAY	8:30–10:00	Distinguished Lecturer Award, Ferroelectrics Fellows and Awards & Plenary Talk II		
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	IFCS–EFTF5-D2 (Small Hall)	IFCS–EFTF3-D1 (Club H)	IFCS–EFTF2-D3 (Club A)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	IFCS–EFTF5-E2(Small Hall)	IFCS–EFTF6-E1 (Club H)	IFCS–EFTF1-E3 (Club A)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–18:00	IFCS–EFTF5-F2 (Small Hall)	IFCS–EFTF6F1 (Club H)	IFCS–EFTF4-F3 (Club A)
WEDNESDAY	8:30–10:00	Distinguished Service Award, FC and EFTF Awards & Plenary Talk III		
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	IFCS–EFTF3-G1(Small Hall)	IFCS–EFTF5-G (Club H)	IFCS–EFTF2-G3 (Club A)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	IFCS–EFTF3-H2 (Small Hall)	IFCS–EFTF6-H1 (Club H)	IFCS–EFTF5-H3 (Club A)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–18:00	IFCS–EFTF3-I1 (Small Hall)	IFCS–EFTF1-I3 (Club H)	IFCS–EFTF4-I2 (Club A)
THURSDAY	8:30–10:00	IFCS–EFTF5-K2 (Small Hall)	IFCS–EFTF3-K1 (Club H)	IFCS–EFTF2-K3 (Club A)
	10:00–10:30	REFRESHMENTS		
	10:30–12:00	IFCS–EFTF5-L2 (Small Hall)	IFCS–EFTF6-L1 (Club H)	IFCS–EFTF1-L3 (Club A)
	12:00–13:00	LUNCH		
	13:00–14:00	Poster Session and Student Paper Competition (SPC)		
	14:00–15:30	IFCS–EFTF6-M1 (Small Hall)	IFCS–EFTF2-M2 (Club H)	IFCS–EFTF4-M3 (Club A)
	15:30–16:30	Poster Session and Student Paper Competition (SPC)		
	16:30–18:00	IFCS–EFTF, ISAF–PFM , and IUS Plenary Talks IV and Roundtable Discussions		

Prague Congress Centre Floor Plan Maps



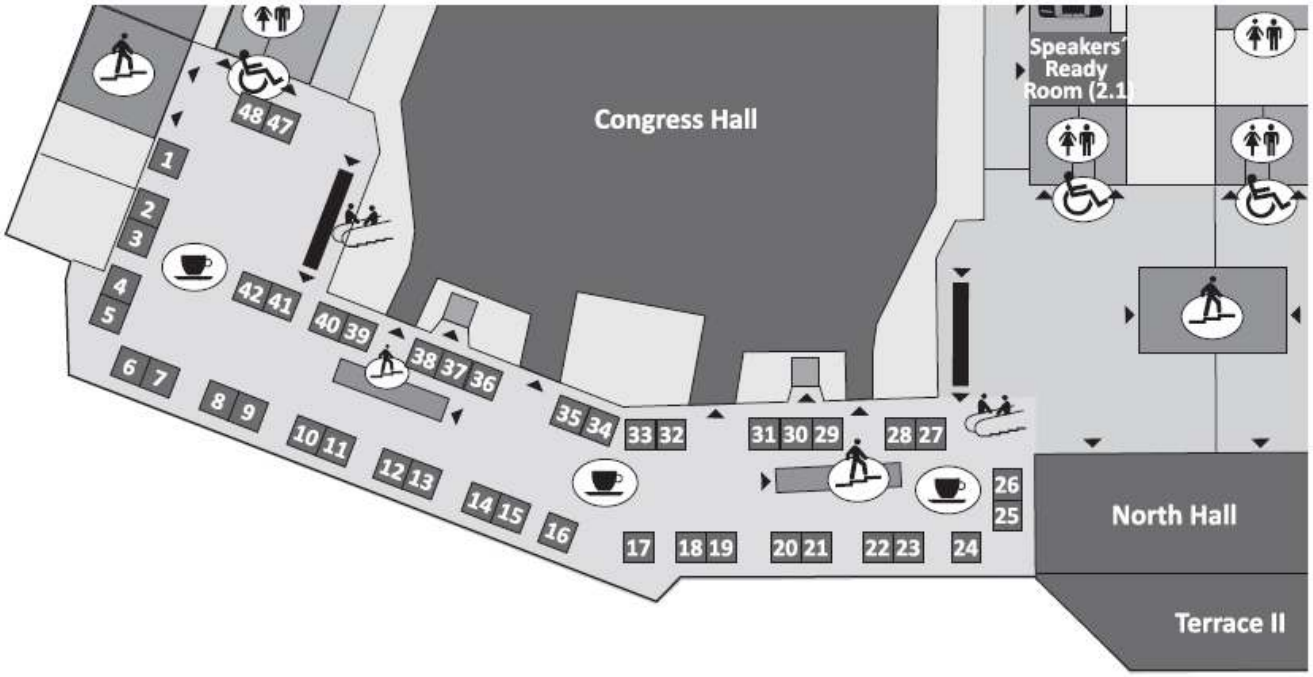
FIRST FLOOR


Club H
Club A
Club B
Club C
Club D
Club E
Clubs Foyer
Buffet
Congress Hall
REGISTRATION DESK
Forum Hall Foyer
ZOOM Restaurant
Cloakroom

SECOND FLOOR

*DIVIDED IN 2 ROOMS (130 PAX IN ONE PART, 60 PAX IN OTHER PART)

SECOND FLOOR



Monday, July 22 2013 - IUS

08:30 am – 10:00 am	**Plenary Session I: Opening, Achievement Award, IUS Fellows and Awards** **IUS Plenary talk: Session Chair; Stanislav Emelianov *University of Texas at Austin*** **Plenary speaker: Peter Burns, *University of Toronto, Canada*, Cancer and the Acoustic Bubble** **Congress Hall**					
10:00 am – 10:30 am	**Refreshments**					
10:30 am -12:00 pm	**Oral --- Monday, July 22 2013**					
	Session IUS1-A1. Tissue Engineering, neurostimulation and drug delivery *Chair:* **Christopher Hall**	***Session IUS1-A2. Clinical applications of elasticity imaging*** *Chair:* **Kathy Nightingale**	***Session IUS1-A3. Medical signal processing*** *Chair:* **Svetoslav Nikolov**	***Session IUS2-A. NDE - Phased Arrays*** *Chair:* **Robert Addison**	***Session IUS3-A. Ultrasonic motors 1*** *Chair:* **Joerg Wallaschek**	***Session IUS4-A. BAW & FBAR*** *Chair:* **Paul Bradley**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
10:30 am	***IUS1-A1-1 (Invited)* Engineering of Tissues with Ultrasound** **Denise Hocking**, Diane Dalecki	***IUS1-A2-1* Shear wave quantitative elasticity of the cervix during pregnancy** **Marie Muller**, Dora Ait-Belkacem, Mahdieh Hessabi, Jean-Luc Gennisson, Mathias Fink, Dominique Cabrol, Mickaël Tanter, Vassilis Tsatsaris	***IUS1-A3-1* Real time deconvolution of in-vivo ultrasound images** **Jørgen Arendt Jensen**	***IUS2-A-1* Ultrasonic array imaging of composite components** **Paul Wilcox**, Chuan Li, Damien Pain, Bruce Drinkwater	***IUS3-A-1* A nano emulsion generator using a microchannel and a bolt clamped type transducer** **Takefumi Kanda**, Yusuke Kiyama, Koichi Suzumori	***IUS4-A-1* Miniaturization of BAW Devices and the impact of Wafer Level Packaging Technology** **Gernot Fattinger**, Paul Stokes, Alexandre Volatier, Fabien Dumont, Robert Aigner
10:45 am		***IUS1-A2-2* Correlation between the shear wave speed in tendon and its elasticity properties** **Chia-Lun Yeh**, Po-Ling Kuo, Pai-Chi Li	***IUS1-A3-2* Range Side-lobe Inversion for Dual-Frequency Harmonic Imaging with Chirp Excitation** Che-Chou Shen, **Chun-Kai Peng**	***IUS2-A-2* A Design Methodology for 2D Sparse NDE Arrays using an Efficient Implementation of Refracted-Ray TFM** **Jerzy Dziewierz**, Anthony Gachagan	***IUS3-A-2* Ultrasonic motor using thrust bearing for friction drive with lubricant.** **Takaaki Ishii**, Hiroki Yamawaki, Kentaro Nakamura	***IUS4-A-2* Laterally Coupled BAW Filter using Two Acoustic Modes** **Johanna Meltaus**, Tuomas Pensala
11:00 am	***IUS1-A1-2* Localization of Ultrasound Induced In Vivo Neurostimulation in the Mouse Model** Randy King, **Julian Brown**, Kim Butts Pauly	***IUS1-A2-3* How the measurement depth influences the liver stiffness assessment using shear wave elasticity imaging (SWE)** **Congzhi Wang**, Jian Zheng, Jie Zeng, Zeping Huang, Rongqin Zheng, Hairong Zheng	***IUS1-A3-3* Extraction of Spectrally Overlapped Second Harmonic using the Fractional Fourier Transform** **Sevan Harput**, Muhammad Arif, James McLaughlan, Peter R. Smith, David M. J. Cowell, Steven Freear	***IUS2-A-3* Efficient computation of delay law for imaging structure with a complex surface** **Jie Zhang**, Bruce Drinkwater, Paul Wilcox	***IUS3-A-3* Piezo Impact Type MEMS Rotary Actuator and Application to Millimeter Size AI Controlled Robot** **Minami Takato**, Tatsuya Ogiwara, Shinpei Yamasaki, Ken Saito, Fumio Uchikoba	***IUS4-A-3* Temperature Compensated FBAR Duplexer for Band 13** **Qiang Zou**, Frank Bi, Genichi Tszuzuki, Paul Bradley, Rich Ruby

Monday, July 22 2013 - IUS

11:15 am	***IUS1-A1-3*** **Transcranial ultrasound neuromodulation of the contralateral visual field in awake monkey.** Youliana Younan,**Thomas Deffieux**, Nicolas Wattiez, Mickael Tanter, Pierre Pouget, Jean-Francois Aubry	***IUS1-A2-4*** **Assessing liver fat fraction by ARFI induced shear wave attenuation: a preliminary result** **Liexiang Fan**, John Benson, Lisa Clark, Jessica Lam, Abdullah Al Turki, Cesar Patino-Ochoa, Claude Sirlin	***IUS1-A3-4*** **Arbitrary Waveforms using a Tri-State Transmit Pulser** **John Flynn**, Peter Kaczkowski, Ken Linkhart, Ronald Daigle	***IUS2-A-4*** **Time Reversal Techniques for Multitarget Identification** Franck Assous, Marie Kray, **Frederic Nataf**	***IUS3-A-4*** **Evaluation of Piezoelectric Materials for Cryogenic Ultrasonic Motor** **Daisuke Yamaguchi**, Takefumi Kanda, Koichi Suzumori	***IUS4-A-4*** **3rd type of FBARs?** **Victor Plessky**, Sylvain Ballandras, Valery Grigorievsky, Ventsislav Yantchev
11:30 am	***IUS1-A1-4*** **Evaluation of a rabbit carotid artery model for dissolving clots using pulsed focused ultrasound and rtPA under MRI monitoring.** **Christakis Damianou**, Venediktos HadjiSavvas, Nicos Mylonas, Kleanthis Ioannides	***IUS1-A2-5*** **Material Characterization of In Vivo and Ex Vivo Porcine Brain using Shear Wave Elasticity** **Caryn Urbanczyk**, Mark Palmeri, Cameron Dale Bass	***IUS1-A3-5*** **Compressive Sensing Ultrasound Imaging using Overcomplete Dictionaries** **Oana Lorintiu**, Hervé Liebgott, Olivier Bernard, Denis Friboulet	***IUS2-A-5*** **Simultaneous measurement of thickness and sound velocities of each layer in multi-layered structures** **Sebastian Kümmritz**, Elfgard Kühnicke, Mario Wolf	***IUS3-A-5*** **Design and Analysis of a Nonrational B-Spline Profiled Horn for High Displacement Amplification** Hai-Dang Nguyen, **Dung-An Wang**	***IUS4-A-5*** **Dispersion of Lamb waves Propagating Under Periodic Metal Grating in AlN Plates** **Natalya Naumenko**
11:45 am	***IUS1-A1-5*** **Delivery of Zoledronate is Highly Improved by Low Intensity Continuous Ultrasound in a Breast Cancer Bone Metastases Model** **Sophie Tardoski**, Jacqueline Ngo, Philippe Clézardin, David Melodelima	***IUS1-A2-6*** **Identifying Malignant and Benign Breast Lesions Using Vibroelastography** **Hani Eskandari**, Septimiu Salcudean, Robert Rohling, Ali Baghani, Samuel Frew, Paula Gordon, Linda Warren	***IUS1-A3-6*** **Effects of heart rate on the pulse waveform measured at the left common carotid artery** **Yuka Komagata**, Tomohisa Mase, Yuki Ikenaga, Mami Matsukawa, Masashi Saito, Takaaki Asada, Yoshiaki Watanabe	***IUS2-A-6*** **Ultrasonic imaging of a turbine blade model using a 360° synthetic-aperture-focusing-technique and reverberation suppression** **Thomas Scharrer**, Andreas Koch, Stefan J. Rupitsch, Alexander Sutor, Helmut Ermert, Reinhard Lerch	***IUS3-A-6*** **Ultrasonic friction reduction applied to agricultural tillage** Wiebold Wurpts,**Jörg Wallaschek**	***IUS4-A-6*** **Full Vectorial measurement of 2nd harmonic of an FBAR Resonator** **Farhad Bayatpur**, Siamak Fouladi, Jong-hoon Lee, Dong Shim, David Feld

Monday, July 22 2013 - IUS

12:00 pm – 01:00 pm	Lunch Break					
01:00 pm - 2:00 pm	Poster Session and Student Paper Competition (SPC)					
02:00 pm -03:30 pm	Oral --- Monday, July 22 2013					
	Session IUS1-B1. Sonoporation and drug delivery *Chair:* **Paul Dayton**	***Session IUS1-B2. 3D and vector velocity imaging*** *Chair:* **Jørgen Arendt Jensen**	***Session IUS1-B3. Soft tissue characterization I*** *Chair:* **James G. Miller**	***Session IUS2-B. Compressed Sensing and Phased Arrays*** *Chair:* **Jafar Saniie**	***Session IUS5-B. MUT Modeling*** *Chair:* **Levent Degertekin**	***Session IUS4-B. Devices for High Temperature*** *Chair:* **Omar Elmazria**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
02:00 pm	***IUS1-B1-1*** **Basic studies on sonoporation with size- and position-controlled microbubbles adjacent to cells** **Nobuki Kudo**, Yuto Tanaka, Kazuaki Uchida	***IUS1-B2-1*** **3D Intra-cardiac flow estimation using speckle tracking: a feasibility study in synthetic ultrasound data** **Hang Gao**, Brecht Heyde, Jan D'hooge	***IUS1-B3-1*** **In Vivo Measurements of the Shear wave Velocity and Attenuation in the Pancreas** **Ivan Nenadic**, Matthew Urban, James Greenleaf	***IUS2-B-1 (Invited)*** **Compressed beamforming in ultrasound imaging** **Yonina Eldar**, Tanya Chernyakova	***IUS5-B-1*** **An Accurate Equivalent Circuit for the Clamped Circular Multiple-Electrode PMUT with Residual Stress** **Firas Sammoura**, Katherine Smyth, Sang-Gook Kim	***IUS4-B-1*** **Wireless temperature monitoring in an electrolytic galvanizing plant** **Rene Fachberger**, Christoph Werner
02:15 pm	***IUS1-B1-2*** **Liposome Release from an Oscillating Microbubble** **Ying Luan**, Guillaume Lajoinie, Heleen Dewitte, Ine Lentacker, Tom van Rooij, Hendrik Vos, Antonius van der Steen, Michel Versluis, Nico de Jong	***IUS1-B2-2*** **3-D Velocity Tensor Imaging in Two Orthogonal Planes** **Michael Johannes Pihl**, Jørgen Arendt Jensen	***IUS1-B3-2*** **Detecting Cervical Softening with Shear Wave Speed Estimation** **Lindsey C. Carlson**, Helen Feltovich, Mark Palmeri, Alejandro Munoz Del Rio, Michael H. Wang, Timothy J. Hall		***IUS5-B-2*** **An advanced equivalent circuit for a piezoelectric micro-machined ultrasonic transducer and its lumped parameter measurement** **Yub Je**, Haksue Lee, Kyounghun Been, Hongmin Ahn, Wonkyu Moon	***IUS4-B-2*** **Capacitively Coupled IDT for High Temperature SAW Devices** Scott Moulzolf, Roby Behanan, Robert Lad, **Mauricio Pereira da Cunha**
02:30 pm	***IUS1-B1-3*** **Ultrastructural sonoporation bioeffects: Comparative study on two human cancer cell lines** **Aya Zeghimi**, Jean-Michel Escoffre, Ayache Bouakaz	***IUS1-B2-3*** **Full 3D vascular atlas of the rat brain via Ultrafast Doppler Tomography** **Charlie Demene**, Ana Ricobaraza, Anastasia Vorontsova, Bruno-Felix Osmanski, Sophie Pezet, Zsolt Lenkei, Mickael Tanter	***IUS1-B3-3*** **Spatial Variability of Shear Wave Speed Estimation in Non-Pregnant Cervix** **Lindsey C. Carlson**, Helen Feltovich, Mark Palmeri, Alejandro Munoz Del Rio, Michael H. Wang, Timothy J. Hall	***IUS2-B-2*** **Compressive sensing of full field images in Lamb waves inspections** **Luca De Marchi**, Giampaolo Cera, Guido Masetti	***IUS5-B-3*** **Fully Parametric Large Signal Collapsed Mode Model for CMUTs** **Elif Aydogdu**, Kagan Oguz, Hayrettin Koymen, Abdullah Atalar	***IUS4-B-3*** **Thermoelastic effects in Pt IDTs. Impact on the behavior of high-temperature LGS-based SAW devices** **Thierry Aubert**, Pascal Nicolay, Frédéric Sarry

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02:45 pm	***IUS1-B1-4*** **Comparing nanodroplets and microbubbles for enhancing ultrasound-mediated gene transfection** Robert Paproski, **Roger Zemp**	***IUS1-B2-4*** **In vitro Validation of an Accuracy Feedback Method for Ultrasonic Vector Flow Mapping in 3D Velocity Field** **Tomohiko Tanaka**, Rei Asami, Ken-ichi Kawabata, Kunio Hashiba, Takashi Okada	***IUS1-B3-4*** **Ultrasonic attenuation imaging in a rodent thyroid cancer model** **Omar Zenteno**, Billy Ridgway, Sandhya Sarwate, Michael Oelze, Roberto Lavarello	***IUS2-B-3*** **Compressive Sensing with Frequency Warped Compensation for Damage Detection in Composite Plate** **Alessandro Perelli**, Sevan Harput, Luca De Marchi, Steven Freear	***IUS5-B-4*** **Finite element analysis of mechanically amplified CMUTs** **Alexander Unger**, Maik Hoffmann, Min-Chieh Ho, Kwan-Kyu Park, Butrus T. Khuri-Yakub, Mario Kupnik	***IUS4-B-4*** **Surface Transverse wave (STW) resonators on langasite** **Victor Plessky**, Ventsislav Yantchev, Valery Grigorievsky, William Daniau, Sylvain Ballandras, Weibiao Wang
03:00 pm	***IUS1-B1-5 (Invited)*** **Precision drug delivery with ultrasound and microbubbles: mechanisms, applications and (progress to) translation to clinics** **Ayache Bouakaz**	***IUS1-B2-5*** **In vivo out-of-plane Doppler imaging based on ultrafast plane wave imaging** **Bruno-Félix Osmanski**, Gabriel Montaldo, Mathias Fink, Mickael Tanter	***IUS1-B3-5*** **In Vivo Human Assessment of Bladder Elasticity and Compliance using Ultrasound Bladder Vibrometry (UBV) and Comparison with Urodynamic Studies** **Ivan Nenadic**, Mohammad Mehrmohammadi, Matthew Urban, Azra Alizad, James Greenleaf, Douglas Husmann, Lance Mynderse, Mostafa Fatemi	***IUS2-B-4*** **Bulk wave FSAT for 2D optic fiber endoscopic echography** **Nicola Testoni**, Luca De Marchi, Nicolò Speciale, Massimo Ruzzene	***IUS5-B-5*** **Circuit Theory Based Analysis of CMUT Arrays with Very Large Number of Cells** **Huseyin Kagan Oguz**, Abdullah Atalar, Hayrettin Köymen	***IUS4-B-5*** **Fabrication of a 4.4 GHz oscillator using SAW excited on epitaxial AlN grown on a Sapphire substrate** **Roland Salut**, Arnaud Claudel, Gilles Martin, William Daniau, Didier Pique, Sylvain Ballandras
03:15 pm		***IUS1-B2-6*** **High-Frame-Rate Color-Encoded Speckle Imaging for Visually Intuitive Rendering of Complex Flow Dynamics** **Billy Y. S. Yiu**, Alfred C. H. Yu	***IUS1-B3-6*** **A new approach to ultrasonic detection of malignant breast tumors** Nishant Uniyal, Hani Eskandari, Purang Abolmaesumi, Samira Sojoudi, Linda Warren, Paula Gordon, Robert N. Rohling, **Septimiu E. Salcudean**, Mehdi Moradi	***IUS2-B-5*** **Guided Wave Enhancement Phased Array Beamforming Scheme using Recursive Feedback** **David M. Charutz**, Sevan Harput, David M. J. Cowell, Etai Mor, Steven Freear	***IUS5-B-6*** **Model Based Drive Signal Optimization of CMUTs in Non-Collapse Operation and its Experimental Validation** **Sarp Satir**, Toby Xu, F. Levent Degertekin	***IUS4-B-6*** **An optimized set of temperature coefficients for LGS** **Pascal Nicola**, Thierry Aubert

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03:30 pm – 04:30 pm	Poster Session and Student Paper Competition (SPC) and Refreshments					
04:30 pm -06:00 pm	**Oral --- Monday, July 22 2013**					
	Session IUS1-C1. Cardiac strain imaging *Chair:* **Elisa Konofagou**	***Session IUS1-C2. High intensity focused ultrasound and cavitation*** *Chair:* **Greg Clement**	***Session IUS1-C3. Photoacoustic imaging and contrast agents*** *Chair:* **Georg Schmitz**	***Session IUS2-C. Guided Waves*** *Chair:* **Walter Arnold**	***Session IUS5-C. Acoustic Manipulation and Force*** *Chair:* **Sandy Cochran**	***Session IUS3-C. Optical and electromagnetic interactions 1*** *Chair:* **John Larson**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
04:30 pm	***IUS1-C1-1*** **4-D echocardiography assessment of local myocardial strain using 3-D speckle tracking combined with shape tracking** Colin Compas, **Emily Wong**, Xiaojie Huang, Smita Sampath, Ben Lin, Prasanta Pal, Xenophon Papademetris, Karl Thiele, Donald Dione, Lawrence Staib, Albert Sinusas, Matthew O'Donnell, James Duncan	***IUS1-C2-1*** **Feasibility of HIFU cardiac therapy and monitoring using shear-wave imaging with a dual mode intracardiac catheter** **Wojciech Kwiecinski**, Jean Provost, Mathieu Legros, An Nguyen, Rémi Dufait, Mathias Fink, Mickaël Tanter, Mathieu Pernot	***IUS1-C3-1*** **Molecular imaging of glioblastoma cells using functionalized nanorods and a high resolution optoacoustic microscope** **Wolfgang Bost**, Marc Fournelle	***IUS2-C-1*** **Guided Wave Attenuation in Cylindrical Bars Surrounded by Soil** **Masanari Shoji**, Takashi Sawada	***IUS5-C-1 (Invited)*** **Ultrasonic Manipulation Systems: From Simple Tweezing to Sonic Screwdrivers and Beyond** **Christine Demore**, Peter Glynne-Jones, Yongqiang Qiu, Zhengyi Yang, Han Wang, Bruce Drinkwater, Martyn Hill, Mike MacDonald, Gabriel Spalding, Sandy Cochran	***IUS3-C-1*** **Surface acoustic waves control with external magnetic field in $TbCo_2$/FeCo films** **Ivan Lisenkov**, Alexey Klimov, Vladimir Onoprienko, Vladimir Preobrajenski, Philippe Pernod, Sergey Nikitov
04:45 pm	***IUS1-C1-2*** **Acute and Chronic myocardial infarct differentiation using Atrial Kick Induced Strain (AKIS) imaging** **Brett Byram**, Lauren Oliveri, Patrick Wolf, Gregg Trahey	***IUS1-C2-2*** **Clinical evaluation of a toroidal HIFU transducer designed for the treatment of liver metastases during an open procedure** **David Melodelima**, Jeremy Vincenot, Aurelien Dupre, Yao Chen, Michel Rivoire, Jean-Yves Chapelon	***IUS1-C3-2*** **Transrectal photoacoustic-ultrasonic imaging enhancement through interstitial irradiation and targeted nanoparticles** Trevor Mitcham, Tatiana Marques, Dev Chatterjee, Sunil Krishnan, Thomas Pugh, **Richard Bouchard**	***IUS2-C-2*** **AN ULTRASOUND METHOD FOR PIEZOCERAMIC FIBERS CHARACTERISATION** **Robert Dittmer**, Thomas Rödig, Andreas Schönecker		***IUS3-C-2*** **Theoretical and Experimental Study of Multilayer Piezo-magnetic Structure Based Surface Acoustic Wave Devices for High Sensitivity Magnetic Sensor** **Huan Zhou**, Abdelkrim Talbi, Noura Gasmi, Nicolas Tiercelin, Olivier Bou Matar
05:00 pm	***IUS1-C1-3*** **Performance Analysis of Two-Dimensional Cardiac Strain Estimation Using Different Beamforming and Temporal Resolution in Vivo** **Ethan Bunting**, Jean Provost, Elisa Konofagou	***IUS1-C2-3*** **Preliminary ex vivo experiments of linear cardiac ablation using an ultrasound-guided transesophageal HIFU device** **Elodie Constanciel**, William Apoutou N'Djin, Francis Bessière, Mathieu Pioche, Philippe Chevalier, Jean-Yves Chapelon, Cyril Lafon	***IUS1-C3-3*** **Nonlinear ultrasound/photoacoustic contrast enhancement by ultrasound probing of laser pulse induced bubbles with gold nanospheres coated emulsion beads** **Chen-wei Wei**, Kjersta Larson-Smith, Ivan Pelivanov, Camilo Perez, Jinjun Xia, Danilo Pozzo, Thomas Matula, Matthew O'Donnell	***IUS2-C-3*** **Space Tether Produced to Strength Specification** **Anni Toppila**, Henri Seppänen, Timo Rauhala, Göran Maconi, Sergiy Kiprich, Jukka Ukkonen, Martin Simonsson, Pekka Janhunen, Edward Hæggström	***IUS5-C-2*** **Ultrasonic tactile sensor array for tissue elasticity measuremen** **Kyungrim Kim**, Xiaoning Jiang	***IUS3-C-3*** **Acoustically Driven Magnetic Excitations in BAW Resonators with Magnetic Layers** **Natalia Polzikova**, Sergey Alekseev, Iosif Kotelyanskii, Alexander Raevskiy

05:15 pm	***IUS1-C1-4*** **Three-Dimensional Fusion of Shear Wave Imaging and Electro-Anatomical Mapping for Intracardiac Radiofrequency Ablation Monitoring** **Peter Hollender**, Stephen Rosenzweig, Stephanie Eyerly, Patrick Wolf, Gregg Trahey	***IUS1-C2-4*** **Ultrasound Thermography In Vivo: A new model for calculation of temperature change in the presence of temperature heterogeneity** **Mahdi Bayat**, John R. Ballard, Emad S. Ebbini	***IUS1-C3-4*** **Emulsion-aided laser clot disruption using a portable low-cost high-repetition rate fiber laser with simultaneous photoacoustic imaging** **Jinjun Xia**, Chen-wei Wei, Camilo Perez, Michael Lombardo, Kjersta Larson-Smith, Ivan Pelivanov, Danilo Pozzo, Thomas Matula, Matthew O'Donnell	***IUS2-C-4*** **Influence of flow speed on guided waves in a liquid filled pipe** Bixing Zhang, **Hanyin Cui**, Jianzhong Shen, Jon Trevelyan	***IUS5-C-3*** **Design basis of large scale acoustic separators** **Hans Cappon**, Karel Keesman	***IUS3-C-4*** **Shear and longitudinal GHz elastic properties in GaN single crystals determined by Brillouin scattering method** **Hayato Ichihashi**, Takeshi Sugimoto, Takahiko Yanagitani, Shinji Takayanagi, Mami Matsukawa
05:30 pm	***IUS1-C1-5*** **Intracardiac Myocardial Elastography at high temporal resolution in canines and humans in vivo** **Julien Grondin**, Elaine Wan, Alok Gambhir, Hasan Garan, Elisa Konofagou	***IUS1-C2-5*** **Non-invasive toroidal HIFU transducer for increasing the coagulated volume in depth** **David Melodelima**, Jeremy Vincenot, Anthony Kocot, Jean-Yves Chapelon	***IUS1-C3-5*** **Numerical modeling of photoacoustic generation by metallic nanoparticles : source extension and thermoelastic based non-linearities** **Amaury Prost**, Emmanuel Bossy	***IUS2-C-5*** **Ultrasonic density measurement of polymer melts in extreme conditions** **Regina Rekuvienë**, Rymantas Kaþys, Reimondas Ðliteris, Elaine C. Brown, Adrian L. Kelly, Ben R. Whiteside	***IUS5-C-4*** **Zebrafish egg manipulation using ultrasound microbeam transducer** **Kwok Ho Lam**, Fan Zheng, Ying Li, Qifa Zhou, Kirk K. Shung	***IUS3-C-5*** **Temperature dependence of X-ray diffraction on the LGS crystal modulated by SAW** **Dmitrii Irzhak**, Luc Ortega, Dmitry Roshchupkin
05:45 pm	***IUS1-C1-6*** **A Comparison of Intracardiac ARFI and SWI for Imaging Radiofrequency Ablation Lesions** **Peter Hollender**, Lily Kuo, Virginia Chen, Stephanie Eyerly, Gregg Trahey	***IUS1-C2-6*** **Cavitation with confocal transducers** **R. Andrew Fowler**, Jean-Louis Mestas, Adrien Poizat, Françoise Chavrier, Cyril Lafon	***IUS1-C3-6*** **Vaporization, Photoacoustic and Acoustic characterization of PLGA/PFH particles loaded with optically absorbing materials** Yang Sun, Chengcheng Niu, Yanjie Wang, Eric Strohm, Zhigang Wang, Haitao Ran, Yuanyi Zheng, **Michael Kolios**	***IUS2-C-6*** **Detection of a Subsurface Flaw with the Total Internal Reflection Ultrasonic Sensor** **Alexander Yurchenko**, Vadim Danilov, Yuriy Pilgun, Eugene Smirnov	***IUS5-C-5*** **Design of Stepped Exponential Horns for Acoustic Energy Transfer Systems** **Maurice Roes**, Marcel Hendrix, Jorge Duarte	***IUS3-C-6*** **Noise Tolerance in Wavelength-Selective Switching of Optical DQPSK Pulse Train by Collinear Acoustooptic Devices** **Nobuo Goto**, Yasumitsu Miyazaki

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Session IUS1-PA1. Contrast agents and imaging *Chair:* **Steven Freear**	***IUS1-PA1-8*** **Tumor vascular structure and its influence on model selection for VEGFR2-targeted microbubble studies** **Thomas Payen**, Alexandre Dizeux, Delphine Le Guillou-Buffello, Eva Compérat, Olivier Lucidarme, S. Lori Bridal	***IUS1-PA2-7*** **Effects of Phase Aberration on Acoustic Radiation Force-Based Shear Wave Generation** **Carolina Amador**, Sara Aristizabal, Matthew Urban, James Greenleaf	***IUS1-PA3-2*** **Simulating Ultrasonic Pulse Echo Registration including Multiple scattering, Attenuation and Nonlinearity** **Libertario Demi**, Erwin J. Alles	***IUS1-PA4-3*** **Development of In Vivo Measurement System for Temperature Rise in Animal Tissue under Exposure to Ultrasound with Acoustic Radiation Force** **Naotaka Nitta**, Nobuki Kudo, Tomoo Kamakura, Yasunao Ishiguro, Hideki Sasanuma, Nobuyuki Taniguchi, Iwaki Akiyama
IUS1-PA1-1 **Correction of nonlinear imaging artefacts in contrast enhanced ultrasound** **Yesna Yildiz**, Robert J. Eckersley, Meng-Xing Tang	***IUS1-PA1-9*** **Vibration modes in a pendulums ring: analogy with gas microbubbles surface modes** **Jennifer CHALINE**, Victor SANCHEZ MORCILLO, Noé JIMENEZ, Ayache BOUAKAZ, Serge DOS SANTOS	***IUS1-PA2-8*** **Observation of Shear Wave Dispersion Based on Optical Detection** **Yi Cheng**, Sinan Li, Robert Eckersley, Daniel Elson, Mengxing Tang	***IUS1-PA3-3*** **Acoustic Beam Simulator with Aberration, Power Law Absorption, and Reverberation Effects** **Thomas Szabo**, Pedro Nariyoshi, Robert McGough	***IUS1-PA4-4*** **Ultrasound-enhanced Delivery of Antibiotics and Anti-inflammatory Drugs into the Eye** **Marjan Nabili**, Hetal Patel, Sankaranarayana Mahesh, Ji Liu, Craig Geist, Vesna Zderic
IUS1-PA1-2 **Characterising Microbubble Surface Charge using a Microfluidics Approach** **Fairuzeta Ja'afar**, Mengxing Tang, Valeria Garbin, John Seddon	***Session IUS1-PA2. Elastography methods*** *Chair:* **Hiroshi Kanai**	***IUS1-PA2-9*** **Exact Viscoelastic Green's Functions of the Voigt-model-based Navier's Equation** **Sheng-Wen Huang**, Hua Xie, Jean-Luc Robert, Shiwei Zhou, Vijay Shamdasani	***IUS1-PA3-4*** **Simulation based evaluation of different speed of sound reconstruction methods for Ultrasound Computer Tomography** **Neslihan Ozmen-Eryilmaz**, Robin Dapp, Michael Zapf, Hartmut Gemmeke, Nicole Ruiter, Koen W.A. van Dongen	***IUS1-PA4-5*** **A Nano-Mechanical Study on the Influence of Ultrasound Exposure on Cellular Elasticity** **Michael Conneely**, David McGloin, Pamela Robertson, W.H. Irwin McLean, Paul A. Campbell
IUS1-PA1-3 **Acoustical response of DSPC versus DPPC lipid-coated microbubbles** **Tom van Rooij**, Ying Luan, Antonius F.W. van der Steen, Nico de Jong, Klazina Kooiman	***IUS1-PA2-1*** **Effect of aperture size on plane-wave ultrasound strain estimation** **Narasimha Reddy Vaka**, Hendrik H.G. Hansen, Anne E.C.M Saris, Chris L de Korte	***IUS1-PA2-10*** **Two-dimensional simulations of displacement accumulation incorporating shear strain** **Matthew Bayer**, Timothy Hall	***IUS1-PA3-5*** **Evaluation of phase aberration correction for a 3D USCT** **Ernst Kretzek**, Robin Dapp, Michael Zapf, Matthias Birk, Nicole Ruiter	***IUS1-PA4-6*** **Ultrasound as a Repulsive Cue for Neuronal Development: Real-Time Morphological Observations In-Vitro** **Yaxin Hu**, Wenjing Zhong, Jennifer M. F. Wan, Alfred C. H. Yu

IUS1-PA1-4 **Nonlinear dynamics of polymer shell ultrasound contrast agents at 8-32 MHz ultrasonic excitations** **Amin Jafari Sojahrood**, Raffi Karshafian, Eleanor Stride, Michael C. Kolios	***US1-PA2-2*** **The effects of surrounding media on the shear wave propagation in plates as related to the dispersion velocity** **Luiz Henrique A. Vasconcelos**, Ivan Nenadic, Bo Qiang, Matthew Urban, James Greenleaf	***IUS1-PA2-11*** **Neighborhood Weighted Phase Root Seeking Algorithm with Temporal Stretching for Displacement and Strain Estimation** Golam Kibria, Sharmin Ara, Mohammad Haque, Soo Lee,**Kamrul Hasan**	***IUS1-PA3-6*** **Ultrasound Tomography for Breast Imaging: Initial results using the SoftVue scanner** **Nebojsa Duric**, Peter Littrup, Olivier Roy, Steve Schmidt, Cuiping Li, Roman Janer, Xiaoyang Chen, David Kunz, Lisa Bey-Knight, Jefferey Goll, William Greenway	***Session IUS1-PA5. Soft tissue characterization I*** *Chair:* **Michael Oelze**
IUS1-PA1-5 **Rician inverse Gaussian model of scattering in ultrasound contrast media** **Vladimir Slavik**, Radim Kolar, Radovan Jirik, Vratislav Harabis	***IUS1-PA2-4*** **Coded Excitation Scheme for Acoustic Radiation Push Pulse Compression** **Kengo Kondo**, Makoto Yamakawa, Tsuyoshi Shiina	***IUS1-PA2-12*** **Acoustic radiation force creep-recovery: theory and finite element modeling** **Carolina Amador**, Bo Qiang, Matthew Urban, Shigao Chen, James Greenleaf	***Session IUS1-PA4. Bioeffects and metrology*** *Chair:* **Jonathan Mamou**	***IUS1-PA5-1*** **Acoustic characteristics of fatty and fibrotic liver measured by an 80-MHz and 250 MHz scanning acoustic microscopy** **Tadashi Yamaguchi**, Kenta Inoue, Hitoshi Maruyama, Jonathan Mamou, Kazuto Kobayashi, Yoshufumi Saijo
IUS1-PA1-6 **Effects of microbubble interaction on occurrence of subharmonics** **Shoma Kanazawa**, Akira Tsuruoka, Toshihiko Sugiura	***IUS1-PA2-5*** **Axial displacement tracking in transient elastography using neighboring local minima maxima in Radio Frequency (RF) signals** **Yassine MOFID**, Melouka Elkateb, Caroline Chartier, Cecile Bastard, Stephane Audiere, Veronique Miette, Frederic Ossant	***Session IUS1-PA3. Ultrasound simulation and computed tomography*** *Chair:* **Nebojsa Duric**	***IUS1-PA4-1*** **Measuring the photo detector frequency response for hydrophone calibration using laser interferometry** **Youichi Matsuda**, Tsuneo Kikuchi	***IUS1-PA5-2*** **RSNA/QIBA: Shear wave speed as a biomarker for liver fibrosis staging** **Timothy Hall**, Andy Milkowski, Brian Garra, Paul Carson, Mark Palmeri, Kathy Nightingale, Other Authors
IUS1-PA1-7 **Enhanced ambient pressure sensitivity of the subharmonic signal from ultrasound contrast microbubbles** **fei li**, feiyan cai, long meng, Qiaofeng Jin, Hairong Zheng, Deyu Li	***IUS1-PA2-6*** **How shear wave celerity depends on tissue stress tensor ?** **Frederic PATAT**, Fournier Joseph, Plag Camille, Defontaine Marielle, Calle Samuel, Remenieras Jean-Pierre	***IUS1-PA3-1*** **A GPU-based implementation of the spatial impulse response method for fast calculation of linear sound fields and pulse-echo responses of array transducers** **Tom Bruyneel**, Alejandra Ortega, Ling Tong, Jan D'hooge	***IUS1-PA4-2*** **Novel thermochromic-doped polymers for rapid visualization of ultrasonic intensity distributions** **Bajram Zeqiri**, Ian Butterworth, Pierre Gelat, Malcolm Norris	***IUS1-PA5-3*** **Influence of heterogeneities on ultrasound attenuation for liver steatosis evaluation (CAP™): relevance of a liver guidance tool** **Magali Sasso**, Stéphane Audière, Laurent Sandrin, Véronique Miette

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IUS1-PA5-4 **Quantitative evaluation method of liver fibrosis using multi-Rayleigh model with three echo envelope components** **Tatsuya Higuchi**, Shinnosuke Hirata, Tadashi Yamaguchi, Hiroyuki Hachiya	***Session IUS2-PA1. NDE Signal Processing*** *Chair:* **Ramazan Demirli**	***IUS2-PA2-2*** **Transducer Excitation with Switched-Mode Encoded Signals for Harmonic and Amplitude Control Verified Using the Leach Model** **Robert H. Ingham**, Robert James, Peter R. Smith, David M.J. Cowell, Steven Freear	***IUS3-PA1-3*** **Analysis of a Linear Piezoelectric Motor Driven by a Single-Phase Signal** **Shine-Tzong Ho**, Yan-Jhang Shin	***IUS3-PA2-5*** **Anisotropic Diffraction of Acoustic Waves in Crystals Used in Acousto-Optic Dispersive Delay Lines** **Natalya Naumenko**, Sergey Chizhikov, Vladimir Molchanov, Konstantin Yushkov
IUS1-PA5-5 **Effect of Scanning Direction on the Statistical Parameters of Ultrasonic Signals Backscattered from the Annular Pulley and Tendon** **Yi-Hsun Lin**, Chih-Chung Huang, Tai-Hua Yang, Shyh-Hau Wang, Fong-Chin Su	***IUS2-PA1-1*** **Performance evaluation of 3D compression for Ultrasonic nondestructive testing applications** Pramod Govindan, **Jafar Saniie**	***IUS2-PA2-3*** **A vibrating stylus as two-dimensional PC input device** **Riccardo Carotenuto**, Giousè Caliano, Nicola Lamberti, Alessandro Stuart Savoia, Antonio Iula	***IUS3-PA1-4*** **A Hybrid Ultrasonic Squeeze Film and Magnetic Levitation Actuator for Machine Guideways** Sebastian Mojrzisch, Igor Ille, **Jörg Wallaschek**, Berend Denkena	***IUS3-PA2-6*** **Modeling of Non-Coherent O-CDMA Data Transmission System with Walsh Coding Functions Using Multi-Frequency Acousto-Optic Matched Filtering** **Valery Proklov**, Oleg Byshevski-Konopko, Valery Grigorievsky
IUS1-PA5-6 **Modeling volume power spectra for collections of spheres in finite containers** Adam C. Luchies, **Michael L. Oelze**	***IUS2-PA1-2*** **Image Compilation in multi-transducer Ultrasonic System** Aryaz Baradarani, **Fedar Seviaryn**, Roman Maev	***IUS2-PA2-4*** **Reciprocity-based method for magnitude and phase calibration of hydrophone sensitivity** **Everande Oliveira**, Rodrigo Costa-Felix, Joao Machado	***IUS3-PA1-5*** **Ultrasonic Dewatering in Minute Holes** **Masaya Takasaki**, Takanori Endo, Takeshi Mizuno	***IUS3-PA2-7*** **Acoustic-optical Properties of Silicon Crystals in Visible Range of Spectrum** **Farkhad Akhmedzhanov**
IUS1-PA5-7 **Time domain analysis of causal and noncausal fractional wave equations** Xiaofeng Zhao, **Robert McGough**	***IUS2-PA1-3*** **3D Locating system for Augmented Reality glasses using coded ultrasounds** **Riccardo Carotenuto**	***IUS2-PA2-5*** **High Temperature Immersion Ultrasonic Probes** **Takuo Inoue**, Kazuki Iwata, Makiko Kobayashi	***Session IUS3-PA2. Optical and electromagnetic interactions 2*** *Chair:* **Vincent Laude**	***IUS3-PA2-8*** **Impact of the deposition process on the elastic properties of thin films measured by ultrafast acoustics** **Arnaud Devos**, Arnaud Le Louarn, Patrick Emery

IUS1-PA5-8 **Estimation of quantitative ultrasound parameters derived from backscatter coefficients using plane wave compounding – A comparative simulation study** **Roberto Lavarello**	***IUS2-PA1-4*** **A New Sonar Localization Strategy Using Receiver Beam Characteristics** **Francesco Guarato**, James Windmill, Anthony Gachagan	***IUS2-PA2-6*** **Dual-layer ultrasonic transducer used for touch sensing** Adit Decharat, Sanat Wagle,**Frank Melandsø**	***IUS3-PA2-1*** **Magnetoelastic properties of some uranium intermetallic antiferromagnets as studied by high-field ultrasound measurements** **S. Zherlitsyn**, A.V. Andreev, S. Yasin, Y. Skourski, A.A. Zvyagin, J. Wosnitza	***Session IUS5-PA. Ultrasonic Arrays*** *Chair:* **Scott Smith**
IUS1-PA5-9 **Characterization of scatterers concentration in cataract lens using Nakagami distribution by ultrasounds** **Miguel Caixinha**, Danilo Jesus, Elena Velte, Mário Santos, Jaime Santos	***IUS2-PA1-5*** **A Novel use of Signal Processing tools for fault detection in IC Engines** **Sreedhar Puliyakote**, Dr. Krishnan Balasubramaniam	***Session IUS3-PA1. Ultrasonic motors 2*** *Chair:* **Takefumi KANDA**	***IUS3-PA2-2*** **The Influence of the External Magnetic Field on Acoustic Properties of Magnetic Elastomers** Iren Kuznetsova, Boris Zaitsev, Alexander Shikhabudinov, **Irina Borodina**, Elena Kramarenko, Vladimir Kolesov, Gennadiy Stepanov	***IUS5-PA-1*** **Development of Miniaturized Linear Arrays for Integration with Interventional Tools** Robert Ssekitoleko, **Christine Demore**, Jack Hoyd-Gigg Ng, Marc Desmulliez, Sandy Cochran
IUS1-PA5-10 **Performance of an Adaptive Multitaper Method for the Reduction of Coherent Noise in the Spectral Analysis of Ultrasound Backscattered Echoes** **Ivan Rosado-Mendez**, Timothy Hall, James Zagzebski	***Session IUS2-PA2. NDE Transducers*** *Chair:* **Kentaro Nakamura**	***IUS3-PA1-1*** **An ultrasonic motor using transmission line with oblique slits driven by a Langevin transducer.** **Takaaki Ishii**, Masayuki Takada, Yuki Kubota, Hidetoshi Ohuchi	**IUS3-PA2-3 Impedance Spectroscopy of Nonlinear-Optical Crystals in Process of Laser Frequency Conversion** Oleg Ryabushkin, DaniilMyasnikov, **Aleksey Konyashkin**, ValentinTyrtyshnyy, Oleg Vershinin, Alexander Surin, Dmitriy Nikitin	***IUS5-PA-2*** **Design, Fabrication and characterization of a bi-frequency co-linear array (7.5MHz/15MHz)** **Xiaoning Jiang**, Jianguo Ma, Xuecang Geng
IUS1-PA5-11 **A Multitaper, Generalized Spectrum Technique for Detection of Periodic Structures in Tissue: Comparison with conventional methods.** **Ivan Rosado-Mendez**, Lindsey Carlson, Timothy Hall, James Zagzebski	***IUS2-PA2-1*** **Parametric evaluation of NDE pulsed ultrasonic responses including relevant realistic inductive and non-linear piezoelectric & electronic phenomena** Abelardo Ruiz, **Antonio Ramos**, J. Luis San Emeterio, Halim Azbaid	***IUS3-PA1-2*** **High-speed Microscopic Observation of the Elliptical Motion in a Ultrasonic Motor** **Tomoaki Mashimo**, Midori Takaoka, Kazuhiko Terashima	***IUS3-PA2-4*** **new telluride alloys for efficient acousto-optic devices of near, middle and far ir-region** **Liudmila Kulakova**	***IUS5-PA-3*** **Variable-size elements in 2D sparse arrays for 3D medical ultrasound** **Bakary Diarra**, Marc Robini, Hervé Liebgott, Christian Cachard, Piero Tortoli

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Monday, July 22 2013			Forum Hall
IUS5-PA-4 **Micromachined High-Frequency ZnO Ultrasonic Linear Arrays** **Jinying Zhang**, Weijiang Xu, Gang Han, Julien Carlier, Xinming Ji, Shuming Chen	***IUS-SPC-5*** **A 32x32 Integrated CMUT Array for Volumetric Ultrasound Imaging** **Anshuman Bhuyan**, Chienliu Chang, Jung Woo Choe, Byung Chul Lee, Amin Nikoozadeh, Omer Oralkan, Yagi Takayuki, Butrus Khuri-Yakub	***IUS-SPC-13*** **ScAlN Lamb Wave Resonator in GHz Range Released by XeF_2 Etching** **Akira Konno**, Shota Sumisaka, Akihiko Teshigahara, Kazuhiko Kano, Ken-ya Hashimoto, Hideki Hirano, Masayoshi Esashi, Shuji Tanaka		
IUS5-PA-5 **Fabrication and Performance of a 10 MHz Annular Array Based on PMN-PT single crystal for Medical Imaging** **Jue PENG**, Zhenhua HU, Hu TANG, Xin CHEN, Tianfu WANG, Siping CHEN	***IUS-SPC-6*** **Towards Backscattering Tensor Imaging (BTI): Analysis of the Spatial coherence of ultrasonic speckle in anisotropic soft tissues** **Clément Papadacci**, Mathieu Pernot, Mickael Tanter, Mathias Fink	***IUS-SPC-14*** **Advanced 2D Periodic Array and Full Transversal Mode Suppression** **Jiman Yoon**, Markus Mayer, Thomas Ebner, Karl Wagner, Achim Wixforth		
IUS5-PA-7 **Reverse-Row-Column Method for Increasing Focusing Volume of 2D CMUT Array** **Albert Chen**, Lawrence Wong, John Yeow	***IUS-SPC-7*** **Compensation of the Combined Effects of Absorption and Dispersion in Plane Wave Pulse-Echo Ultrasound Imaging Using Sparse Recovery** **Martin Schiffner**, Georg Schmitz	***IUS-SPC-15*** **Impact of Surface Periodic Grating on FBAR Structures to Spurious Transverse Resonances** **Jiansong Liu**, Tatsuya Omori, Changjun Ahn, Ken-ya Hashimoto		
Session IUS-SPC. IUS Student Poster Competition *Chair:* **Stanislav Emelianov**	***IUS-SPC-8*** **Ultrasound-induced bioorthogonal chemistry in-situ using composite droplets** **Marine Bézagu**, Claudia Errico, Victor Chaulot-Talmon, Stellios Arseniyadis, Olivier Couture, Mickael Tanter, Janine Cossy, Patrick Tabeling	***IUS-SPC-16*** **Multifrequency intravascular ultrasound for assessment of atherosclerotic plaque vulnerability** **Chelsea Munding**, Emmanuel Cherin, Jianhua Yin, Hyunggyun Lee, David Goertz, Brian Courtney, Stuart Foster		

IUS-SPC-1 **Ultrasonic imaging of tightly closed cracks by linear phased array with global preheating and local cooling and the estimation of crack closure stress** **Koji Takahashi**, Yoshikazu Ohara, Kazushi Yamanaka	***IUS-SPC-9*** **New Quantification Methods for Carotid Intraplaque Neovascularization in Contrast Enhanced Ultrasound (CEUS)** **Zeynettin Akkus**, Gonzalo Vegas Sanchez-Ferrero, Guillaume Renaud, Stijn C.H. van den Oord, Arend F.L. Schinkel, Nico de Jong, Antonius F.W. van der Steen	***IUS-SPC-17*** **Performance of a Miniaturized 64-Element High-Frequency Phased Array based on PMN-PT** **Andre Bezanson**, Robert Adamson, Jeremy Brown		
IUS-SPC-2 **Performance evaluation of reconfigurable FPGA based embedded ARM processor for ultrasonic imaging** **Spenser Gilliland**, Pramod Govindan, Thomas Gonnot, Jafar Saniie	***IUS-SPC-10*** **Leaky Wedge Acoustic Waves in Single-Crystal Silicon** Alexey Lomonosov,**Pavel Pupyrev**, Peter Hess, Andreas Mayer	***IUS-SPC-18*** **Real-time Co-registered IVUS-OCT Catheter for Atherosclerotic Plaque Identification and Stent Deployment Verification** **Teng Ma**, Jiawen Li, Dilbahar Mohar, Joseph Jing, Matthew Brenner, Pranav M. Patel, K. Kirk Shung, Zhongping Chen, Qifa Zhou		
IUS-SPC-3 **Laser ultrasonic velocity measurement for Phase transformation investigation in Ti alloy (Ti-6% Al-4% V)** **Saeid Zamiri**, Bernhard Reitinger, Jürgen Roither, Siegfried Bauer, Peter Burgholzer	***IUS-SPC-11*** **Polarity control of c-axis oriented ZnO films and application to polarity-inverted ZnO multilayer resonators** **Ryosuke Hashimoto**, Takahiko Yanagitani, Ryo Ikoma, Shinji Takayanagi, Masashi Suzuki, Hiroyuki Odagawa, Mami Matsukawa			
IUS-SPC-4 **Optoacoustic Elastography for Tissue Biomechanical Property Characterization Using a Ring Transducer** **Teng Ma**, Rui Li, Wenjuan Qi, Qifa Zhou, Zhongping Chen, K. Kirk Shung	***IUS-SPC-12*** **Acoustic metamaterial: experimental investigation of the acoustic field scattered by isolated active resonators** **Remi Marchal**, Bernard Bonello, Jinfeng Zhao, Olga Boyko			

08:30 am – 10:00 am			**Plenary Session II: UFFC Distinguished Lecturer Award, Ferroelectrics Awards, Ferroelectrics and New Fellows** **ISAF-PFM Plenary talk: Session Chair; Susan Trolier-McKinstry, *the Pennsylvania State University*** **Plenary speaker: Kenji Uchino, *ONR Global-Asia & the Pennsylvania State University, USA,* Piezoelectric Actuator Renaissance** **Congress Hall**			
10:00 am – 10:30 am			**Refreshments**			
10:30 am -12:00 pm			**Oral --- Tuesday, July 23 2013**			
	Session IUS1-D1. Abdominal elasticity imaging *Chair:* **James Greenleaf**	***Session IUS1-D2. Contrast agents and imaging*** *Chair:* **Nico de Jong**	***Session IUS1-D3. Novel imaging systems*** *Chair:* **Herve Liebgott**	***Session IUS2-D. Structural Health Monitoring*** *Chair:* **Paul David Wilcox**	***Session IUS4-D. Saw Design*** *Chair:* **Marc Solal**	***Session IUS5-D. Miniature Devices and IVUS*** *Chair:* **Jian Yuan**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
10:30 am	***IUS1-D1-1*** **Corticomedullary Strain Ratio: A Quantitative Marker in Assessment of Renal Allograft Cortical Fibrosis** **Jing Gao**, Robert Min, James Hamilton, William Weitzel, Jonathan Rubin	***IUS1-D2-1*** **Genetically Encoded Gas Nanostructures as Ultrasonic Molecular Reporters** **Mikhail Shapiro**, Patrick Goodwill, Arkosnato Neogy, David Schaffer, Steven Conolly	***IUS1-D3-1*** **A 32x32 Integrated CMUT Array for Volumetric Ultrasound Imaging** **Anshuman Bhuyan**, Chienliu Chang, Jung Woo Choe, Byung Chul Lee, Amin Nikoozadeh, Omer Oralkan, Yagi Takayuki, Butrus Khuri-Yakub	***IUS2-D-1 (Invited)*** **Uncertainty Quantification in Ultrasonic Guided Wave Interrogation Using Detection Theory** **Michael Todd**, Eric Flynn, Greg Jarmer, Colin Haynes	***IUS4-D-1*** **Advanced 2D Periodic Array and Full Transversal Mode Suppression** **Jiman Yoon**, Markus Mayer, Thomas Ebner, Karl Wagner, Achim Wixforth	***IUS5-D-1*** **Multifrequency intravascular ultrasound for assessment of atherosclerotic plaque vulnerability** **Chelsea Munding**, Emmanuel Cherin, Jianhua Yin, Hyunggyun Lee, David Goertz, Brian Courtney, Stuart Foster
10:45 am	***IUS1-D1-2*** **In Vivo Measurement of Renal Transplant Viscoelasticity** **Matthew Urban**, Carolina Amador, James Greenleaf	***IUS1-D2-2 In vivo*** **imaging of gas vesicles, genetically encoded nano contrast agents** **Melissa Yin**, Emmanuel Cherin, F. Stuart Foster, Mikhail Shapiro	***IUS1-D3-2*** **A Low Cost Open Source High Frame-Rate High-Frequency Imaging System** **Jeremy Brown**, Jeff Leadbetter, Michael Leung, Andre Bezanson, Rob Adamson		***IUS4-D-2*** **Development of High Linearity Duplexers with Low Passive Intermodulation Component** **Akira Moriya**, Makoto Inoue, Osamu Kawachi	***IUS5-D-2*** **Miniaturized Forward Looking High-Frequency Phased Array Transducer for Intravascular Imaging Applications** **Ruimin Chen**, Nestor Cabrera Munoz, Hyung Ham Kim, Hsiusheng Hsu, Fan Zheng, Changgeng Liu, Jay Williams, Qifa Zhou, K. Kirk Shung

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11:00 am	***IUS1-D1-3*** **Shear wave dispersion for fibrosis, steatosis and activity staging. Clinical results on 102 chronic liver disease patients** **Thomas Deffieux**, Jean-Luc Gennisson, Laurence Bousquet, Dalila Amroun, Marion Corouge, Vincent Mallet, Philippe Sogni, Mathias Fink, Stanislas Pol, Mickael Tanter	***IUS1-D2-3*** **Ultrasound super-localization (USL) with 3D ultrafast imaging** **Yann Desailly**, Olivier Couture, Mathias Fink, Mickael Tanter	***IUS1-D3-3*** **MR-compatible ultrasound research platform for motion tracking to reduce motion induced artifacts in MR imaging** **Steffen Tretbar**, Holger Hewener, Daniel Speicher, Tobias Bartscherer, Jürgen Jenne, André Bongers, Matthias Günther	***IUS2-D-2*** **Computation of Modal Group Delay in the Decomposition of Ultrasonic Waveguide Signals Using the Synchrosqueezed Wavelet Transform** **Fabian Bause**, Boqiang Huang, Angela Kunoth, Bernd Henning	***IUS4-D-3*** **Wide Band Taper SAW Filters with Improved Shape Factor and Phase Response** **Rodolfo Chang**, Svetlana Malocha	***IUS5-D-3*** **Performance of a Miniaturized 64-Element High-Frequency Phased Array based on PMN-PT** **Andre Bezanson**, Robert Adamson, Jeremy Brown
11:15 am	***IUS1-D1-4*** **A Technique for Quantifying Shear Wave Velocity and Attenuation in Tissues and In Vivo Application** **Ivan Nenadic**, Matthew Urban, Bo Qiang, Shigao Chen, James Greenleaf	***IUS1-D2-4*** **Counting bubbles and contrast-to-noise amplification with ultrafast contrast imaging** **Olivier Couture**, Yann Desailly, Mathias Fink, Mickael Tanter	***IUS1-D3-4*** **Sonic Millip3De with Dynamic Receive Focusing and Apodization Optimization** **Richard Sampson**, Ming Yang, Siyuan Wei, Chaitali Chakrabarti, Thomas F. Wenisch	***IUS2-D-3*** **Decomposition of Multipath Lamb Waves with Sparse Wavenumber Analysis for Structural Health Monitoring** **Joel B. Harley**, José M.F. Moura	***IUS4-D-4*** **Experimental and Theoretical Results of New Unidirectional Interdigital Transducers Using Floating Electrodes** Kazuhiko Yamanouchi, **Hiroyuki Odagawa**, Ikuya Iwai	***IUS5-D-4*** **Small Aperture, Dual Frequency Ultrasound Transducers for Intravascular Contrast Imaging** **Jianguo Ma**, Karl Martin, Paul Dayton, Xiaoning Jiang
11:30 am	***IUS1-D1-5 (Invited)*** **3D Elasticity Imaging with Acoustic Radiation Force** **Kathryn Nightingale**, Michael Wang, Stephen Rosenzweig, Ned Rouze, Samantha Lipman, Kirema Garcia-Reyes, Thomas Polascik, Mark Palmeri	***IUS1-D2-5*** **Effect of excitation envelope on volumetric subharmonic vibrations of single contrast agent microbubbles using an acoustical camera** **Verya Daeichin**, Guillaume Renaud, Johan G. Bosch, Antonius F.W. van der Steen, Nico de Jong	***IUS1-D3-5*** **Lossless Compression with Parallel Decoder for Improving Performance of GPU-based Beamformer** **U-Wai Lok**, Gang-Wei Fan, Pai-Chi Li	***IUS2-D-4*** **Flexible Ultrasonic Transducers Using Piezoelectric Fiber Composites with Antisymmetric Interdigital Electrodes** **Ching-Chung Yin**, Yu-Chien Wu, Shih-Ming Hsu	***IUS4-D-5*** **SAW resonators using electrostrictive effect** **Sebastien Alzuaga**, William Daniau, Thomas Baron, Gilles Martin, Roland Salut, Sylvain Ballandras, Emmanuel Defay	***IUS5-D-5*** **Acoustic Radiation Force Impulse Imaging (ARFI) on an IVUS Circular Array** Vivek Patel, **Jeremy Dahl**, David Bradway, Joshua Doherty, Stephen Smith
11:45 am		***IUS1-D2-6*** **Quantitative myocardial perfusion analysis with contrast-enhanced ultrasound bolus tracking – preliminary animal results** **Martin Mezl**, Radovan Jirik, Knut Matre, Geir Olav Dahle, Ketil Grong, Pirjo-Riitta Salminen, Mai Tone Lonnebakken, Torfinn Taxt	***IUS1-D3-6*** **A Fast Parallelized Eigen-Based Clutter Filter Framework for Ultrasound Color Flow Imaging** **Adrian J. Y. Chee**, Billy Y. S. Yiu, Alfred C. H. Yu	***IUS2-D-5*** **Detection of crack tips in a plate by a pulse laser combined transducer under Lamb wave excitation** **Kazuki Nakata**, Nobuaki Hirose, Takaharu Kitamura, Mami Matsukawa	***IUS4-D-6*** **Design of RF IDTs for Efficient Coupling to Wavelength-Scale Structures in Thin Piezoelectric Films** **Matt Eichenfield**, Roy H. Olsson III	***IUS5-D-6*** **Real-time Co-registered IVUS-OCT Catheter for Atherosclerotic Plaque Identification and Stent Deployment Verification** **Teng Ma**, Jiawen Li, Dilbahar Mohar, Joseph Jing, Matthew Brenner, Pranav M. Patel, K. Kirk Shung, Zhongping Chen, Qifa Zhou

Tuesday, July 23 2013 - IUS

12:00 pm – 01:00 pm	Lunch Break					
01:00 pm - 2:00 pm	Poster Session and Student Paper Competition (SPC)					
02:00 pm -03:30 pm	Oral --- Tuesday, July 23 2013					
	Session IUS1-E1. Carotid elastography *Chair:* **Chris de Korte**	***Session IUS1-E2. Beamforming I*** *Chair:* **Pai-Chi Li**	***Session IUS1-E3. Medical imaging*** *Chair:* **Matthew O'Donnell**	***Session IUS2-E. Laser Ultrasonics*** *Chair:* **Lawrence W. Kessler**	***Session IUS3-E. Phononic crystals and metamaterials*** *Chair:* **Tsung-Tsong Wu**	***Session IUS5-E. High Frequency Devices and Applications*** *Chair:* **Qifa Zhou**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
02:00 pm	***IUS1-E1-1*** **4D Strain Imaging of Carotid Arteries Using Echo-CT** **Renate Boekhoven**, Marcel Rutten, Marc Van Sambeek, Frans Van De Vosse, Richard Lopata	***IUS1-E2-1*** **Compensation of the Combined Effects of Absorption and Dispersion in Plane Wave Pulse-Echo Ultrasound Imaging Using Sparse Recovery** **Martin Schiffner**, Georg Schmitz	***IUS1-E3-1*** **Spatial coherence and its relationship to human tissue: an analytical description of imaging methods** **Gianmarco Pinton**, Gregg Trahey, Jeremy Dahl	***IUS2-E-1*** **Laser ultrasonic velocity measurement for Phase transformation investigation in Ti alloy (Ti-6% Al-4% V)** **Saeid Zamiri**, Bernhard Reitinger, Jürgen Roither, Siegfried Bauer, Peter Burgholzer	***IUS3-E-1 (Invited)*** **Approximate model and experiments on Seismic metamaterials** **Sebastien Guenneau**, Stefan Enoch, Emmanuel Javelaud, Stéphane Brulé	***IUS5-E-1*** **A Dual-layer Micromachined PMN-PT 1-3 Composite Transducer for Broadband Ultrasound Imaging** **Sibo Li**, Wenbin Huang, Xiaohua Jian, Yaoyao Cui, Xiaoning Jiang
02:15 pm	***IUS1-E1-2*** **Noninvasive compound carotid elastography: in vivo validation** **Hendrik Hansen**, Gert Jan de Borst, Michiel Bots, Gerard Pasterkamp, Chris de Korte	***IUS1-E2-2*** **The Separate Recovery of Spatial Fluctuations in Compressibility and Mass Density in Plane Wave Pulse-Echo Ultrasound Imaging** **Martin Schiffner**, Georg Schmitz	***IUS1-E3-2*** **In vivo performance evaluation of short-lag spatial coherence (SLSC) and harmonic spatial coherence (HSC) imaging in fetal ultrasound** **Vaibhav Kakkad**, Jeremy Dahl, Sarah Ellestad, Gregg Trahey	***IUS2-E-2*** **Direct measurement of SAW dispersion relations in the k-&[omega] domains; numerical and experimental studies** **Istvan A Veres**, Clemens Grünsteidl, Jürgen Roither, Peter Burgholzer, Todd W. Murray, Thomas Berer		***IUS5-E-2*** **Lead-free high-frequency linear-array transducer (30 MHz) for in vivo skin imaging** Erwan Filoux, **Claire Bantignies**, Rémi Rouffaud, Mai Pham Thi, Jean-marc Grégoire, Franck Levassort
02:30 pm	***IUS1-E1-3*** **Carotid wall elastograhy is superior to intima-media thickness measurements to assess mid-term vascular dysfunction secondary to intrauterine growth restriction (IUGR)** **Roch Maurice**, Laurence Vaujois, Najat Chibab, Anika Maurice, Nagib Dahdah, Anne-Monique Nuyt, Jean-Luc Bigras	***IUS1-E2-3*** **High Frame Rate Ultrasonic Imaging of the Heart by Placing Virtual Point Sources in Front of Array** **Hideyuki Hasegawa**, Yuji Sato, Hiroshi Kanai	***IUS1-E3-3*** **Ultrafast Acoustoelectric Tomography** **Jean Provost**, Wojciech Kwiecinski, Mathias Fink, Mickael Tanter, Mathieu Pernot	***IUS2-E-3*** **Laser ultrasound detection using a photorefractive balanced detector** **Peter Burgholzer**, Saeid Zamiri, Jürgen Roither, Hubert Grün, Bernhard Reitinger	***IUS3-E-2*** **Investigation of slow evanescent waves at the surface of immersed micromachined membrane arrays** **Shane Lani**, M. Wasequr Rashid, Karim Sabra, F. Levent Degertekin	***IUS5-E-3*** **Micromachined High-Frequency Ultrasound 2-Dimensional Array Transducer** **Changgeng Liu**, Fan Zheng, Ruimin Chen, Frank Djuth, Qifa Zhou, Kirk Shung

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02:45 pm	***IUS1-E1-4*** **A Feasibility Study of Ultrasound B-Mode and Strain Imaging for Risk Assessment of Carotid Atherosclerotic Plaques Validated by Magnetic Resonance Imaging** Xiaochang Pan, Lingyun Huang, Shengzhen Tao, Manwei Huang, Xihai Zhao, Le He, Chun Yuan, **Jianwen Luo**, Jing Bai	***IUS1-E2-4*** **Real time 3D US-tagging combined with 3D phase-based motion estimation.** **Sebastien Salles**, Hervé Liebgott, Damien Garcia, Didier Vray	***IUS1-E3-4*** **Magnetomotive ultrasound imaging of rat lymph nodes *in situ*: assessment of imaging parameters** **Maria Evertsson**, Magnus Cinthio, Sarah Fredriksson, Pontus Kjellman, Rene in 't Zandt, Fredrik Olsson, Hans W Persson, Tomas Jansson	***IUS2-E-4*** **Basic Study of Water Distribution Measurement in Soil Using SLDV -The soil water measurement during plant cultivation-** **Tsuneyoshi Sugimoto**, Yutaka Nakagawa, Takashi Shirakawa, Motoaki Sano, Motoyoshi Ohaba, Sakae Shibusawa	***IUS3-E-3*** **Acoustic metamaterial: experimental investigation of the acoustic field scattered by isolated active resonators** **Remi Marchal**, Bernard Bonello, Jinfeng Zhao, Olga Boyko	***IUS5-E-4*** **Piezoelectric Single Crystal Composite for High Frequency Ultrasound Application** **Jian Tian**, Kevin Meneou, Brandon Stone, Pengdi Han
03:00 pm	***IUS1-E1-5*** **Noninvasive arterial pulse pressure mapping using Pulse Wave Ultrasound Manometry (PWUM) in hypertensive aortas and stenotic carotid arteries in vivo** **Ronny Li**, Isaac Jourard, Joyce Salomon, Prathyush Narayanan, Lancelot Walker, Cesare Russo, Marco Di Tullio, Elisa Konofagou	***IUS1-E2-5*** **Towards Establishing a Design Rule for Aperture Parameters in Minimum-Variance Beamforming** **Junying Chen**, Hayden K.-H. So, Alfred C. H. Yu	***IUS1-E3-5*** **The Westervelt equation for nonlinear propagation: Numerical simulations and experimental validation of ultrasonic fields produced by array transducers** Alexander Doinikov, Anthony Novell, Pierre Calmon, **Ayache Bouakaz**	***IUS2-E-5*** **Detecting defects in adhesion between a metal hemisphere and a polymer base** **Ari Salmi**, Pasi Karppinen, Heikki Nieminen, Adam Hacking, Edward Haeggström	***IUS3-E-4*** **Focusing capability of a phononic crystal based on a hollow metallic structure** **Anne-Christine Hladky-Hennion**, Charles Croënne, Jérôme Vasseur, Lionel Haumesser, Andrew N. Norris	***IUS5-E-5 (Invited)*** **High-Frequency Ultrasonic Transducer for Photoacoustic Application** **Qifa Zhou**, Ruimin Chen, Teng Ma, Changgeng Liu, Joon-Mo Yang, Dakang Yao, Lihong V. Wang, K. Kirk Shung
03:15 pm	***IUS1-E1-6*** **Assessment of longitudinal strain in the Carotid artery wall using ultrasound-based Speckle tracking-validation in a sheep model** **Matilda Larsson**, Peter Verbrugghe, Marija Smoljkic, Brecht Heyde, Nele Famaey, Paul Herijgers, Jan D'hooge	***IUS1-E2-6*** **S-Sequence Encoded Synthetic Aperture B-Scan Ultrasound Imaging** **Roger Zemp**	***IUS1-E3-6*** **Nonlinear Reconstruction of Bulk and Shear Modulus Variations in Isotropic Solids Using the Kazmarcz Method** **Leili Salehi**, Georg Schmitz	***IUS2-E-6*** **Surface Acoustic Wave Velocity Mapping of Tissue Sample Using a Scanning Laser Doppler Velocimeter** **Yukako Kato**, Yuji Wada, Yosuke Mizuno, Kentaro Nakamura	***IUS3-E-5*** **Acoustic metamaterial plate with negative effective mass density** **Mourad Oudich**, Yan Pennec, Bahram Djafari-Rouhani, Badreddine Assouar, Bernard Bonello	

Tuesday, July 23 2013 - IUS

03:30 pm – 04:30 pm	Poster Session and Student Paper Competition (SPC) and Refreshments					
04:30 pm -06:00 pm	**Oral --- Tuesday, July 23 2013**					
	Session IUS1-F1. Drug and gene delivery *Chair:* **Hairong Zheng**	***Session IUS1-F2. Novel approaches to vector velocity imaging*** *Chair:* **Piero Tortoli**	***Session IUS1-F3. Ultrasound tomography, segmentation, and visualization*** *Chair:* **Hans Bosch**	***Session IUS2-F. Ultrasonic Measurements and Characterization*** *Chair:* **Roman Maev**	***Session IUS4-F. Memorial Session Ken Lakin*** *Chair:* **Donald Malocha**	***Session IUS3-F. Phononic crystals 1*** *Chair:* **Sebastien Guenneau**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
04:30 pm	***IUS1-F1-1*** **Ultrasound-induced bioorthogonal chemistry in-situ using composite droplets** **Marine Bézagu**, Claudia Errico, Victor Chaulot-Talmon, Stellios Arseniyadis, Olivier Couture, Mickael Tanter, Janine Cossy, Patrick Tabeling	***IUS1-F2-1*** **High Frame Rate Synthetic Aperture Duplex Imaging** **Matthias Bo Stuart**, Borislav Gueorguiev Tomov, Michael Johannes Pihl, Jørgen Arendt Jensen	***IUS1-F3-1*** **Evaluation of breast tissue characterization by ultrasound computer tomography using a 2D/3D image registration with mammograms** **Torsten Hopp**, Aurelien Stromboni, Neb Duric, Nicole V, Ruiter	***IUS2-F-1*** **GHz Ultrasonics with Arbitrary Code Excitation** **Antti I. Meriläinen**, Ville Kananen, Christoffer Fridlund, Joona Eskelinen, Kay Raum, Edward Hæggström	***IUS4-F-1*** **Kenneth Meade Lakin – A Personal Reminiscence** **Robert Addison**	***IUS3-F-1*** **Dispersion Engineering in Aluminum Nitride Phononic Crystal Plates** Bongsang Kim, Darren Branch, Peggy Clews, Janet Nguyen, Peter Rakich, **Roy Olsson**
04:45 pm	***IUS1-F1-2*** **Targeted Drug Delivery with Focused Ultrasound-Induced Blood-Brain Barrier Opening Using Acoustically-Activated Nanodroplets** **Cherry Chen**, Paul Sheeran, Shih-Ying Wu, Oluyemi Olumolade, Paul Dayton, Elisa Konofagou	***IUS1-F2-2*** **Reconstruction of Flow Velocity inside Vessels by Tracking Single Microbubbles with an MCMC Data Association Algorithm** **Dimitri Ackermann**, Georg Schmitz	***IUS1-F3-2*** **First Results of a Clinical Study with 3D Ultrasound Computer Tomography** **Nicole Ruiter**, Michael Zapf, Robin Dapp, Torsten Hopp, Werner Kaiser, Hartmut Gemmeke	***IUS2-F-2*** **Material Microstructure and Ultrasonic Nonlinearity** Aurora Zinck,**Sridhar Krishnaswamy**	***IUS4-F-2 (Invited)*** **Memorial: Seminal Papers of Ken Lakin** **Rich Ruby**, Robert Aigner	***IUS3-F-2*** **Acousto-Mechanical Tuning of Photonic Crystal Nanocavity Modes** **Achim Wixforth**, Stephan Kapfinger, Daniel Fuhrmann, Hubert Krenner
05:00 pm	***IUS1-F1-3*** **Enhancements in blood-tumor barrier permeability and delivery of liposomal doxorubicin using focused ultrasound and microbubbles: evaluation during tumor progression in a rat glioma model** **Muna Aryal**, Juyoung Park, Yong-Zhi Zhang, Natalia Vykhodtseva, Nathan McDannold	***IUS1-F2-3*** **Spectral velocity estimation in the transverse direction** **Jørgen Arendt Jensen**	***IUS1-F3-3*** **A new 3D-tomographic ultrasound imaging concept for breast cancer and rheumatoid arthritis diagnostics avoiding water bath techniques** **Andreas Koch**, Markus Genser, Florian Stiller, Reinhard Lerch, Helmut Ermert	***IUS2-F-3*** **Acoustical-Optical Hybrid Microscopy for Characterization of Thin Polymer Films** **Hironori Tohmyoh**, Yuhei Sakamoto		***IUS3-F-3*** **Cavity modes and optomechanic interactions in phoxonic crystals** Said El jallal, Mourad Oudich, **Yan Pennec**, Bahram Djafari-Rouhani

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05:15 pm	***IUS1-F1-4*** **MHz Ultrasonic Drive-In: Localized Drug Delivery for Osteoarthritis Therapy?** **Heikki J. Nieminen**, Alexander Meaney, Ari Salmi, Ritva Serimaa, Edward Hæggström	***IUS1-F2-4*** **Real-Time implementation of Vector Velocity Measurement along an M-mode line** Luca Bassi, **Stefano Ricci**, Piero Tortoli	***IUS1-F3-4*** **Simultaneous segmentation of multiple heart cavities in 3D transesophageal echocardiograms** **Alexander Haak**, Gonzalo Vegas-Sanchez-Ferrero, Harriet H. Mulder, Hortense A. Kirisli, Nora Baka, Coert Metz, Stefan Klein, Ben Ren, Gerard van Burken, Theo van Walsum, Antonius F.W. van der Steen, Josien P.W. Pluim, Johan G. Bosch	***IUS2-F-4*** **Lorentz Force Hydrophone Prototype Characterization** **Pol Grasland-Mongrain**, Jean-Martial Mari, Benjamin Roussel, Adrien Poizat, Jean-Yves Chapelon, Bruno Gilles, Cyril Lafon	***IUS4-F-3*** **FBAR/BAW in the Context of the Work by Ken Lakin** **Rich Ruby**	***IUS3-F-4*** **Complexity of band structures: Finite element calculation of complex band structures for one and two dimensional phononic crystals** **Istvan A Veres**, Thomas Berer, Osamu Matsuda
05:30 pm	***IUS1-F1-5*** **Focused ultrasound mediated drug delivery from thermosensitive liposomes** Jean-Michel Escoffre, **Anthony Novell**, Mariska de Smet, Ayache Bouakaz	***IUS1-F2-5*** **Coherent Flow Imaging: A Power Doppler Imaging Technique Based on Backscatter Spatial Coherence** **Jeremy Dahl**, Michael Cook	***IUS1-F3-5*** **Hybrid Energy Approach for Real-time B-spline Explicit Active Tracking of Surfaces (heartBEATS)** **Daniel Barbosa**, Olivier Bernard, Brecht Heyde, Thomas Dietenbeck, Denis Friboulet, Jan D'hooge	***IUS2-F-5*** **PZT Dust Impact Monitor (DIM) Onboard Rosetta/Philae: Experimental Results and Theoretical Background** **Walter Arnold**, Alberto Flandes, Attila Hirn, Harald Krüger, Alexander Loose, Matthias Sperl, Klaus Jürgen Seidensticker, Hans-Herbert Fischer	***IUS4-F-4*** **Complex Peripheral Lamb Modes in FBARs** **Jyrki Kaitila**, John D. Larson III	***IUS3-F-5*** **Electric charge band gaps in phononic crystals** **Sebastien Degraeve**, Christian Granger, Bertrand Dubus, Jerome Vasseur, Anne-Christine Hladky-Hennion, Mai Pham Thi
05:45 pm	***IUS1-F1-6*** **SPIO-loaded droplets ingested by macrophages for magnetism-assisted drug delivery system** **Jia-Jiun Chen**, Chung-Hsin Wang, Chi-Shiun Chiang, Chih-Kuang Yeh	***IUS1-F2-6*** **Frequency-domain high frame-rate 2D vector flow imaging** **Matteo Lenge**, Alessandro Ramalli, Enrico Boni, Hervé Liebgott, Christian Cachard, Piero Tortoli	***IUS1-F3-6*** **In Vivo Needle Visualization in Ultrasound Images Using Tensor-Based Filtering** **Bo Zhuang**, Kris Dickie, Laurent Pelissier	***IUS2-F-6*** **MRMR: Multi-Resonance/Multi-Resolution Based Analysis of Ultrasound Waves for High Quality 3D Fingerprint Reconstruction** Aryaz Baradarani, Roman Gr. Maev,**Fedar Severin**	***IUS4-F-5*** **Technology enhancements for high performance BAW duplexer** **Alexandre Volatier**, Gernot Fattinger, Fabien Dumont, Plamen Stoyanov, Robert Aigner	***IUS3-F-6*** **Blazed phononic crystal diffraction gratings with square and hexagonal lattices** Rayisa Moiseyenko, JingFei Liu, Nico Declercq, **Vincent Laude**

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Session IUS1-PB1. Beamforming I *Chair:* **Jian-yu Lu**	***Session IUS1-PB2. Image processing and image guided therapy*** *Chair:* **Olivier Basset**	***IUS1-PB2-8*** **3D ultrasound assisted laparoscopic liver surgery by visualization of blood vessels** **Satoki Zenbutsu**, Tatsuo Igarashi, Ryoichi Nakamura, Toshiya Nakaguchi, Tadashi Yamaguchi	***IUS1-PB3-3*** **Polyvinyl Alcohol Cryogel Elastic Artery Phantoms for Ultrasonic Flow and elasticity measurements** **Ming Qian**, Lili Niu, Yang Xiao, Congzhi Wang, Weibao Qiu, Hairong Zheng	***Session IUS1-PB4. Medical signal processing*** *Chair:* **Kendall Waters**
IUS1-PB1-1 **Clutter Suppression Using Phase Apodization with Cross-correlation in Ultrasound Imaging** Junseob Shin, **Jesse Yen**	***IUS1-PB2-1*** **4DCT-US image fusion for liver motion monitoring** **Remi Blanc**, David Melodelima, Simon Rit, Michel Rivoire, David Sarrut	***IUS1-PB2-9*** **A New Automatically Biopsy Needle Tracking Method Using 3D Ultrasound** **Yue Zhao**, Christian Cachard, Hervé Liebgott	***IUS1-PB3-4*** **High Sensitivity Estimation of Red Blood Cell Aggregation with Ultrasonic Peak Frequency** **Takayuki Sato**, Yasuaki Watanabe	***IUS1-PB4-1*** **Model Based Restoration of the RF Data for High Resolution Vascular Ultrasound Imaging** **Ramazan Demirli**, Chandra Sehgal
IUS1-PB1-2 **Short-Lag Spatial Coherence Combined with Synthetic Aperture Imaging** **MooHo Bae**, Sung-Bae Park, Hyun-Woo Jung, Mok-Kun Jeong, Sung-Jae Kwon	***IUS1-PB2-2*** **Automatic Dynamic Range Optimization for 3D Medical Ultrasound Imaging** **Yeonhwa Lee**, Jinbum Kang, Yangmo Yoo	***IUS1-PB2-10*** **Inter-operator Variability in Defining Uterine Position Using Three-dimensional Ultrasound Imaging** **Mariwan Baker**, Joergen Arendt Jensen, Claus F. Behrens	***IUS1-PB3-5*** **Multiresolution texture features of carotid artery wall and plaque toward identifying vulnerable asymptomatic cases from B-mode ultrasound** **Spyretta Golemati**, Symeon Lehareas, Nikolaos Tsiaparas, Achilleas Chatziioannou, Konstantina Nikita, Despina Perrea	***IUS1-PB4-2*** **Real-Time BAPES Implementation for Fast Spectral Doppler Estimation** **Stefano Ricci**, Riccardo Matera, Piero Tortoli
IUS1-PB1-3 **Clutter Reduction in Plane Wave Synthetic Aperture Imaging** **MooHo Bae**, Sung-Bae Park, Hyung-Jun An, Deokgon Kim, Sung-Jae Kwon	***IUS1-PB2-3*** **Towards Online Real-Time Strain Estimation: Feasibility Study and Initial Clinical Validation** **Daniel Barbosa**, Olivier Bernard, Brecht Heyde, Thomas Dietenbeck, Denis Friboulet, Jan D'hooge	***IUS1-PB2-11*** **Nonlinear Characterization of Tissue and Microbubbles using Nakagami Statistical Model** **BAHBAH NARDJESS**, ANTHONY NOVELL, HAKIM DJELOUAH, AYACHE BOUAKAZ	***IUS1-PB3-6*** **Assessment of median nerve mobility by ultrasound dynamic imaging in carpal tunnel syndrome diagnosis** Tai-Tzung Kuo, **Ming-Ru Lee**, Yin-Yin Liao, Wei-Ning Lee, Yen-Wei Hsu, Jiann-Perng Chen, Chih-Kuang Yeh	***IUS1-PB4-3*** **Ultrasound Compressed Sensing: Performance Study of Reconstruction on Different Ultrasound Imaging Data** **Yen Chuo**, Tsung-Han Chan, Meng-Lin Li

IUS1-PB1-4 **Adaptive beamformer with accurate intensity-estimation technique for high-range-resolution vascular ultrasound imaging** **Hirofumi Taki**, Takuya Sakamoto, Kousuke Taki, Makoto Yamakawa, Tsuyoshi Shiina, Motoi Kudo, Toru Sato	***IUS1-PB2-4*** **Glasses for 3D Ultrasound Computer Tomography** **Michael Zapf**, Nicole Ruiter	***IUS1-PB2-12*** **Machine Learning methods for classifying breast masses with ultrasound imaging** Benjamin Levenback, Laith Sultan, Santosh Venkatesh,**Chandra Sehgal**	***IUS1-PB3-7*** **Soft-label reinforced rtCAB for guided prostate tissue sampling** **Mahdi Tabassian**, Nicola Testoni, Francesca Galluzzo, Luca De Marchi, Nicolo' Speciale, Guido Masetti	***IUS1-PB4-4*** **Efficient Pulse Compression of Chirp Coded Excitation in Medical Ultrasound Imaging** **Changhan Yoon**, Wooyoul Lee, Jin Ho Chang, Tai-Kyong Song, Yangmo Yoo
IUS1-PB1-5 **Theoretical analysis of ultrasound signal coherence in adaptive beamforming** **Shougang Wang**, Sheng-Wen Huang, Jean-Luc Robert, Sanghamithra Korukonda, Francois Vignon, Emil Radulescu	***IUS1-PB2-5*** **Fusion of 3D echo and cardiac magnetic resonance volumes during live scanning** **Gabriel Kiss**, Steven Ford, Piet Claus, Jan D'hooge, Hans Torp	***Session IUS1-PB3. Soft tissue characterization II*** *Chair:* **Michael Kolios**	***IUS1-PB3-8*** **Projection Mode Ultrasonic Microscopy for Cell-size Observation** Agus Indra Gunawan, **Naohiro Hozumi**, Tomohide Furuhashi, Sachiko Yoshida, Kazuto Kobayashi, Yoshifumi Saijo, Seiji Yamamoto	***IUS1-PB4-5*** **Effect of a variation of the thickness of cortical bone and soft tissue on the measurement of guided modes propagating in axial transmission** Ludovic Moreau,**Jean-Gabriel Minonzio**, Josquin Foiret, Maryline Talmant, Pascal Laugier
IUS1-PB1-6 **Application of Dual Apodization Cross-correlation to Beamforming by Spatial Matched Filtering for Enhanced Image Contrast** Yuling Chen, **Jesse Yen**	***IUS1-PB2-6*** **Speckle reduction using shearlet thresholding with improved nonlinear anisotropic diffusion** Deep Gupta, **R.S. Anand**, Barjeev Tyagi	***IUS1-PB3-1*** **Basic Study for Characterization of Carotid Plaque Composition Using Ultrasonic Velocity-Change Imaging** **Kazune Mano**, Yu Izukawa, Ryosuke Kimura, Kenji Wada, Toshiyuki Matsunaka, Hiromichi Horinaka	***IUS1-PB3-9*** **Following-up the regeneration of injured rat muscle through the average pixel intensity of ultrasound biomicroscopic images** **Carolina Peixinho**, Liliam de Oliveira, João Machado	***IUS1-PB4-6*** **A Study on Ultrasound Speckle Reduction Based on Stochastic Fluctuation of Transmitted Ultrasound Beam** **Haruka Suzuki**, Norio Tagawa, Kan Okubo
IUS1-PB1-7 **Improved Synthetic Aperture Focusing Technique for Heterogeneous Media using an Ultrasonic Speed Map** **Carlos Villagómez H.**, Cecilia Borba, Wagner C. A. Pereira, Lucía Medina G.	***IUS1-PB2-7*** **Dynamic Ultrasound Imaging of Cervical Spine Intervertebral Discs** **Mingxin Zheng**, Kevin Shiuan, Aidin Masoudi, Daniel Buckland, Thomas Szabo, Brian Snyder	***IUS1-PB3-2*** **Characterization of Anisotropic Poly(vinyl-alcohol) Gels Prepared Using a Two-zone Controlled Directional Freezing Process** **Andrew Dawson**, Gideon Gouws	***IUS1-PB3-10*** **Characterization of the Colorectal Cancer in a Rabbit Model Using Quantitative High-frequency Endoscopic Ultrasound** **Cheng LIU**, Weibao QIU, Yanyan YU, Lei SUN	***IUS1-PB4-7*** **Recursive Reduction of Frequency Dependent Attenuation for Wide-Band Ultrasound Imaging in a Living Body** **Takuya Hiraoka**, Norio Tagawa, Kan Okubo, Iwaki Akiyama

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Tuesday, July 23 2013			Forum Hall
Session IUS1-PB5. Therapy I *Chair:* **Zhen Xu**	***IUS1-PB5-8*** **Extracorporeal Acute Cardiac Pacing by High Intensity Focused Ultrasound** **Amit Livneh**, Eitan Kimmel, Dan Adam	***Session IUS2-PB2. NDE Imaging and Signal Processing*** *Chair:* **Erdal Oruklu**	***Session IUS2-PB3. Sensor Applications*** *Chair:* **Pierre T. Khuri-Yakub**	***IUS2-PB3-8*** **Thin Films and Techniques for SAW Sensor Operation Above 1000°C** Roby Behanan, Scott Moulzolf, Mike Call, David Frankel, George Bernhardt, Robert Lad, **Mauricio Pereira da Cunha**
IUS1-PB5-1 **Fusion modeling for predicting the Impact of in-vivo Liver Motion on HIFU therapies** **William Apoutou N'DJIN**, Jean-Yves CHAPELON, David MELODELIMA	***IUS1-PB5-9*** **Feasibility of thin catheter manipulation in the capillary blood vessel using acoustic radiation force** **Takashi Mochizuki**, Naoto Hosaka, Ren Koda, Nobuhiko Shigehara, Kohji Masuda	***IUS2-PB2-1*** **Bilinear Time-Frequency Distributions for Ultrasonic Signal Processing and NDE Applications** **Jafar Saniie**, Juan Lu, Erdal Orulku	***IUS2-PB3-1*** **A Pulse-to-Pulse Incoherent Flow Measurement with Frequency-Coded Signals** **Manuel Haide**	***Session IUS3-PB. Modeling in physical acoustics*** *Chair:* **Koen W.A. van Dongen**
IUS1-PB5-2 **Multiobjective optimization technique for treatment planning in HIFU** **Mun-Bo Shim**, Sung-Jin Kim	***Session IUS2-PB1. NDE Methods*** *Chair:* **Mario Kupnik**	***IUS2-PB2-2*** **Echo parameter estimation for ultrasonic NDE applications via a two-step compressed sensing** Yufeng Lu, **Ramazan Demirli**, Jafar Saniie	***IUS2-PB3-2*** **Study about the propagation of airborne ultrasonic wave through a heel for bone-density estimation** **Shinnosuke Hirata**, Katsuyuki Kiso, Kotaro Hoshiba, Hiroyuki Hachiya, Nobuo Niimi	***IUS3-PB-1*** **SH-SAWs in Piezoelectric Structure with an Imperfectly Bonded Viscoelastic Layer** Jing Cui, **Jianke Du**, Ji Wang
IUS1-PB5-3 **CT based aberration correction for 1 MHz transcranial HIFU therapy: optimization of the speed of sound maps with experimental propagation matrices.** **Laurent Marsac**, Mathieu Pernot, Mathias Fink, Jean-Francois Aubry, Mickael Tanter	***IUS2-PB1-1*** **Evaluation of the *Pinus taeda* quality using ultrasound** **Ozana M. A. Maia**, Fabio K. Schneider, Joaquim M. Maia, Mayara F. G. Souza, Marcelo R. Prado, Susete R. C. Penteado, Wilson R. Filho, Edson T. Iede	***IUS2-PB2-3*** **Relation between Sampling Frequency and Truncation index inTruncated Singular Value Decomposition for UT probe Array** **Yoshiiro Nishimura**, Takayuki Suzuki, Katsumi Fukuda, Mugito Ishii, Masatoshi Fukuta	***IUS2-PB3-3*** **Discriminating samples of drinkable water by their ultrasound time-of-flight (TOF)** **He Yin**, Ahmad Afaneh, Alexander Kalashnikov	***IUS3-PB-2*** **An Analysis of the Frequency-temperature Relations of SC-cut Quartz Crystal Plates with the Lee Plate Theory** Tingfeng Ma, Wejun Wang, Jianke Du, Dejin Huang, **Ji Wang**

IUS1-PB5-4 **Numerical Estimation of HIFU Focal Error to Breast Cancer Treatment** Ryuta Narumi, **Kosuke Matsuki**, Takashi Azuma, Kohei Okita, Akira Sasaki, Kiyoshi Yoshinaka, Junichi Shidooka, Hidemi Furusawa, Shu Takagi, Yoichiro Matsumoto	***IUS2-PB1-2*** **Acoustic Imaging of Bump Defects in Flip-Chip devices using Split Spectrum Analysis** **Sebastian Tismer**, Sebastian Brand, Sandy Klengel, Peter Czurratis, Matthias Petzold	***IUS2-PB2-4*** **The use of instantaneous phase for improving sparse arrays images** **Vander Prado**, Ricardo Tokio Higuti, Cláudio Kitano, Óscar Martínez-Graullera	***IUS2-PB3-4*** **Analysis of Change in Motional Capacitance of Quartz-Crystal Tuning-Fork Tactile Sensor Induced by Viscoelastic Materials in Contact with Its Base** **Hideaki Itoh**, Naoki Hakakeyama	***IUS3-PB-3*** **An Analytic Method of Solving the Problems of Reflection and Refraction of Waves in Piezoelastic Media** **Sadriten Tleukenov**, Nurkhat Zhakiyev
IUS1-PB5-5 **Uterine fibroid ablation using a flat phased array: a simulation study of treatment efficiency** **Nicholas Ellens**, Kullervo Hynynen	***IUS2-PB1-3*** **Optimizing Light Delivery In Scattering Media by Photoacoustic-guided Wavefront Shaping** **Thomas Chaigne**, Ori Katz, Emmanuel Bossy, Claude Boccara, Mathias Fink, Sylvain Gigan	***IUS2-PB2-5*** **An enhanced Ultrasound technique for 3D Palmprint Recognition** **Antonio Iula**, Enrico Boni, Alessandro Ramalli	***IUS2-PB3-5*** **Determination method of liquid concentration using SH-SAW sensor without reference liquid** **Jun Kondoh**, Saburo Endo, Takuya Nozawa	***IUS3-PB-4*** **A new analytical expression for fast calculation of the transient far field of a rectangular baffled piston** **Alejandra Ortega**, Ling Tong, Jan D'hooge
IUS1-PB5-6 **Adaptive Displacement Estimation for Optimal Reconstruction of Thermal Strain** **Xuan Ding**, Debaditya Dutta, Ahmed Mahmoud, Kang Kim	***IUS2-PB1-4*** **Determining the Quality of Space Tether in a Nondestructive manner** **Göran Maconi**, Henri Seppänen, Timo Rauhala, Anni Toppila, Sergiy Kiprich, Jukka Ukkonen, Pekka Janhunen, Edward Hæggström	***IUS2-PB2-6*** **The quality control of the spot welds using enhanced total focusing method** **Vykintas Samaitis**, Elena Jasiuniene, Liudas Mazeika, Ruth Sanderson	***IUS2-PB3-6*** **Gas Sensor for Sensor Network Using Resonators with Double-Reflection SAWs to Achieve Large Interaction Areas within Small Chip** **Mitsutaka Hikita**, Hosaka Jun	***IUS3-PB-5*** **Nonlinear acoustic propagation simulation tools: Comparison of BBGASM and INCS up to the fifth harmonic components** **François Varray**, Libertario Demi, Koen W.A. van Dongen, Olivier Basset, Christian Cachard, Martin D. Verweij
IUS1-PB5-7 **Investigation of the Mechanism of Elastography-based Doppler Feedback of Histotripsy Tissue Fractionation** **Ryan Miller**, Xi Zhang, Adam Maxwell, J. Brian Fowlkes, Charles Cain, Zhen Xu	***IUS2-PB1-5*** **Scattering of Fundamental Lamb Wave Modes Obliquely Incident on a Surface Breaking Crack in a Plate** Sridhar Santhanam,**Ramazan Demirli**	***IUS2-PB2-7*** **Generating a pencil beam from a focused transducer using Stolt migration** Mariana Melo Mota, **Paul van Neer**, Arno Volker	***IUS2-PB3-7*** **Accurate Round Trip Delay Time Estimator for Simultaneous Identification of Multiple SAW ID Tags** **Maria Klaffenboeck**, Stefan Schuster, Stefan Scheiblhofer, Andreas Stelzer	***IUS3-PB-6*** **A computationally efficient elastic wave model with power-law absorption** **Bradley Treeby**, Ben Cox

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IUS3-PB-7 **Time-domain Simulations of the Acoustic Streaming Produced by a Propagating Wave Radiated by a Circular Piston** **Arturo Santillan**	***IUS4-PB1-4*** **High Temperature Stable Leaky Surface Wave Propagation Properties of SiO_2/Electrodes/Rotated Y-X $LiTaO_3$ Structure with Super High Coupling** **Kazuhiko Yamanouchi**	***IUS4-PB2-4*** **Thermal Characterization of Surface Acoustic Wave Devices** **Christian Huck**, Herbert Zidek, Thomas Ebner, Karl Wagner, Achim Wixforth	***IUS5-PB-6*** **Droplets, vapours and clouds – a new approach to capacitive transducer manufacture** **Richard O'Leary**, Gerald Harvey	
IUS3-PB-8 **Modeling of sound propagation in media with continuously changing properties towards a locally resolved measurement of sound velocity** **Mario Wolf**, Elfgard Kühnicke, Michael Lenz, Martin Bock	***IUS4-PB1-5*** **SAW resonance transmission through strip acoustic waveguides** **Alexander Darinskii**, Manfred Weihnacht, Hagen Schmidt	***IUS4-PB2-5*** **Acoustic Characteristics of the Third-Order Quasi-Symmetric Lamb Wave Mode in an AlN/3C-SiC Plate** **Chih-Ming Lin**, Yung-Yu Chen, Valery V. Felmetsger, Debbie G. Senesky, Albert P. Pisano	***IUS5-PB-7*** **Micromachined structures for non-linear ultrasonic transduction** **Omololu Akanji**, David Hutchins, Simon Leigh	
IUS3-PB-9 **Compressional acoustic waves in structure "Piezocylinder – viscoelatic layer – liquid"** **Andrei Teplykh**, Boris Zaitsev, Iren Kuznetsova	***IUS4-PB1-6*** **Balanced Low-Loss Narrowband 3-IDT Double Mode SAW Filters with Improved Selectivity** **Sergei Doberstein**	***Session IUS5-PB. Ultrasonic Transducers and Materials*** *Chair:* **Wei Ren**	***IUS5-PB-8*** **Characterization of Hydrophone with Hydrothermal PZT Thick Film Vibrator and Ti Front Layer for Measurement in High Intensity Therapeutic Ultrasound** **Nagaya Okada**, Yoshiyuki Asakura, Michihisa Shiiba, Takeyoshi Uchida, Masahiro Yoshioka, Tsuneo Kikuchi, Minoru K. Kurosawa, Shinichi Takeuchi	
IUS3-PB-10 **Shear horizontal waves in piezoelectric plates with polarization gradient** **Bernard Collet**	***IUS4-PB1-7*** **Resonance Properties of APTUDT on SAW vs. Electrode Track Apertures** **Sergey Biryukov**, Hagen Schmidt, Manfred Weihnacht	***IUS5-PB-1*** **Validation of an approximation formula of the effective $d_{33,eff}$ of periodic and non-periodic 1-3 composites** **Sabine Kern**, Christoph Pientschke, Hartmut S. Leipner	***IUS5-PB-9*** **Dual frequency transducer for Images using thick film** Sergio N. Gwirc, Juan Carlos Gómez, Federico Dos Reis Copello, **Nestor Marino**	

Session IUS4-PB1. SAW Transducers & Propagation *Chair:* **Masanori Ueda**	***Session IUS4-PB2. Harsh Environment & High Power*** *Chair:* **Mauricio Pereira da Cunha**	***IUS5-PB-2*** **Fabrication and Characterization of Thick Film Piezoelectric Lead Zirconate Titanate (PZT) By Tape Casting Processing** Yingying Sun, Lifeng Qin,**Qing-Ming Wang**	***IUS5-PB-10*** **Lesion expansion by using dual-concentric-sectored HIFU transducer with phase-shifted ultrasound** **Jong Seob Jeong**	
IUS4-PB1-1 **Analysis of a SAW Transducer Having Aperiodic Multi-Electrode Cells Using a Coupled FEM/BIE Numerical Model** Pascal Ventura, **Pierre Dufilié**, Frédéric Hecht	***IUS4-PB2-1*** **Thermally Stable SiO_2/AlN Lamb Wave Resonators Utilizing Lowest-Order Quasi-Symmetric Mode at High Temperatures** **Jie Zou**, Chih-Ming Lin, Albert P. Pisano	***IUS5-PB-3*** **Modification of the Ultrasonic Properties of Elastomers Loaded with Magnetic Particles by Applying Magnetic Fields During Vulcanization.** **Iker Agirre Olavide**, Maria Dolores Fariñas, Mounir Bouali Sidi, Maria Jesus Elejabarrieta, Tomas Gomez Alvarez-Arenas	***IUS5-PB-11*** **HIFU Transducer with Controllable Curvature** Jungsoon Kim, **Moojoon Kim**, Kanglyeol Ha, Seonae Hwangbo, Mincheol Chu	
IUS4-PB1-2 **Acoustic loss mechanism in Silicon Dioxide Films for Temperature Compensated Surface Acoustic Wave Devices** **Satoru Matsuda**, Michio Miura, Takashi Matsuda, Masanori Ueda, Yoshio Satoh, Ken-ya Hashimoto	***IUS4-PB2-2*** **Platinum/AlN/Sapphire SAW resonator operating in GHz range for High temperature Wireless SAW sensor** Eloi Blampain, **omar Elmazria**, Ouarda Legrani, Stefan Mc Murtry, Chen Fu, Kee-Keun Lee, Sang Sik Yang	***IUS5-PB-4*** **Development of a HighlyAttenuativeBacking for Ultrasonic Transducers with PeriodicArrangement of PolymericRods inside the Backing** **Byungkuk Bae**, Hyungkeun Lee, Wonseok Lee, Susung Lee, Yongrae Roh	***IUS5-PB-12*** **Development of wearable and flexible ultrasonic sensor for skeletal muscle monitoring** Ibrahim AlMohimeed, Hisham Turkistani, **Yuu Ono**	
IUS4-PB1-3 **Direct Calculation of First and Second Order Temperature Coefficients of Delay for Surface Acoustic Waves on Anisotropic Substrates** **Valery Grigorievsky**, Victor Plessky	***IUS4-PB2-3*** **Investigation of the CTGS Single Crystals Potential for High Temperature SAW Devices** **Sergey Sakharov**, Alexei Zabelin, Andrey Medvedev, Svetlana Bazalevskaya, Oleg Buzanov, Dmitrii Roshchupkin, Serguei Kondratiev, Alexander Shvetsov, Sergei Zhgoon	***IUS5-PB-5*** **Measurement of Temperature Dependence in Material Coefficients of PZT Ceramics for Acoustic Emission Sensors** **Jiri Fialka**, Petr Benes, Stanislav Klusacek		

Wednesday. July 24 2013 - IUS

08:30 am – 10:00 am			**Plenary Session III: Distinguished Service Award, IFCS and EFTF Awards** **IFCS-EFTF Plenary talk: Session Chair; Warren Walls*, US Naval Observatory, USA*** **Plenary speaker: Daniel Kleppner, *MIT-Harvard Centre for Ultracold Atoms*, USA, In Praise of the Useless and the Useful: the Creation of Atomic Clocks** **Congress Hall**			
10:00 am – 10:30 am			**Refreshments**			
10:30 am -12:00 pm			**Oral --- Wednesday, July 24 2013**			
	Session IUS1-G1. Microbubbles and therapy *Chair:* **Ayache Bouakaz**	***Session IUS1-G2. New elasticity imaging methods and applications*** *Chair:* **Brett Byram**	***Session IUS1-G3. New medical devices*** *Chair:* **Stuart Foster**	***Session IUS2-G. NDE - Ultrasonic Applications*** *Chair:* **Donald E. Yuhas**	***Session IUS5-G. CMUTs and Airborne Applications*** *Chair:* **Yongrae Roh**	***Session IUS4-G. Materials and Processes for Microacoustics*** *Chair:* **Robert Aigner**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
10:30 am	***IUS1-G1-1 (Invited)*** **Intravascular Ultrasound-Based Imaging and Drug Delivery** Ali Dhanaliwala, Johnny Chen, Joseph Kilroy, Linsey Phillips, Adam Dixon, Brian Wamhoff, Alexander Klibanov,**John Hossack**	***IUS1-G2-1*** **Imaging of Shear Waves Induced by Lorentz Force** **Pol Grasland-Mongrain**, Stefan Catheline, Sandra Montalescot, Cyril Lafon	***IUS1-G3-1*** **Breast imaging using ultrasound tomography: From clinical requirements to system design** **Olivier Roy**, Steven Schmidt, Cuiping Li, Veerendra Allada, Erik West, David Kunz, Neb Duric	***IUS2-G-1*** **Prototyping and evaluation of ultrasonic particle filter considering water flux and sound propagation direction** **Takuya Kambayashi**, Tomonori Saeki, Kentaro Nakamura	***IUS5-G-1*** **Air-coupled CMUTs operating at ambient pressures ranging from 1 to 20 atm** Min-Chieh Ho, **Kwan Kyu Park**, Kristian Eckhoff, Mario Kupnik, Butrus T. Khuri-Yakub	***IUS4-G-1*** **Electromechanical coupling k_t and GHz longitudinal wave velocity in ScAlN films near phase boundary** **Masashi Suzuki**, Takahiko Yanagitani
10:45 am		***IUS1-G2-2*** **Optoacoustic Elastography for Tissue Biomechanical Property Characterization Using a Ring Transducer** **Teng Ma**, Rui Li, Wenjuan Qi, Qifa Zhou, Zhongping Chen, K. Kirk Shung	***IUS1-G3-2*** **An Integrated Ring CMUT Array for Endoscopic Ultrasound and Photoacoustic Imaging** **Amin Nikoozadeh**, Chienliu Chang, Jung Woo Choe, Anshuman Bhuyan, Byung Chul Lee, Azadeh Moini, Yagi Takayuki, Pierre T. Khuri-Yakub	***IUS2-G-2*** **Study on Non Contact Acoustic Imaging Method for Concrete Structures - Improvement of Signal-to-noise Ratio by using Tone Burst Wave Method -** **Ryo Akamatsu**, Tsuneyoshi Sugimoto, Noriyuki Utagawa, Kageyoshi Katakura	***IUS5-G-2*** **Designing Lossless Wide Bandwidth CMUTs for Airborne Applications Using Nonlinear Effects** **Asli Unlugedik**, Abdullah Atalar, H. Kagan Oguz, Hayrettin Koymen	***IUS4-G-2*** **Highly oriented (00.2) aluminum nitride close to single crystal using (111) Titanium Nitride buffer layer for microwave high power electro-acoustic devices** **Ali Soltani**, Abdelkrim Talbi, Vincent Mortet, Abdallah Bassam, Jean-Claude Gerbedoen, Gilles Patriarche, Jean-Claude Dejaeger, Phillipe Pernod

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11:00 am	***IUS1-G1-2*** **Investigating the interaction between individual microbubbles and fibrin clots exposed to ultrasound** **Christopher Acconcia**, Ben Leung, Kullervo Hynynen, David Goertz	***IUS1-G2-3*** **Assessing Cross-sectional Elasticity Map by Dynamic Imaging Acoustic Waves with Phase Sensitive Optical Coherence Tomography** **Shaozhen Song**, Zhihong Huang, Ruikang Wang	***IUS1-G3-3*** **Microstructure Design for Detection of Implantable Device Using Ultrasound** **I-Chin Wu**, Pai-Chi Li	***IUS2-G-3*** **Multi-mode Tandem Ultrasonic Technique for Tube Inspection** **Shivaprasad S**, Kannan C, Sova Bhattacharya, S P Singh, Krishnan Balasubramaniam	***IUS5-G-3*** **CMOS-based Capacitive Micromachined Ultrasonic Transducers Operating without External DC Bias** **Fang-Yu Lin**, Wei-Cheng Tien, Pai-Chi Li	***IUS4-G-3*** **ScAlN Lamb Wave Resonator in GHz Range Released by XeF_2 Etching** **Akira Konno**, Shota Sumisaka, Akihiko Teshigahara, Kazuhiko Kano, Ken-ya Hashimoto, Hideki Hirano, Masayoshi Esashi, Shuji Tanaka
11:15 am	***IUS1-G1-3*** **Experimental and numerical investigation of microbubble-loaded stem cell dynamics during ultrasound exposure** **Tom Kokhuis**, Benno Naaijkens, Lynda Juffermans, Otto Kamp, Antonius van der Steen, Michel Versluis, Nico de Jong	***IUS1-G2-4*** **Passive shear wave imaging using low frame rate scanners** **Stefan Catheline**, Rémi Souchon, Matthieu Ruppin, Javier Brum, Au Hoang Dinh, Jean-Yves Chappelon	***IUS1-G3-4*** **In-plane needle-tip localization with sub-millimeter precision using an ultrasonic optical fiber hydrophone** **Jean Martial Mari**, Simeon West, Ben Cox, Paul Beard, Adrien Desjardins	***IUS2-G-4*** **Ultrasonic dynamic air-gap monitoring system for large hydro-generators** **Julio Cezar Adamowski**, Alan Souza, Allan Lima, Paulo Oda, Hamiltin Tiba	***IUS5-G-4*** **Phase shift micro-beamforming of CMUT arrays using the spring-softening effect** **Alessandro Stuart Savoia**, Giulia Matrone, Giovanni Magenes, Nicola Lamberti, Giosuè Caliano	***IUS4-G-4*** **Highly piezoelectric co-doped AlN thin films for bulk acoustic wave resonators** **Tsuyoshi Yokoyama**, Yoshiki Iwazaki, Yousuke Onda, Tokihiro Nishihara, Masanori Ueda
11:30 am	***IUS1-G1-4*** **Synthesis of Albumin Microbubbles using a Microfluidic Device for Real-Time Imaging and Therapeutics** **Johnny Chen**, Ali Dhanaliwala, Adam Dixon, Shiying Wang, Alexander Klibanov, John Hossack	***IUS1-G2-5 In Vivo*** **Achilles Tendon Elasticity Assessment using Supersonic Shear Imaging: a feasibility study** **Javier Brum**, Jean Luc Gennisson, Mathias Fink, Mickael Tanter	***IUS1-G3-5*** **Magnetic Linear Actuator for Vascular Access Surveillance** **Grant Kruger**, John Pitre Jr., Alan Vollmer, Leo Koziol, Joseph Bull, William Weitzel	***IUS2-G-5*** **On-chip spatially controlled sonoporation of single cell with microbubble cluster cavitation by surface acoustic waves** **Long Meng**, Peng Jiang, Feiyan Cai, Lili Niu, Hairong Zheng	***IUS5-G-5*** **An experimental study on coded excitation in CMUT arrays to utilize simultaneous transmission multiple-zone focusing method with frequency divided sub-band chirps** **Bae-Hyung Kim**, Seungheun Lee, Youngil Kim, Kyungil Cho, Taeho Jeon, Jongkeun Song	***IUS4-G-5 (Invited)*** **Development of Stealth Dicing Technology for RF IC** Naoki Uchiyama, **Joji Sakakiyama**
11:45 am	***IUS1-G1-5*** **Automatic respiratory gating for perfusion quantification of DCEUS** **Damianos Christofides**, Edward Leen, Michalakis Averkiou	***IUS1-G2-6*** **Ultrasound strain imaging in peripheral neuropathy: a preliminary in vivo study** **Yin-Yin Liao**, Wei-Ning Lee, Ming-Ju Lee, Chih-Kuang Yeh	***IUS1-G3-6*** **Pocket-Sized Ultrasonic Nebulizer For Inhalation Drug Delivery*** **Chen Tsai**, R. W. Mao, S. K. Lin, Y. Zhu, S. C. Tsai	***IUS2-G-6*** **Acoustic Radiation Forces in Monitoring of Nanoparticles in Biological Fluids** **Aba Priev**, Victor Ponomarev, Yechezkel Barenholz	***IUS5-G-6*** **Optimized airborne ultrasonic ferroelectret transducer by adjustment of transducer foam structure, elastic properties and charging degree** **Martynas Sborikas**, Michael Wegener	

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12:00 pm – 01:00 pm	Lunch Break					
01:00 pm - 2:00 pm	Poster Session and Student Paper Competition (SPC)					
02:00 pm -03:30 pm	Oral --- Wednesday, July 24 2013					
	Session IUS1-H1. Photoacoustic imaging and microscopy *Chair:* **Stanislav Emelianov**	***Session IUS1-H2. Blood brain barrier opening*** *Chair:* **Kullervo Hynynen**	***Session IUS1-H3. Soft tissue characterization II*** *Chair:* **William O'Brien**	***Session IUS2-H. Liquid and Flow*** *Chair:* **Mario Kupnik**	***Session IUS5-H. High Power Ultrasound Applications*** *Chair:* **Sorah Rhee**	***Session IUS3-H. Thin films*** *Chair:* **Emmanuel Defay**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
02:00 pm	***IUS1-H1-1 (Invited)*** **Studying Biological Systems with Multi-Spectral Optoacoustic Tomography** **Vasilis Ntziachristos**	***IUS1-H2-1*** **A Preclinical Toxicological Study for Repeated Opening of the Blood-Brain Barrier with an Implantable Ultrasound Device** **Catherine Horodyckid**, Michael Canney, Alejandra Uzcategui Pedroza, Alexandre Vignot, Cyril Lafon, Jean-Yves Chapelon, Alexandre Carpentier	***IUS1-H3-1*** **Towards Backscattering Tensor Imaging (BTI): Analysis of the Spatial coherence of ultrasonic speckle in anisotropic soft tissues** **Clément Papadacci**, Mathieu Pernot, Mickael Tanter, Mathias Fink	***IUS2-H-1*** **Volumetric characterization of ultrasonic transducers for gas flow metering** **Maik Hoffmann**, Alexander Unger, Min-Chieh Ho, Kwan-Kyu Park, Butrus T. Khuri-Yakub, Mario Kupnik	***IUS5-H-1*** **Prototype therapeutic array transducer element using coresonance between hemispherical piezoceramic shell and water** **Shin-ichiro Umemura**, Kenji Otsu, Shin Yoshizawa	***IUS3-H-1*** **ELECTRICAL TUNABILITY OF ALN ELASTIC CONSTANTS: DIRECT MEASUREMENT BY ULTRAFAST ACOUSTICS** **Arnaud Devos**, Patrick Emery, Emmanuel Defaÿ
02:15 pm		***IUS1-H2-2*** **Investigating enhanced permeability of blood-brain barrier disruption (BBBD) using dorsal-based ultrasound exposure and two-photon imaging in an animal model** **Tam Nhan**, Alison Burgess, Kullervo Hynynen	***IUS1-H3-2*** **Sound Field Analysis for Biological Acoustic Impedance Microscope for Its Precise Calibration** Naohiro Hozumi,**Agus Indra Gunawan**, Shota Kajima, Sachiko Yoshida, Kazuto Kobayashi, Yoshifumi Saijo, Seiji Yamamoto	***IUS2-H-2*** **A pMUT based flowmeter: a feasibility study** **Paul van Neer**, Tristan Robers, Arno Volker	***IUS5-H-2*** **High Intensity Ultrasound Transducer with a Multi-lens Structure** **Kyle P. Morrison**, George W. Keilman, Misty L. Noble, Carol H. Miao	***IUS3-H-2*** **Young modulus and Poisson ratio of polycrystalline and single crystal PZT thin-film measured by picosecond ultrasonics** **Fabrice Casset**, Arnaud Devos, Julie Abergel, Gwenael Le Rhun, Bertrand Vilquin, Guillaume Saint-Girons, Romain Bachelet, Patrick Emery, Pascal Ancey, Stéphane Fanget, Emmanuel Defay

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02:30 pm	***IUS1-H1-2*** **Coherence-weighted beamforming and automated vessel segmentation for improving photoacoustic imaging of embryonic vasculature using annular arrays** **Parag V. Chitnis**, Orlando Aristizabal, Ashwin Sampathkumar, Erwan Filoux, Jonathan Mamou, Jeffrey A. Ketterling	***IUS1-H2-3*** **Transcranial mapping of microbubble oscillations during focused ultrasound blood brain barrier disruption: modeling and experimental validation in macaques** **Costas Arvanitis**, Greg Clement, Margaret Livingstone, Nathan McDannold	***IUS1-H3-3*** **Spatial-resolution optimization of 3D high-frequency quantitative ultrasound methods to detect metastatic regions in human lymph nodes** **Jonathan Mamou**, Emi Saegusa-Beecroft, Alain Coron, Michael L. Oelze, Tadashi Yamaguchi, Masaki Hata, Eugene Yanagihara, Junji Machi, Pascal Laugier, Ernest J. Feleppa	***IUS2-H-3*** **A Robust Doppler Imaging Method Using Log-step Multicarrier Ultrasonic Signals** **Yasushige Maeda**, Masanori Sugimoto, Hiromichi Hashizume	***IUS5-H-3*** **Effects of Soft Tissue Load and Power Level on Ultrasonic Cutting Tool Driven by PMN-PT d31 Plates** **Yang Kuang**, Muhammad Sadiq, Sandy Cochran, Zhihong Huang	***IUS3-H-3*** **Sputter deposition of stress controlled piezoelectric AlN and AlScN films for ultrasonic and energy harvesting applications** **Stephan Barth**, Hagen Bartzsch, Daniel Glöß, Peter Frach, Thomas Herzog, Susan Walter, Henning Heuer
02:45 pm	***IUS1-H1-3*** **3D Photoacoustic Imaging with Aperture-Encoded Top Orthogonal to Bottom Electrode (TOBE) 2D CMUT Arrays** **Roger Zemp**, Alexander Sampaleanu	***IUS1-H2-4*** **Safety and efficacy of blood-brain barrier disruption with focused ultrasound in a mouse model of Alzheimer's disease** **Alison Burgess**, Sonam Dubey, Isabelle Aubert, Kullervo Hynynen	***IUS1-H3-4*** **On the use of the Structure Factor Model to understand the measured backscatter coefficient from concentrated cell pellet biophantoms** **Emilie Franceschini**, Régine Guillermin, Franck Tourniaire, Edouard Lamy, Jean-François Landrier	***IUS2-H-4*** **Reflections and standing waves for particle concentration in microfluidic channels** **Erin Dauson**, Irving Oppenheim, Kelvin B. Gregory, David W, Greve	***IUS5-H-4*** **Reduced Penetration Force through Ultrasound Activation of a Standard Needle - An Experimental and Numerical Study** Muhammad Sadiq, **Xiaochun Liao**, George Corner, Sandy Cochran, Zhihong Huang	***IUS3-H-4*** **Low temperature sputtered nearly-epitaxial AlN films on sapphire substrates** Aude Lefevre, Ewen Henaff, **Alexandre Reinhardt**, Pierre Patrick Lassagne, Christophe Billard
03:00 pm	***IUS1-H1-4*** **Multi-focus Optical Resolution Photoacoustic Microscopy** **Parsin Hajireza**, Alexander Forbrich, Roger Zemp	***IUS1-H2-5*** **Monitoring of FUS-induced BBB opening in non-human primates using transcranial cavitation detection in vivo and the human skull effect** **Shih-Ying Wu**, Fabrice Marquet, Yao-Sheng Tung, Tobias Teichert, Matthew Downs, Cherry Chen, Vincent Ferrera, Elisa Konofagou	***IUS1-H3-5*** **A Summary Measure of Backscatter Anisotropy in the Non-Pregnant Cervix** **Timothy J. Hall**, Lindsey C. Carlson, Quinton Guerrero, Helen Feltovich	***IUS2-H-5*** **Ultrasound Standing-wave Bio-Reactor design and testing on aerobic activated sludge** **Karel Keesman**, Niels de Beus, Jan Klok, Hans Cappon	***IUS5-H-5 (Invited)*** **Smart cymbal transducers with Nitinol end-caps for power ultrasonics applications** **Margaret Lucas**, Andrew Feeney	***IUS3-H-5*** **Enhancement of electromechanical coupling k_t in rare earth doped c-axis oriented GaN films** **Masashi Suzuki**, Takahiko Yanagitani

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03:15 pm	***IUS1-H1-5*** **Feasibility of optical-resolution photoacoustic microscopy through a multi-mode optical fiber** **Olivier Simandoux**, Ioannis N. Papadopoulos, Salma Farahi, Jean-Pierre Huignard, Christophe Moser, Psaltis Demetri, Emmanuel Bossy	***IUS1-H2-6*** **Localized Delivery of the Neurturin (NTN) neurotrophic factor through Focused Ultrasound - mediated Blood-Brain Barrier Opening** **Gesthimani Samiotaki**, Oluyemi Olumolade, Shutao Wang, Elisa Konofagou	***IUS1-H3-6*** **High-frequency backscatter analysis of human articular cartilage** **Nils Männicke**, Martin Schöne, Matthias Gottwald, Felix Göbel, Michael Oelze, Kay Raum	***IUS2-H-6*** **Analysis of ultrasonic reflection coefficient: application to adhesion measurement at solid/fluid or solid/solid interfaces** **Nicolas Collier**, Dorothée Callens-Debavelaere, Pierre Campistron, Julien Carlier, Bertrand Nongaillard, Guillaume Delaplace		***IUS3-H-6*** **Polarity control of c-axis oriented ZnO films and application to polarity-inverted ZnO multilayer resonators** **Ryosuke Hashimoto**, Takahiko Yanagitani, Ryo Ikoma, Shinji Takayanagi, Masashi Suzuki, Hiroyuki Odagawa, Mami Matsukawa
03:30 pm – 04:30 pm	**Poster Session and Student Paper Competition (SPC) and Refreshments**					
04:30 pm -06:00 pm	**Oral --- Wednesday, July 24 2013**					
	Session IUS1-I1. Cardiovascular imaging *Chair:* **Jeremy Dahl**	***Session IUS1-I2. Improved elasticity imaging methods*** *Chair:* **Mickael Tanter**	***Session IUS1-I3. Beamforming II*** *Chair:* **John Hossack**	***Session IUS2-I. SAW Sensor Applications*** *Chair:* ***David W Greve***	***Session IUS4-I. Memorial Session Clinton Hartmann*** *Chair:* **Ben Abbott**	***Session IUS3-I. Physical acoustics 1*** *Chair:* **Andreas Mayer**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
04:30 pm	***IUS1-I1-1*** **Improvement of Axial Spatial Resolution of Ultrasound Image Using Wiener Filter for Measurement of Intima-Media Thickness of Carotid Artery** **Hideyuki Hasegawa**, Sho Kageyama, Hiroshi Kanai	***IUS1-I2-1*** **Assessment of the Depth-Dependence of the Mechanical Parameters of a Layered Medium Using Surface Excitation and Motion Measurements on the Surface** **Salavat Aglyamov**, Shang Wang, Andrei Karpiouk, Jiasong Li, Michael Twa, Stanislav Emelianov, Kirill Larin	***IUS1-I3-1*** **Apodization Schemes for SLSC Imaging: Simulation, Phantom and in vivo Demonstrations of Image Quality** **Nick Bottenus**, Jeremy Dahl, Gregg Trahey	***IUS2-I-1*** **Response of quartz ball surface acoustic wave (SAW) sensor to trace moisture** **Kazushi Yamanaka**, Satoshi Hagihara, Tomohiro Saito, Oizumi Oizumi, Nobuo Takeda, Shigo Akao, Kosuke Takayanagi, Takayuki Yanagisawa, Noritaka Nakaso, Yusuke Tsukahara, Toshihiro Tsuji	***IUS4-I-1*** **Clinton Sylvester Hartmann: His Achievements and Our Unwritten Stories** **Ken-ya Hashimoto**	***IUS3-I-1 (Invited)*** **Recent developments in the theory and applications of 'acoustic black holes'** **Victor Krylov**

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04:45 pm	***IUS1-I1-2*** **New Quantification Methods for Carotid Intraplaque Neovascularization in Contrast Enhanced Ultrasound (CEUS)** **Zeynettin Akkus**, Gonzalo Vegas Sanchez-Ferrero, Guillaume Renaud, Stijn C.H. van den Oord, Arend F.L. Schinkel, Nico de Jong, Antonius F.W. van der Steen	***IUS1-I2-2*** **Two-dimensional Shear Elasticity Imaging Using Multiple Mechanical Vibration Sources and Directional Filtering** Heng Zhao, Pengfei Song, Armando Manduca, Matthew Urban, Stefan Catheline, James Greenleaf, **Shigao Chen**	***IUS1-I3-2 In vivo*** **demonstration of a real-time simultaneous B-mode/spatial coherence GPU-based beamformer** **Dongwoon Hyun**, Gregg Trahey, Jeremy Dahl	***IUS2-I-2*** **Characterization of liquids using leaky surface acoustic waves in YX-$LiTaO_3$** **Daumantas Ciplys**, Romualdas Rimeika	***IUS4-I-2*** **A Simple Design Procedure for Triple Transit Suppression in an Apodized – Withdrawal Weighted Transducer Filter Structure** **Pierre Dufilie**, Clement Valerio	
05:00 pm	***IUS1-I1-3*** **Monitoring the Formation of Aneurysms and Ruptures in Murine Aortas with Pulse Wave Imaging (PWI)** **Sacha Nandlall**, Monica Goldklang, Jeanine d'Armiento, Elisa Konofagou	***IUS1-I2-3*** **Bayesian Shear Wave Speed Estimation for In Vivo 3D Imaging of the Prostate** **Stephen Rosenzweig**, Ned Rouze, Brett Byram, Mark Palmeri, Thomas Polascik, Kathryn Nightingale	***IUS1-I3-3*** **Transcranial Image Quality Improvement with a Multi-Step approach** **Francois Vignon**, William Shi, Vijay Shamdasani, Paul Kalman, Douglas Maxwell, Jeffry Powers	***IUS2-I-3 (Invited)*** **Wireless Sensing in Hostile Environments** **Mauricio Pereira da Cunha**	***IUS4-I-3*** **A Compact High-Performance EWC/SPUDT SAW Channelizer** Clinton S. Hartmann, **Shen Jen**, Tom A. Martin	***IUS3-I-2*** **Leaky Wedge Acoustic Waves in Single-Crystal Silicon** Alexey Lomonosov, **Pavel Pupyrev**, Peter Hess, Andreas Mayer
05:15 pm	***IUS1-I1-4*** **Volumetric SLSC imaging of vasculature on a clinical matrix array** **Marko Jakovljevic**, Brett Byram, Jeremy Dahl, Gregg Trahey	***IUS1-I2-4*** **Fast Shear Compounding Using Directional Filtering and Two-dimensional Shear Wave Speed Calculation** **Pengfei Song**, Armando Manduca, Matthew W. Urban, Heng Zhao, James F. Greenleaf, Shigao Chen	***IUS1-I3-4*** **Clutter, multiple reverberation and aberration in brain imaging** **Gianmarco Pinton**		***IUS4-I-4*** **A Reduced Model for Fast and Accurate Simulation of Surface Acoustic Wave Devices** **Ken-ya Hashimoto**	***IUS3-I-3*** **The Influence of Support-Configurations on the Acceleration Effects of Doubly Rotated Quartz Resonators at High Temperatures** **Mihir Patel**, Bikash Sinha
05:30 pm	***IUS1-I1-5*** **Reducing Clutter Noise in Fast Ultrasound Imaging with Transverse High-Pass Filtering** **Jian-yu Lu**	***IUS1-I2-5*** **Temporal guided search for elastography motion tracking** **Matthew Bayer**, Timothy Hall	***IUS1-I3-5*** **A model based beamformer utilizing spatial chirps to suppress off-axis and near-field clutter** **Brett Byram**	***IUS2-I-4*** **Ultrasonic Measurement of Heat Flux** **Donald Yuhas**, Keith Karasek, Joseph Lloyd, Tom Klosowiak	***IUS4-I-5*** **Triple Transit Suppression in Electrically Long Dispersive Transducers** **Pierre Dufilie**, Clement Valerio	***IUS3-I-4*** **Thermoelastic Logging for Rock Thermal Properties** **Bikash Sinha**, Andrew Norris

05:45 pm	***IUS1-I1-6*** **An automated pipeline for regional strain estimation from volumetric ultrasound data** **Brecht Heyde**, Daniel Barbosa, Ana-Maria Daraban, Ruta Jasaityte, Piet Claus, Frederik Maes, Jan D'hooge	***IUS1-I2-6*** **Iterative autocorrelation motion estimation with application to elastography imaging** **Svetoslav Nikolov**	***IUS1-I3-6*** **Identification and Impact of Blocked Elements in 1-D and 2-D Arrays** **Marko Jakovljevic**, Jeremy Dahl, Gregg Trahey	***IUS2-I-5*** **Comparison of Newtonian and non-Newtonian fluid dynamics on removal efficiency of non-specifically bound proteins in SAW biosensors** Kamlesh Suthar, Mandek Richardson, Subramanian Sankaranarayanan,**Venkat Bhethanabotla**	***IUS4-I-6*** **Feasibility of SAW Tags in the 6 GHz Frequency Band** Sergey Suchkov, **Boris Sveshnikov**, Sergey Yankin, Sergey Nikitov, Dmitry Suchkov, Victor Plessky	***IUS3-I-5*** **Full-wave nonlinear ultrasound simulation in an axisymmetric coordinate system using the discrete sine and cosine transforms** **Elliott Wise**, Bradley Treeby

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Wednesday, July 24 2013			Forum Hall
Session IUS1-PC1. Beamforming II *Chair:* **Kai Thomenius**	***IUS1-PC1-8*** **Multiple Zone Beamforming in FOCUS** Yi Zhu, Thomas Szabo,**Robert McGough**	***IUS1-PC2-6*** **The multigate Doppler approach for assessing hemodynamics in a forearm vascular access for hemodialysis purposes** **Abigail Swillens**, Stefano Ricci, Piero Tortoli, Patrick Segers	***IUS1-PC3-6*** **Rapid Accumulation of Doxorubicin via Ultrasound Triggered Drug Delivery to Overcome Drug Resistance of MCF-7/ADR Cells and Its Mechanism** **Zhiting Deng**, Fei Yan, Qiaofeng Jin, Hairong Zheng	***IUS1-PC4-5*** **Three-dimensional Imaging of the Vasculature in Chicken Embryo by Combination of Ultrasonic and Photoacoustic Imaging** Mika Sato, Takuya Izumi, Yuji Watanabe, Harukazu Nakamura, **Yoshifumi Saijo**
IUS1-PC1-1 **Evaluation of a Nonlinear, Simultaneous Compressibility and Mass Density Reconstruction Algorithm in Contrast to Established, Linear Ultrasound Imaging Approaches** **Markus Hesse**, Georg Schmitz	***IUS1-PC1-9*** **Fast Coronary Doppler Vibrometry to Detect Myocardial Vibration Associated with Coronary Artery Stenosis Using Flash Imaging** **Jongin Park**, Jeesu Kim, Seok-Min Wi, Kwangju Kim, Daehyun Lee, Sungjoo Yoo, Jong-Seon Park, Ung Kim, Wonjong Park, Jin S. Lee	***IUS1-PC2-7*** **Numerical modeling of the dynamic of ultrasound contrast agents in vascular network: Validation Study** **Laure Boyer**, Pauline Le Notre, Stephen Randall Thomas, Ingrid Leguerney, Nathalie Lassau, Stephanie Pitre-Champagnat	***IUS1-PC3-7*** **Dynamic and Structural behavior of Magnetized PVA-shelled Microbubbles: Acoustic Characterization** **Satya VVN Kothapalli**, Gio Paradossi, Lars-Åke Brodin, Dmitry Grishenkov	***IUS1-PC4-6*** **Investigation of Photoacoustic Signal Strength as a Function of Scan-Speed and Laser-Repetition-Rate** **Wei Shi**, Peng Shao, Roger Zemp
IUS1-PC1-2 **Beamforming and imageforming for 3D ultrasound imaging system using 2-D CMUT-on-ASIC arrays** **Bae-Hyung Kim**, Suhyun Park, Seungheun Lee, Youngil Kim, Kyungil Cho, Taeho Jeon, Jongkeun Song	***Session IUS1-PC2. Blood velocity estimation and applications*** *Chair:* **Damien Garcia**	***Session IUS1-PC3. Contrast agents and drug delivery*** *Chair:* **Nobuki Kudo**	***IUS1-PC3-8*** **Production approaches for microbubbles loaded with nanoparticles** **Marianne Gauthier**, Qian Yin, William D. O'Brien, Jr	***Session IUS1-PC5. Clinical applications of strain imaging*** *Chair:* **Caterina Gallippi**
IUS1-PC1-3 **Thomson's multitaper high frame rate compounding for speckle reduction** **Matthieu Toulemonde**, Olivier Basset, Piero Tortoli, Christian Cachard	***IUS1-PC2-1*** **Transcranial Doppler ultrasound using adaptive beamforming technique for the suppression of high-intensity interferences** **Shigeaki Okumura**, Aya Kita, Hirofumi Taki, Toru Sato	***IUS1-PC3-1*** **Model drug delivery by transiently stable microbubbles produced by a microfluidic device** Adam Dixon, Ali Dhanaliwala, Johnny Chen, **John Hossack**	***Session IUS1-PC4. Photoacoustic imaging*** *Chair:* **Roger Zemp**	***IUS1-PC5-1*** **Displacement Estimation of Arterial Wall from Multiple Directions by Utilizing Diverging Transmit Beam for Synthetic Aperture Ultrasound Imaging** **Hideyuki Hasegawa**, Hiroshi Kanai

IUS1-PC1-4 **Fast Three-Dimensional Ultrasound Cardiac Imaging using Multi-Transmit Beam Forming: A Simulation Study** **Ling Tong**, Alejandra Ortega, Hang Gao, Jan D'hooge	***IUS1-PC2-2*** **New Adaptive Clutter Rejection based on Spectral Decomposition and Tissue Acceleration for Ultrasound Color Doppler Imaging** **Geunyong Park**, Youngtae Kim, HWAN SHIM, HYUN-WOO KOH, JaeJin Lee, Sunmi Yeo, Yangmo Yoo	***IUS1-PC3-2*** **High-Frequency Subharmonic Imaging of Liposome-Loaded Microbubbles** **James McLaughlan**, Nicola Ingram, Radwa Abou-Saleh, Sevan Harput, Tony Evans, Stephen Evans, Louise Coletta, Steven Freear	***IUS1-PC4-1*** **Nanoparticle-mediated photothermal tumor therapy monitored with photoacoustic and magnetic resonance thermometry** **Richard Bouchard**, Trevor Mitcham, Yang Lui, Hannah Lee, Jason Stafford, Marites Melancon	***IUS1-PC5-2*** **Cardiac motion assessment from echocardiographic image sequences by means of the structure multivector** **Martino Alessandrini**, Adrian Basarab, Hervé Liebgott, Olivier Bernard
IUS1-PC1-5 **3D Ultrasound Imaging Performance of a Row-Column Addressed 2D Array Transducer: A Measurement Study** **Morten Fischer Rasmussen**, Jørgen Arendt Jensen	***IUS1-PC2-3*** **Anthropomorphic Flow Phantom Design Using Stereolithography: A Novel Approach Based on Direct Fabrication of Thin-Walled Compliant Vessels** Simon S. M. Lai, Billy Y. S. Yiu, Alexander K. K. Poon,**Alfred C. H. Yu**	***IUS1-PC3-3*** **Improving Tumor Accumulation with SPIO-Loaded Acoustic Nanodroplets and Magnetic Targeting** **Yi-Ju Ho**, Jia-Jiun Chen, Chih-Kuang Yeh	***IUS1-PC4-2*** **Feasibility Study of Identification of Microcalcifications Associated with Benign and Malignant Breast Cancer using Array-based Photoacoustic Spectroscopy** **De-Yi Chiou**, Shi-Bing Luo, Wang-Ting Tieng, Meng-Lin Lee, Shin-Cheh Chen	***IUS1-PC5-3*** **A Feasibility Study of Developing an Acoustic Radiation Force Impulse Imaging for Intravascular Ultrasound** **Cho-Chiang Shih**, Pay-Yu Chen, Chih-Chung Huang
IUS1-PC1-6 **Ultrasound Image Quality Optimization with Adaptive Global Sound Speed Correction** **Yu-Ming Wei**, Pai-Chi Li	***IUS1-PC2-4*** **Slow-time Golay Decoding for Doppler Detection of High-velocity Blood Flow** Che-Chou Shen, **Pin-Hsian Liu**, Jyun-Gong Yu	***IUS1-PC3-4*** **Theoretical Model for Acoustic Streaming Generated by a Bubble Near a Wall** Alexander Doinikov,**Ayache Bouakaz**	***IUS1-PC4-3*** **Enhanced Photoacoustic Detection of Calcifications with Molecular Targeting: Feasibility Study** **Tsai-Chu Hsiao**, Ren-Jei Chung, Meng-Lin Li	***IUS1-PC5-4*** **Supersonic Shear Wave Imaging to Assess Arterial Anisotropy: Ex-vivo Testing of the Horse Aorta** **Darya Shcherbakova**, Clément Papadacci, Abigail Swillens, Annette Caenen, Veronique Saey, Sander De Bock, Koen Chiers, Mickaël Tanter, Mathieu Pernot, Patrick Segers
IUS1-PC1-7 **Parallel Transmit Beamforming by means of Orthogonal Frequency Division Multiplexing: Implementation on an open research platform** **Jacopo Viti**, Libertario Demi, Lieneke Kusters, Francesco Guidi, Massimo Mischi, Piero Tortoli	***IUS1-PC2-5*** **High Sensitivity Blood Color Flow** **Lei Li**, pengfei yang	***IUS1-PC3-5*** **Differentiation of vascular distribution and flow patterns in tumors with Dynamic Contrast-Enhanced Ultrasound (DCE-US) perfusion maps** **Alexandre Dizeux**, Guillaume Barrois, Thomas Payen, Alain Coron, Olivier Lucidarme, Delphine Le Guillou-Buffello, S. Lori Bridal	***IUS1-PC4-4*** **Image Quality Improvement based on Inter-frame Motion Compensation for Photoacoustic Imaging: Preliminary Study** **Minjae Kim**, Jeeun Kang, Jin Ho Chang, Yangmo Yoo	***IUS1-PC5-5*** **Shear wave elasticity measurements from natural pulsatility of human carotid artery: a preliminary *ex vivo* study.** **Redouane Ternifi**, Jean-Pierre Remenieras, Emmanuel Nicolas, Emmanuel Simon, Samuel Callé

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Wednesday, July 24 2013			Forum Hall
IUS1-PC5-6 **A Phase-based Motion Estimation Technique for Mouse Cardiac Function Using the Monogenic Signal and High Resolution Ultrasound** **Dan Lin**, Brent A. French, John A. Hossack	***IUS1-PC6-6*** **A Novel Bipolar Pulse Generator for High-frequency Ultrasound System** **Jian-Xing Wu**, Yi-Chun Du, Chia-Hung Lin, Pei-Jarn Chen, Tainsong Chen	***IUS2-PC1-5*** **Measurement of Local Wood Velocities by Acoustic Microscopy** **Dawei Wu**, Paul Harris	***IUS2-PC2-4*** **Theoretical Analysis and Experimental Validation of the Scholte Wave Propagation in Immersed Plates for the Characterization of Viscous Fluids** **Aline Emy Takiy**, Luis Elvira, Silvio César Garcia Granja, Ricardo Tokio Higuti, Claudio Kitano, Óscar Martínez-Graullera, Francisco Montero de Espinosa	***IUS3-PC-5*** **A Study in Wedge Waves with Applications in Delay-line** **Po-Hsien Tung**, Che-Hua Yang
IUS1-PC5-7 **Comb-push ultrasound shear elastography (CUSE) for detection and classification of breast lesions: preliminary in vivo study** **Mohammad Mehrmohammadi**, Pengfei Song, Shigao Chen, James F. Greenleaf, Mostafa Fatemi, Azra Alizad	***IUS1-PC6-7*** **Design of 80 MHz Linear Transducer Array for Breast Cancer Biopsy** **Thomas Cummins**, Hojong Choi, Hyung Ham Kim, K. Kirk Shung	***IUS2-PC1-6*** **Non-contact ultrasonic inspection of CFRP prepregs for aeronautical applications during lay-up fabrication.** **Maria Dolores Fariñas**, Esmeralda Cuevas, Monica Garcia Merino, Tomas Gomez Alvarez-Arenas	***IUS2-PC2-5*** **Thermal Studies of a Plate Waveguide Bundle for use in Ultrasonic Flow Metering Applications** **Michael Laws**, Sivaram Nishal Ramadas, Steve Dixon	***IUS3-PC-6*** **Writing and Reading Indentation in frequency space of acoustic resonators** **Fujio Tsuruoka**
Session IUS1-PC6. Advanced front-ends for medical imaging *Chair:* **David Vilkommerson**	***IUS1-PC6-8*** **DEVELOPMENT OF LOW-NOISE WIDEBAND RECEIVER FOR INTRAVASCULAR AND PHOTOACOUSTIC IMAGING** **Ju-Young Moon**, Hea Min Kim, Jae Hee Song, Jun Su Lee, Jin Ho Chang	***IUS2-PC1-7*** **The Acoustic Method of the Noncontact Determination of Thin Films Conductivity** **Iren Kuznetsova**, Boris Zaitsev, Vladimir Anisimkin, Andrey Teplykh, Alexander Shikhabudinov, Vladimir Kolesov, Valery Yakunin	***IUS2-PC2-6*** **Simulation and Evaluation of Fan-Shaped Beam Ultrasound Transducers for Multiphase Flow Process Tomography** **Sascha Langener**, Thomas Musch, Helmut Ermert, Michael Vogt	***IUS3-PC-7*** **Impact-absorbing effect by applying ultrasonic vibrations to high-tensile steel plate** **Atsuyuki Suzuki**, Takahiro Onitake, Kanji Ikunaka, Jiromaru Tsujino
IUS1-PC6-1 **Ultrasound Analog Front End Integrated Circuit with Digital Heterodyning for Data and Computation Rate Reduction** Ashraf Saad, **Gina Kelso**, Corey Petersen, Joshua Nekl, Daniel Rey-Losada	***Session IUS2-PC1. Materials and Defect Characterization*** *Chair:* **Edward Haeggstrom**	***IUS2-PC1-8*** **Comparison of slowness curves of Lamb wave with elastic moduli and crystal structure in silicon wafers** **Gyeongwon Yun**, Kyung-Min Kim, Yuji Roh, Youngjae Min, Jeong-Ki Lee, Young H. Kim	***Session IUS3-PC. Experimental physical acoustics*** *Chair:* **Victor Krylov**	***IUS3-PC-8*** **Noncontact flexural vibration modal testing of metallic cylinders using the electromagnetic acoustic coupling principle** **Chan Il Park**, Hongjin Kim, Yoon Young Kim, Jin Ho Lee

IUS1-PC6-2 **Single-chip Ultra High Slew-rate Pulse Generator for Ultrasound Scanner Applications** **Chin Hsia**, Yen-Chung Huang, Chih-Wen Lu	***IUS2-PC1-1*** **A method of evaluating CTE of TiO_2-SiO_2 ultra-low-expansion glasses by the ultrasonic microspectroscopy technology** **Mototaka Arakawa**, Yuji Ohashi, Jun-ichi Kushibiki	***Session IUS2-PC2. Ultrasonics in Liquids and Air*** *Chair:* **William Wright**	***IUS3-PC-1*** **Orientation control of ZnO films by highly-energetic positive ion irradiation using RF substrate bias sputtering** **Shinji Takayanagi**, Takahiko Yanagitani, Mami Matsukawa	***IUS3-PC-9*** **Ultrasonic power measurement by calorimetric method using water as heating material -Investigation on thermal effects other than ultrasound -** **Takeyoshi Uchida**, Tsuneo Kikuchi
IUS1-PC6-3 **Wideband Portable Power Amplifier Design for Very High Frequency Ultrasonic Transducers Applications** **Hayong Jung**, Hojong Choi, K. Kirk Shung	***IUS2-PC1-2*** **Ultrasonic triaxial anvil setup for measuring longitudinal and shear wave velocities of rocks under controlled pressure** **Ronnie Karlqvist**, Ilkka Lassila, Edward Hæggström, Lauri Pesonen	***IUS2-PC2-1*** **Flexural Mode Metal Cap Transducer Design for Specific Frequency Air Coupled Ultrasound Generation** **Tobias Eriksson**, Steve Dixon, Nishal Ramadas	***IUS3-PC-2*** **Piezoelectric crystal $La_3Ta_{0.5}Ga_{5.3}Al_{0.2}O_{14}$: growth, crystal structure perfection, piezoelectric and acoustic properties** **Dmitrii Roshchupkin**, Dmitrii Irzhak, Olga Ploticyna, Evgeny Emelin, Sergey Sakharov, Oleg Buzanov	***IUS3-PC-10*** **Visualization of temperature elevation in ultrasonic beam from circular piston** Jungsoon Kim, **Moojoon Kim**, Myoungseok Kim, Kanglyel Ha, Seonae Hwangbo, Mincheol Chu
IUS1-PC6-4 **Linearizer Circuit of the Power Amplifier for Very High Frequency Ultrasonic Transducers Applications** **Hojong Choi**, Hayong Jung, K. Kirk Shung	***IUS2-PC1-3*** **Gelation process and silicone hardening kinetics using dynamic acousto-elastic testing method** Chloé Trarieux, Marielle Defontaine, Hélène Moreschi, Jean-François Tranchant, **Samuel Callé**	***IUS2-PC2-2*** **Multi-Channel Indoor Wireless Data Communication Using High-k Capacitive Ultrasonic Transducers in Air** **Wentao Jiang**, William Wright	***IUS3-PC-3*** **Amplitudes of transverse waves in the acoustical birefringence in [110] Silicon single crystal** **Hye-Jeong Kim**, Seho Kwon, Young H. Kim	***IUS3-PC-11*** **Thermodynamic method for measuring the B/A nonlinear parameter under high pressure** **Piotr Kielczynski**, Marek Szalewski, Andrzej Balcerzak, Krzysztof Wieja, Aleksander Rostocki, Ryszard Siegoczynski
IUS1-PC6-5 **Bipolar Pulse Generator for Very High Frequency (> 100 MHz) Ultrasound Applications** **Min Gon Kim**, Hojong Choi, Hyung Ham Kim, K. Kirk Shung	***IUS2-PC1-4*** **Characterization of micro and nanolayers using frequency domain laser-ultrasound** **Clemens Grünsteidl**, Istvan Veres, Thomas Berer, Jürgen Roither, Todd Murray, Peter Burgholzer	***IUS2-PC2-3*** **Low Frequency Wave Propagation in Cylindrical Elasto-Viscoelastic Trilayer in the Presence of Free Gas** **Semyon Levitsky**, Rudolf Bergman	***IUS3-PC-4*** **Experimental investigation of BAW propagation in Lithium Tantalate Oxide under the influence of uniaxial pressure and dc electric field** **Arseny Telichko**, Boris Sorokin, Gennady Kvashnin	***IUS3-PC-12*** **Ultrasonic investigation of physicochemical properties of liquids under high pressure** **Piotr Kielczynski**, Marek Szalewski, Andrzej Balcerzak, Krzysztof Wieja, Aleksander Rostocki, Ryszard Siegoczynski, Stanislaw Ptasznik

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Wednesday, July 24 2013			Forum Hall
Session IUS4-PC1. Novel Resonators & Innovative Techniques *Chair:* **Gernot Fattinger**	***Session IUS4-PC2. Propagation & Materials*** *Chair:* **Maximilian Pitschi**	***IUS4-PC2-8*** **Accurate determination of thin film properties using SAW differential delay lines** **Matthias Knapp**, Gerold Grünauer, Philipp Jäger, Günter Scheinbacher, Ingo Bleyl, Leonhard Reindl	***IUS5-PC-7*** **Experimental evaluation of CMUTs with vented cavities under varying pressure** Nikhil Apte, **Kwan Kyu Park**, Butrus T. Khuri-Yakub	
IUS4-PC1-1 **Metal Contact Print lithography for Fabricating High Frequency Surface Acoustic Wave Device with Heavy Electrode Loading Effect** **Yung-Chun Lee**, Tsung-Ming Chou	***IUS4-PC2-1*** **Microwave Acoustic Properties of Diamond Single Crystal as a Substrate for High-overtone Bulk Acoustic Resonator** Boris Sorokin, Gennady Kvashnin, Sergey Burkov, Georgy Gordeev, **Arseny Telichko**, Aleksandr Volkov, Vitaly Bormashov, Mikhail Kuznetsov	***Session IUS5-PC. CMUTs*** *Chair:* **William Wright**	***IUS5-PC-8*** **Pre-Charged CMUTs with Efficient Zero-Bias Voltage Operation for Medical Applications** **Abhijeet Kshirsagar**, Alexander Sampaleanu, Roger Zemp	
IUS4-PC1-2 **Laser Induced Forward Transfer: a Novel Technique for Piezoelectric MEMS Micromachining** **Fabio Di Pietrantonio**, Domenico Cannatà, Massimiliano Benetti, Enrico Verona, Valentina Dinca, Maria Dinescu	***IUS4-PC2-2*** **Experimental and theoretical investigation of guided acoustic wave properties in in-plane c-axis ZnO films** **Shinji Takayanagi**, Abdelkrim Talbi, Olivier Bou Matar, Nicolas Tiercelin, Mami Matsukawa, Philippe Pernod, Vladimir L. Preobrazhensky	***IUS5-PC-1*** **Application of CMUT as immunoassay sensor** **Dovydas Barauskas**, Asta Makaraviciute, Almira Ramanaviciene, Darius Virzonis, Gailius Vanagas, Arunas Ramanavicius	***IUS5-PC-9*** **Traceable characterization of cMUT membrane motion** **Tor Paulin**, Anton Nolvi, Ville Heikkinen, Ivan Kassamakov, Edward Hæggström	
IUS4-PC1-3 **Improvement of Insertion Loss of Band Pass Tunable Filter using SAW Resonators and GaAs Diode Variable Capacitors** **Michio Kadota**, Yasuyuki Ida, Tetsuya Kimura, Masayoshi Esashi, Syuji Tanaka	***IUS4-PC2-3*** **Legendre and Laguerre polynomial approach for modeling of wave propagation in layered magneto-electro-elastic media** Olivier Bou Matar, **Noura Gasmi**, Huan Zhou, Marc Goueygou, Abdelkrim Talbi	***IUS5-PC-2*** **2-D Row-Column CMUT Arrays with an Open-Grid Support Structure** **Thomas Lehrmann Christiansen**, Christian Dahl-Petersen, Jørgen Arendt Jensen, Erik Vilain Thomsen	***IUS5-PC-10*** **Fabrication of CMUTs with substrate-embedded springs** Byung Chul Lee, **Amin Nikoozadeh**, Kwan-Kyu Park, Butrus T. Khuri-Yakub	

IUS4-PC1-4 **High frequency SMR-BAW resonator on AlN thin film** **Michael Dvoesherstov**, Valentine Cherednick, Sergey Bosov	***IUS4-PC2-4*** **Material Parameters of Ca3TaGa3Si2O14 Single Crystal Revisited** **Andrey Sotnikov**, Hagen Schmidt, Manfred Weihnacht, Oleg Buzanov, Sergey Sakharov	***IUS5-PC-3*** **Interdigitated CMUT for Low Intensity Focused Ultrasound Delivery of Drugs** **Paul Cristman**, Kwan-Kyu Park, Michael Mandella, Olav Solgaard, Christopher Contag, B. (Pierre) T. Khuri-Yakub	***IUS5-PC-11*** **Void-Free Direct Bonding of CMUT Arrays with Single Crystalline Plates and Pull-In Isolation** **Thomas Lehrmann Christiansen**, Jørgen Arendt Jensen, Erik Vilain Thomsen	
IUS4-PC1-5 **Performance of BAW Resonators at Cryogenic Temperatures** **Eduard Rocas**, Carlos Collado, Jordi Mateu, Alberto Hueltes, Jordi Verdú, James C. Booth, Robert Aigner	***IUS4-PC2-5*** **Longitudinal-Type Leaky Surface Acoustic Wave on $LiNbO_3$ with High-Velocity Thin Film** **Fumiya Matsukura**, Masato Uematsu, Keiko Hosaka, Shoji Kakio	***IUS5-PC-4*** **Characterization of a mid-volume fabrication process for CMUT development** **Anartz Unamuno**, Martin Friedrichs, Werner Jeroch, Heinrich Grüger		
IUS4-PC1-6 **GPS/GLONASS Filter using the Stoneley Wave for High Reliability Applications** **Masakazu Mimura**, Mari Saji, Kentaro Funahashi, Takashi Yamane, Daisuke Tamazaki, Norio Taniguchi, Hajime Kando	***IUS4-PC2-6*** **Evaluation of Piezoelectric Ta_2O_5 Thin Films Deposited on Sapphire Substrates** **Shunsuke Iwamoto**, Ryosuke Saigusa, Shoji Kakio	***IUS5-PC-5*** **A Tethered Front-Plate Electrode CMUT for Broadband Air-Coupled Ultrasound** **William Wright**, Sean McSweeney		
IUS4-PC1-7 **High Frequency Resonators with wide bandwidth using SH0 Mode Plate Wave in LiNbO3 Thin Plate** **Michio Kadota**, Yasuhiro Kuratani, Tetsuya Kimura, Masayoshi Esashi, Syuji Tanaka	***IUS4-PC2-7*** **Derivation of accurate tensor data of materials in SAW devices by solving a parameter identification problem using an enhanced eigenvalue analysis of an infinite array model** **Gerold Grünauer**, Markus Mayer, Matthias Knapp, Philipp Jaeger, Thomas Ebner, Karl Wagner, Hans Josef Pesch	***IUS5-PC-6*** **Characterization and operation of different CMUT membranes for gas-flow sensing applications** **Alessandro Caspani**, Giacomo Langfelder, Paolo Minotti, Antonio Longoni, Jaakko Saarilahti		

Thursday, July 25 2013 - IUS

08:30 am -10:00 am	Oral --- Thursday, July 25 2013					
	Session IUS1-K1. Blood flow and vector velocity imaging applications *Chair:* **Alfred Yu**	***Session IUS1-K2. Elastography of blood and vessels*** *Chair:* **Charles Cain**	***Session IUS1-K3. Metrology and sonoporation*** *Chair:* **Jeffrey A. Ketterling**	***Session IUS2-K. Arrays and Wave Propagation*** *Chair:* **Edward Haeggstrom**	***Session IUS5-K. Piezoelectric Ultrasonic Transducers and Applications*** *Chair:* **Jean-Francois Saillant**	***Session IUS4-K. Emerging Technologies*** *Chair:* **Jan H Kuypers**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
08:30 am	***IUS1-K1-1*** **In vivo transthoracic ultrafast Doppler imaging of Left intraventricular blood flow pattern** **Bruno-Felix osmanski**, Mathieu Pernot, Mathias Fink, Emmanuel Messas, Mickael Tanter	***IUS1-K2-1*** **Validation of 2D Ultrasound Elastography in Large Vessels** **Richard G.P. Lopata**, Mathijs F.J. Peters, Frans N. van de Vosse, Marcel C.M. Rutten	***IUS1-K3-1*** **Application of Complex Deconvolution to Correct for Non-Uniform Hydrophone Sensitivity for the Measurement of Acoustic Output Parameters** **Keith Wear**, Paul Gammell, Subha Maruvada, Yunbo Liu, Gerald Harris	***IUS2-K-1*** **Automatic Ultrasonic Robotic Array** **Gordon Dobie**, Walter Galbraith, Charles MacLeod, Rahul Summan, Gareth Pierce, Anthony Gachagan	***IUS5-K-1*** **Evaluation of the Pyroelectric Response of Embedded Piezoelectrics by Means of a Nyquist Plot** **Gunnar Suchaneck**, Agnes Eydam, Gerald Gerlach	***IUS4-K-1*** **Ultra-high Q.f product laterally-coupled AlN/Silicon and AlN/Sapphire High Overtone Bulk Acoustic Wave Resonators** **Alexandre Reinhardt**, Marie Thérèse Delaye, Julie Abergel, Veronika Kovacova, Marjolaine Allain, Laurence Andreutti, Denis Mercier, Jeremy Georges, Pierre Patrick Lassagne, Emmanuel Defaÿ, Nicolas Chretien, Thomas Baron, Gilles Martin, Eric Lebrasseur, Sylvain Ballandras, Luc Chommeloux, Jean-Marc Lesage
08:45 am	***IUS1-K1-2*** **Intraoperative vector flow imaging of the heart** **Kristoffer Hansen**, Mads Pedersen, Hasse Møller-Sørensen, Jesper Kjærgaard, Jens Christian Nilsson, Jens Lund, Jørgen Jensen, Michael Nielsen	***IUS1-K2-2*** **Speckle Tracking Strain Estimation of a Carotid Artery Plaque Phantom - Validation via Sonomicrometry** **Erik Widman**, Kenneth Caidahl, Jan D'hooge, Brecht Heyde, Matilda Larsson	***IUS1-K3-2*** **Quantitative Measurement of Focused Ultrasound Pressure Field by Background-subtracted Shadowgraph** **Shin Yoshizawa**, Ryo Miyasaka, Mohd Syahid, Shin-ichiro Umemura	***IUS2-K-2*** **Tomographic Array Design for Online, Non-invasive, Non-intrusive, Measurement of Magnox Slurry during Nuclear Decommissioning** **David Matthew Joseph Cowell**, Peter Raymond Smith, Steven Freear	***IUS5-K-2*** **2D Array Transducer with a Conductive Backing** **Jeongdong Woo**, Wonseok Lee, Sanggon Lee, Hyungkeun Lee, Byungkook Bae, Eunhee Shin, Sunghag Kim, Yongrae Roh	***IUS4-K-2 (Invited)*** **Light-driven nano-machines: from ultra-cold resonators to opto-mechanical memories** **Wolfram Pernice**

Thursday, July 25 2013 - IUS

09:00 am	***IUS1-K1-3*** **Getting intraventricular velocity vector fields from color Doppler: a simplified effective method** **Damien Garcia**, Louis Le Tarnec, Jean Sharestan, Dominique Auger, François Tournoux	***IUS1-K2-3*** **A fast 2D tissue motion estimator based on the phase of the intensity enables visualization of the propagation of the longitudinal movement in the carotid artery wall** **Tobias Nilsson**, Åsa Rydén Ahlgren, John Albinsson, Simon Segstedt, Jan Nilsson, Tomas Jansson, Hans W Persson, Magnus Cinthio	***IUS1-K3-3*** **Improved Finite Amplitude Insertion Substitution technique for acoustic nonlinearity parameter measurement** **Bajram Zeqiri**, Lise Retat, Pierre Gelat, Gail ter Haar	***IUS2-K-3*** **Investigation of the Synthetic Aperture Focusing Technique resolution for heavy rotor forging ultrasonic inspection** **Karl T. Fendt**, Hubert Mooshofer, Stefan J. Rupitsch, Reinhard Lerch, Helmut Ermert	***IUS5-K-3*** **Design and Fabrication of a New Multi-Active Layered Transducer with a Novel Single Copper Layered FPCB** **Eunhee Shin**, Susung Lee, Sangseok Lee, Jongkil Kim, Yongrae Roh	
09:15 am	***IUS1-K1-4*** **The computer simulation of microscopic interactions of RBC aggregation based on the depletion model under pulsatile flow** **Qi Kong**, Ying Li, Tae-Hoon Bok, Kweon-Ho Nam, Dong-Guk Paeng	***IUS1-K2-4*** **Measurement of longitudinal and circumferential waves in tubes and artery excited with ultrasound radiation force** **Matthew Urban**, Ivan Nenadic, Cristina Pislaru, James Greenleaf	***IUS1-K3-4*** **Real-Time Imaging of Plasma Membrane Dynamics in Sonoporation: From Perforation to Recovery** **Yaxin Hu**, Jennifer M. F. Wan, Alfred C. H. Yu	***IUS2-K-4*** **Discussion on the crossings and maxima of the Lamb waves** **Istvan A Veres**, Thomas Berer, Clemens Grünsteidl, Peter Burgholzer	***IUS5-K-4*** **Parabolic transducer array for ultrasonic energy harvesting inside an MRI machine.** **Victor Klymko**, Maurice Roes, Jeroen van Duivenbode, Elena Lomonova	***IUS4-K-3*** **Modeling of Inter-Digitated Transducer for High-Order Contour Mode Resonators** **Renyuan Wang**, Sunil A. Bhave, Kushal Bhattacharjee
09:30 am	***IUS1-K1-5*** **Optimization of transverse oscillating fields for vector velocity estimation with convex arrays** **Jørgen Arendt Jensen**	***IUS1-K2-5*** **A Harmonic Tracking Method for Improved Visualization of Arterial Structures with Acoustic Radiation Force Impulse Imaging** **Joshua Doherty**, Jeremy Dahl, Jason Allen, Katherine Ham, Gregg Trahey	***IUS1-K3-5*** **Relation between cell membrane tension and repair of membrane damaged during sonoporation** **Yuto TANAKA**, Nobuki KUDO	***IUS2-K-5*** **Dipole and Monopole actuator for underground application** **Abderrhamane ounadjela**, Henri Pierre Valero, Jean christophe Auchere	***IUS5-K-5*** **Wide Aperture Convex Array Transducer with PMN-PT Piezoelectric Single Crystals** **Heewon Kim**, Susung Lee, Sangwoong Lee, Boyeon Cho, Nelson Oliver, Wonho Noh	***IUS4-K-4*** **Oscillator-based strain gauges employing surface acoustic wave resonators for wireless sensor network** **Tomokatsu Konno**, Motoaki Hara, Hiroki Kuwano
09:45 am	***IUS1-K1-6*** **Vascular Resistivity Imaging using Ultrafast Doppler: application to the 2D cerebral mapping of preterm infant vascular indexes** **Charlie Demene**, Mathieu Pernot, Valerie Biran, Marianne Alison, Mathias Fink, Olivier Baud, Mickael Tanter	***IUS1-K2-6*** **Cross Validation of Supersonic Shear Imaging (SSI) with Classical Rheometry during Blood Coagulation over a very large Bandwidth** **Miguel Bernal**, Jean-Luc Gennisson, Patrice Flaud, Mathias Fink, Mickael Tanter	***IUS1-K3-6*** **Sonoporation-Induced Endoplasmic Reticulum Stress: Signaling Pathway Analysis** Wenjing Zhong, Xian Chen, Pingping Jiang, Jennifer M. F. Wan, Peng Qin, **Alfred C. H. Yu**	***IUS2-K-6*** **Ultrasonic measurement of micrometric wall-thickness loss due to corrosion inside pipes** **Julio Cezar Adamowski**, Nicolas Perez, Flavio Buiochi, Carlos Patusco, Claudio Camerini	***IUS5-K-6*** **Experimental and Theoretical Evaluation of a Low-Cost, 15 MHz Fingerprint Piezo-Composite for Ultrasonic Imaging** **Holly Lay**, Devin Delong, Joseph Zeichman, Andrea Casanova, Yanli Xie, Rainer Schmitt	***IUS4-K-5*** **Chip Scale Sonic Communication Using AlN Transducers** **Jason Hoople**, Justin Kuo, Serhan Ardanuç, Amit Lal

10:00 am – 10:30 am	Refreshments					
10:30 am -12:00 pm	**Oral --- Thursday, July 25 2013**					
	Session IUS1-L1. Brain imaging *Chair:* **Wilko Wilkening**	***Session IUS1-L2. Therapy monitoring and evaluation*** *Chair:* **Jean-Yves Chapelon**	***Session IUS1-L3. Bone characterization*** *Chair:* **Pascal Laugier**	***Session IUS2-L. Propagation in Liquid and Polymers*** *Chair:* **Michal Bezdek**	***Session IUS3-L. Acoustic tweezers 1*** *Chair:* **Christine Demore**	***Session IUS4-L. Microacoustic Sensors*** *Chair:* **Clemens Ruppel**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
10:30 am	***IUS1-L1-1 (Invited)*** **Functional Ultrasound Imaging of Brain Activity** **Mickael Tanter**	***IUS1-L2-1*** **Acoustic Angiography of Tumor Vascular Perfusion Following High Intensity Focused Ultrasound Ablation** **Linsey Phillips**, K. Heath Martin, Ryan Gessner, Paul Dayton	***IUS1-L3-1*** **Characterization of circumferential guided waves in shells with complex cross-sections: application to a bone-mimicking elliptical phantom** **Pierre Nauleau**, Mathieu Chekroun, Quentin Grimal, Jean-Gabriel Minonzio, Claire Prada, Pascal Laugier	***IUS2-L-1*** **Temperature uniformity of microdroplet heated by Rayleigh Surface Acoustic Wave in view of biological reaction** **Thibaut Roux-Marchand**, Denis Beyssen, Frederic Sarry	***IUS3-L-1*** **Study the deformability of red blood cell by a single-beam acoustic tweezer** **Ying Li**, Kwok Ho Lam, Changyang Li, Rose Wenby, Herbert J. Meiselman, K. Kirk Shung	***IUS4-L-1*** **Infra-Red Thermography for spatially resolved measurements of the temperature distribution on the Acoustic Wave devices** **Thibaut Roux-Marchand**, omar Elmazria, Frederic Sarry
10:45 am		***IUS1-L2-2*** **Analysis of Relationship between Thermal Dose and Mapped Decorrelation of RF Echoes Induced by High-Intensity Focused Ultrasound** **Ryo Takagi**, Ryo Matsuzawa, Takashi Shishitani, Shin Yoshizawa, Shin-ichiro Umemura	***IUS1-L3-2*** **Incorporation of explicit transmission coefficients in the wave propagation model enhances the results of Bayesian analysis of fast and slow wave propagation in cancellous bone** Amber Nelson, Mark Holland, Jonathan Katz, **James Miller**	***IUS2-L-2*** **Impact of transducers configuration in a pilot sonoreactor used for nanocellulose production by ultrasound-assisted TEMPO oxidation** **Eric Loranger**, André-Olivier Piché, Claude Daneault	***IUS3-L-2*** **Manipulation of Microspheres and Microbubbles in an Octagonal Sonotweezers** **Anne Bernassau**, Charles Courtney, James Beeley, Bruce Drinkwater, David Cumming	***IUS4-L-2*** **SAW Strain Sensors - High Precision Strain Sensitivity Investigation on Chip-Level** Jochen Hempel, Roderich Zeiser, Dominik Finke, Michael Berndt, Jürgen Wilde, **Leonhard Reindl**
11:00 am	***IUS1-L1-2*** **Automatic Mouse Embryo Brain Ventricle Segmentation from 3D 40-MHz Ultrasound Data** Jen-Wei Kuo, Yao Wang, Orlando Aristizabal, Jeffrey A. Ketterling, **Jonathan Mamou**	***IUS1-L2-3*** **Quantitative Ultrasound Assessment of Ultrasound Therapy in Rodent Mammary Tumors: In Vivo and Ex Vivo Results** **Jeremy Kemmerer**, Goutam Ghoshal, Chandra Karunakaran, Michael Oelze	***IUS1-L3-3*** **Estimation of fast and slow wave properties in cancellous bone using Prony's method and curve fitting** **Keith Wear**	***IUS2-L-3*** **Ultrasonic studies of polymer composites with inorganic nanotubes** **Vytautas Samulionis**, Juras Banys, Šarunas Svirskas, Antoni Sanchez-Ferrer, Raffaele Mezzenga, Tony McNally, Beatriz Mayoral	***IUS3-L-3*** **Acoustic tweezer with a LiNbO3 200 MHz single element transducer for membrane manipulation of cancer cells** **Jae Youn Hwang**, Changyang Lee, Kwok Ho Lam, Hyung Ham Kim, Jungwoo Lee, K. Kirk Shung	***IUS4-L-3*** **Investigation of Delay Path Modifications of SAW Sensors** Mandek Richardson, Sina Koochakzadeh, Kamlesh Suthar, Subramanian K. R. S. Sankaranarayanan, **Venkat Bhethanabotla**

11:15 am	***IUS1-L1-3*** **Functional Ultrasound Imaging of the Brain Resting State** **Bruno-Felix Osmanski**, Sophie Pezet, mathias Fink, Zsolt Lenkei, Mickael Tanter	***IUS1-L2-4*** **Real-time 2-D elasticity imaging and monitoring of HIFU treatment using Harmonic Motion Imaging for focused Ultrasound (HMIFU)** Gary Hou, Jean Provost, **Julien Grondin**, Shutao Wang, Fabrice Marquet, Elisa Konofagou	***IUS1-L3-4*** **Two wave phenomenon in a child radius model** **Fuminori Fujita**, Katsunori Mizuno, Isao Mano, Mami Matsukawa	***IUS2-L-4*** **Multiple roundtrip SH-SAW liquid sensor using c-axis parallel oriented ZnO films on silica glass pipe** **Yoshiya Kato**, Takahiko Yanagitani, Kosuke Imamura, Shinji Takayanagi, Mami Matsukawa	***IUS3-L-4*** **Threshold detection for surface mode of an attached bubble by using laser Doppler vibrometer** **Yukihiro Kagawa**, Shunichi Morioka, Kenji Yoshida, Daisuke Koyama, Yoshiaki Watanabe	***IUS4-L-4*** **Detection of antigen-antibody reaction by thickness-shear mode resonators consisting of c-axis parallel oriented ZnO films** **Kenji Yoshida**, Takahiko Yanagitani, Takayuki Kawamoto, Sho Sasaki, Masatoshi Oba, Yoshiya Kato, Shinji Takayanagi, Yoshiaki Watanabe
11:30 am	***IUS1-L1-4*** **Rapid *in vivo* Imaging of Amyloid Plaques using Ultrasound-Induced Blood Brain Barrier Opening and MRI Gd-Staining** Mathieu Santin, Thomas Debeir, **Lori Bridal**, Thomas Rooney, Marc Dhenain	***IUS1-L2-5*** **Adaptive motion compensation for in-vivo ultrasound temperature estimation** **Mahdi Bayat**, John R. Ballard, Emad S. Ebbini	***IUS1-L3-5*** **Velocities, attenuations and insights on propagation paths for the fast and slow waves in numerical anisotropic porous media** **Fabien Mézière**, Marie Muller, Emmanuel Bossy, Arnaud Derode	***IUS2-L-5*** **Viscoelastic behavior monitoring of curing geopolymers by ultrasonic rheology** **Julien Rouyer**, Arnaud Poulesquen, Fabien Frizon	***IUS3-L-5 (Invited)*** **The physical acoustics of acoustic tweezers** **Bruce Drinkwater**, Paul Wilcox, Charles Courtney, Alon Grinenko, Sandy Cochran, Christine Demore, David Cumming, Martyn Hill	***IUS4-L-5*** **Fast and sensitive H_2 detection by ball surface acoustic wave (SAW) sensor with porous Pd-Pt alloy film** **Toshihiro Tsuji**, Ryosuke Mihara, Tomohiro Saito, Satoshi Hagihara, Toru Oizumi, Nobuo Takeda, Tsuneo Ohgi, Takayuki Yanagisawa, Shingo Akao, Noritaka Nakaso, Kazushi Yamanaka
11:45 am	***IUS1-L1-5*** **High-Frequency Ultrasound for In Vivo, 3D Imaging and Analysis of Mouse Embryo Brain Development** Orlando Aristizabal, Jonathan Mamou, Daniel H. Turnbull,**Jeffrey A. Ketterling**	***IUS1-L2-6*** **Localized Motion Imaging for Coagulation Monitoring using Acoustic Radiation Force** Ryosuke Aoyagi,**Takashi Azuma**, Hirofumi Nakamura, Keisuke Fujiwara, Hideki Takeuchi, Kazunori Itani, Kiyoshi Yoshinaka, Akira Sasaki, Shu Takagi, Yoichiro Matsumoto	***IUS1-L3-6*** **A New Ultrasonic Method for Lumbar Spine Densitometry** **Francesco Conversano**, Ernesto Casciaro, Roberto Franchini, Giulia Soloperto, Antonio Greco, Eugenio Quarta, Laura Quarta, Maurizio Muratore, Sergio Casciaro	***IUS2-L-6*** **Statistical signal processing for ultrasonic particle characterization** **Sebastian Wöckel**, Robert Weser, Ulrike Hempel, Benno Wessely		***IUS4-L-6*** **Experimental investigation of a novel SAW strain sensor with inbuilt temperature measurement capability** **Alice Fischerauer**, Christian Schwarzmueller, Gerhard Fischerauer

Thursday, July 25 2013 - IUS

12:00 pm – 01:00 pm	**Lunch Break**					
01:00 pm - 2:00 pm	**Poster Session and Student Paper Competition (SPC)**					
02:00 pm -03:30 pm	**Oral --- Thursday, July 25 2013**					
	Session IUS1-M1. Histotripsy and cavitation *Chair:* **Ralf Seip**	***Session IUS1-M2. Targeted contrast agents*** *Chair:* **Lori Bridal**	***Session IUS1-M3. Photoacoustic imaging systems and signal processing*** *Chair:* **Emmanuel Bossy**	***Session IUS5-M. CMUTs*** *Chair:* **Omer Oralkan**	***Session IUS3-M. Acoustic tweezers 2*** *Chair:* **Bruce Drinkwater**	***Session IUS4-M. Advanced Modeling and Design*** *Chair:* **Ken-ya Hashimoto**
	Congress Hall	**Meeting Hall 4**	**Meeting Hall 5**	**North Hall**	**Terrace 1**	**Terrace 2**
02:00 pm	***IUS1-M1-1*** **Active Removal of Residual Bubble Nuclei Following a Cavitation Event** **Alexander P. Duryea**, Charles A. Cain, William W. Roberts, Hedieh A. Tamaddoni, Timothy L. Hall	***IUS1-M2-1*** **Quantification of targeted microbubbles in contrast enhanced ultrasound** **Verya Daeichin**, Zeynettin Akkus, Klazina Kooiman, Johan G. Bosch, Andrew Needles, Antonius F.W. van der Steen, Nico de Jong	***IUS1-M3-1*** **Performance Characterisation of a new Clinical Spectroscopic Epiphotoacoustic Scanner** **Erwin Alles**, David Harris-Birtill, Michael Jaeger, Jeffrey Bamber	***IUS5-M-1 (Invited)*** **CMUTs development progress review for medical applications** **Mathieu Legros**, Cyril Meynier, Nicolas Sénégond, Pascal Chatain, David Voisin	***IUS3-M-1*** **Independent manipulation of multiple microparticles using circular ultrasonic arrays** **Charles Courtney**, Christine Demore, Hongxiao Wu, Paul Wilcox, Alon Grinenko, Chun-Kiat Ong, Sandy Cochran, Bruce Drinkwater	***IUS4-M-1*** **Analysis of Rayleigh Wave Radiations from Leaky SAW Resonators** **Shogo Inoue**, Kentaro Nakamura, Hidetaro Nakazawa, Jun Tsutsumi, Masanori Ueda, Yoshio Satoh
02:15 pm	***IUS1-M1-2*** **In-Vivo Transcostal Histotripsy Therapy without Aberration Correction** Yohan Kim, **Eli Vlaisavljevich**, Gabe Owens, Steven Allen, Charles Cain, Zhen Xu	***IUS1-M2-2*** **Resonant frequency shift of quartz crystal microbalance caused by the specific adsorption of targeted microbubbles** **Ryosuke Shimoya**, Takashige Muramoto, Kenji Yoshida, Yoshiaki Watanabe	***IUS1-M3-2*** **Reduction of clutter in medical epiphotoacoustic images using acoustic radiation force-based localized vibration tagging (ARF-LOVIT)** Michael Jaeger, Martin Frenz, **Jeffrey Bamber**		***IUS3-M-2*** **Microbubble Manipulation Using Ultrasound Standing Wave between Two Sets of Parallel Transducers** **Kazuhito Inoue**, Hironobu Kaji, Rei Masuda, Hiroyuki Ushijima, Takashi Azuma, Kiyoshi Yoshinaka, Mitsuhisa Ichiyanagi, Shu Takagi, Yoichiro Matsumoto	***IUS4-M-2*** **Impact of Surface Periodic Grating on FBAR Structures to Spurious Transverse Resonances** **Jiansong Liu**, Tatsuya Omori, Changjun Ahn, Ken-ya Hashimoto

Thursday, July 25 2013 - IUS

02:30 pm	***IUS1-M1-3*** **Feasibility of non-thermal brain ablation for noninvasive surgery in a large animal model under passive cavitation monitoring** **Costas Arvanitis**, Natalia Vykhodtseva, Margaret Livingstone, Nathan McDannold	***IUS1-M2-3*** **Decorrelation-based Adherent Microbubble Identification as a Faster Alternative to Singular Spectrum-based Targeted Molecular Imaging (SiSTM) of Large Blood Vessels** **Shiying Wang**, F. William Mauldin, Jr., John A. Hossack	***IUS1-M3-3*** **Spectrum analysis of photoacoustic signals for characterizing tissue microstructure** **Parag V. Chitnis**, Jonathan Mamou, Ashwin Sampathkumar, Ernest J. Feleppa	***IUS5-M-2*** **Development of a miniaturized 1D linear-array cMUTs for interstitial Ultrasound therapy** **William Apoutou N'Djin**, Michael Canney, Cyril Meynier, Françoise Chavrier, Cyril Lafon, An Nguyen-Dinh, Alexandre Carpentier, Jean-Yves Chapelon	***IUS3-M-3*** **Breast Cancer Cell Manipulation with a Highly Focused High Frequency Ultrasonic Transducer** **Hyung Ham Kim**, Kwok Ho Lam, Changyang Lee, Jae Youn Hwang, Jungwoo Lee, K. Kirk Shung	***IUS4-M-3*** **Analysis of Heat Dissipation Improvement using the Bonded Wafer in the CSSD Structure** **Takayuki Suzuki**, Toshio Nishizawa, Osamu Kawachi
02:45 pm	***IUS1-M1-4*** **Enhanced *In Vivo* and *In Vitro* High Intensity Focused Ultrasound Ablation via Phase-shift Nanodroplets Compared to Microbubbles** **Linsey C. Phillips**, Connor Puett, Paul S. Sheeran, Kelsie F. Timbie, Richard J. Price, G. Wilson Miller, Paul A. Dayton	***IUS1-M2-4*** **Quantitative Functional Assessment of Tumor Microenvironment using Contrast Enhanced Ultrasound and Photoacoustic Imaging** **Melissa Yin**, Minalini Lakshman, F. Stuart Foster	***IUS1-M3-4*** **Photoacoustic Coded Excitation using Pulse Position Modulation** **Martin F. Beckmann**, Georg Schmitz	***IUS5-M-3*** **Design, Modeling and Characterization of a 35 MHz Linear CMUT Array** **Toby Xu**, Coskun Tekes, Sarp Satir, Evren Arkan, F. Levent Degertekin	***IUS3-M-4*** **Thick Film PZT Transducer Arrays for Particle Manipulation** **Yongqiang Qiu**, Sylvia Gebhardt, Han Wang, Aleksandrs Bolhovitins, Christine Démoré, Andreas Schönecker, Sandy Cochran	***IUS4-M-4*** **Rigorous COM and P-matrix approaches to simulation of third-order intermodulation distortion and triple beat in SAW filters** **Markus Mayer**, Andreas Mayer, Elena Mayer, Werner Ruile, john johnson, Ingo Bleyl, Karl Wagner
03:00 pm	***IUS1-M1-5*** **Ultrafast monitoring of liquid droplet vaporization** **Claudia Errico**, Olivier Couture, Alice Bretagne, Alan Urban, Patrick Tabeling, Mickael Tanter	***IUS1-M2-5*** **Cell Sorting Using Targeted Biotinylated Albumin Microbubbles** **Yu-Ren Liou**, Yu-Hsin Wang, Pai-Chi Li	***IUS1-M3-5*** **Photoacoustic Flow Measurement with Ultra-High Temporal Resolution by Coded Excitation** **Haichong Zhang**, Kengo Kondo, Makoto Yamakawa, Tsuyoshi Shiina	***IUS5-M-4*** **Multi-Frequency CMUT Arrays for Imaging-Therapy Applications** **Abhijeet Kshirsagar**, Alexander Sampaleanu, Walied Moussa, Roger Zemp	***IUS3-M-5*** **A study of nanoparticle manipulation using ultrasonic standing waves** **Paul van Neer**, Armin Rasidovic, Arno Volker	***IUS4-M-5*** **A Mixed PML/FEA Method for Realistic SAW Resonators Design and Understanding.** **Karim Dbich**, Thierry Laroche, William Daniau, Sylvain Ballandras, Karl Wagner, Markus Mayer
03:15 pm	***IUS1-M1-6*** **Nanodroplet-Mediated Ultrasound Therapy for Targeted Cell Ablation** **Eli Vlaisavljevich**, Yasemin Durmaz, Adam Maxwell, Mohamed El-Sayed, Zhen Xu	***IUS1-M2-6*** **Vaporization phenomena for ultrasound phase change nanodroplets assessed via high speed optical microscopy** **Paul S. Sheeran**, Terry O. Matsunaga, Paul A. Dayton	***IUS1-M3-6*** **Dependence of photoacoustic amplitude-temperature curves with the absorbers and illumination conditions** **Olivier Simandoux**, Amaury Prost, Emmanuel Bossy	***IUS5-M-5*** **Full Synthetic Aperture 3D Ultrasound Imaging Schemes with Top Orthogonal to Bottom Electrode (TOBE) 2D CMUT Arrays** **Roger Zemp**, Alexander Sampaleanu	***IUS3-M-6*** **Acoustic radiation force on cylindrical particles near subwavelength slits** **Chen Wang**, Feiyan Cai, Weijia Su, Hairong Zheng	***IUS4-M-6*** **Paraxial RF Acoustics: Simple and Exact Description of Laser-Beam-Like Lamb and Rayleigh Waves by the Complex-Source-Point Method** **Matt Eichenfield**

Thursday, July 25 2013 - IUS

03:30 pm – 04:30 pm	**Poster Session and Student Paper Competition (SPC) and Refreshments**
04:30 pm – 06:00 pm	**Plenary Session IV and Roundtable Discussion** **Session Chair; Ahmad Safari, *Rutgers University*** **IFCS-EFTF Plenary talk: Patrick Gill, National Physical Laboratory, UK, Optical Clocks - Way ahead of their Time?** **ISAF-PFM Plenary talk: Andreas Schoenecker, *Fraunhofer IKTS, Germany,* Smart solutions for a sustainable future – advances in smart materials, production technologies and applications** **IUS: Roman Maev, *University of Windsor, Ontario, Canad*a, New Generation of High Resolution Ultrasonic Imaging Technology for Material Characterization and NDT in Advanced Automotive Manufacturing** **Congress Hall**

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Thursday, July 25 2013			Forum Hall
Session IUS1-PD1. New imaging methodologies and high frequency imaging *Chair:* **Michalakis Averkiou**	***IUS1-PD1-8*** **In vivo analysis of adult zebrafish ventricular functions by high frequency ultrasound tissue Doppler imaging during heart regeneration phase** **Ta-Han Su**, Ting-Yu Liu, Chih-Chung Huang	***Session IUS1-PD3. Medical system design*** *Chair:* **Andrzej Nowicki**	***IUS1-PD3-8*** **Cumulative method of image reconstruction in synthetic aperture. Theory and experimental results** Janusz Wojcik, Ihor Trots, Andrzej Nowicki, **Marcin Lewandowski**	***IUS1-PD4-6*** **Photo-Acoustic Phase-Delayed Excitation of Guided Waves in Coated Bone Phantoms** **Petro Moilanen**, Ari Salmi, Pasi Karppinen, Vantte Kilappa, Zuomin Zhao, Risto Myllylä, Edward Hæggström, Jussi Timonen
IUS1-PD1-1 **Electromechanical Wave Imaging of Atrial Fibrillation in Humans: A Feasibility Study** **Alexandre Costet**, Jonathan Lu, Elisa Konofagou	***Session IUS1-PD2. New applications of vector velocity imaging*** *Chair:* **Abigail Swillens**	***IUS1-PD3-1*** **A Modulated Excitation Imaging System for Micro-Ultrasound** **Weibao Qiu**, Yanyan Yu, Fu Keung Tsang, Ming Qian, Hairong Zheng, Lei Sun	***IUS1-PD3-9*** **Optimization of a Magnetic Linear Transducer Actuator Using Computational Fluid Dynamics** **John Pitre Jr.**, Grant Kruger, Leo Koziol, Alan Vollmer, William Weitzel, Joseph Bull	***IUS1-PD4-7*** **Finite difference elastodynamic code and semi-analytic diffraction coupling: an efficient approach to simulate in-vivo ultrasonic inspection of bone** Didier Cassereau, **Pierre Nauleau**, Aniss Bendjoudi, Emmanuel Bossy, Jean-Gabriel Minonzio, Pascal Laugier, Quentin Grimal
IUS1-PD1-2 **Harmonic generation with a dual frequency pulse** **Christina Keravnou**, Michalakis Averkiou	***IUS1-PD2-1*** **High-speed vector motion imaging with diverging circular waves: *in vitro* study using a spinning disc phantom** **Daniel Posada**, Shahrokh Shahriari, Boris Chayer, Guy Cloutier, Hervé Liebgott, Damien Garcia	***IUS1-PD3-2*** **A Novel High-frequency Endoscopic Ultrasound System for Colorectal Cancer Diagnosis** **Cheng LIU**, Weibao QIU, Yan CHEN, Yanyan YU, Jiyan DAI, Lei SUN	***Session IUS1-PD4. Bone characterization*** *Chair:* **Keith Wear**	***IUS1-PD4-8*** **Simultaneous Assessment of Bone Thickness and Velocity for Ultrasonic Computed Tomography Using Transmission-Echo Method** Rui Zheng, **Philippe LASAYGUES**
IUS1-PD1-3 **Real-time pulse compression imaging on base-band data** **Alessandro Ramalli**, Francesco Guidi, Enrico Boni, Piero Tortoli	***IUS1-PD2-2*** **Non-invasive Measurement of Pressure Gradients in Pulsatile Flow using Ultrasound** **Jacob Bjerring Olesen**, Marie Sand Traberg, Michael Johannes Pihl, Jørgen Arendt Jensen	***IUS1-PD3-3*** **Implementation of a Novel High Frequency Ultrasound Device for Guiding Epidural Anesthesia-In Vivo Animal Study** **Po-Yang Lee**, Chih-Chung Huang, Huihua K. Chiang	***IUS1-PD4-1*** **Estimation of Wave Propagation inside Human Body while Walking and Running - Measurement of Vibration on Body Surface and 3-D Simulation** **Yoshiki Nagatani**, Isao Mano, Mami Matsukawa	***Session IUS1-PD5. Therapy II*** *Chair:* **Emad Ebbini**

IUS1-PD1-4 **Automated Counting of Venous Gas Emboli in Post-SCUBA Dive Echocardiography** **Virginie Papadopoulou ***, Joe How Hui *, Costantino Balestra, Walter Hemelryck, Peter Germonpre, Robert J. Eckersley, Meng-Xing Tang	***IUS1-PD2-3*** **Vector Volume Flow in Arteriovenous Fistulas** **Peter Møller Hansen**, Jacob Bjerring Olesen, Michael Johannes Pihl, Søren Heerwagen, Mads Møller Pedersen, Marianne Rix, Lars Lönn, Jørgen Arendt Jensen, Michael Bachmann Nielsen	***IUS1-PD3-4*** **Ultrasonically Marked Instruments for Ultrasound-Guided Interventions** Jay Mung, **Francois Vignon**, Ramon Erkamp, Doug Stanton, Ameet Jain	***IUS1-PD4-2*** **Effect of collagen crosslinks on wave velocity in bone measured by a micro-Brillouin scattering technique** **Ryo Tsubota**, Shinya Murata, Mami Matsukawa, Mitsuru Saito, Keishi Marumo, Kazufumi Yamamoto	***IUS1-PD5-1*** **Contrast-Enhanced Ultrasound Imaging for the Detection of Transient Dynamics of Blood-Brain Barrier Opening Induced by Focused Ultrasound** **Ching-Hsiang Fan**, Wun-Hao Lin, Chien-Yu Ting, Wen-Yen Chai, Hao-Li Liu, Tzu-Chen Yen, Chih-Kuang Yeh
IUS1-PD1-5 **Phase aberration effects on beam shape evaluated with particle motion in an elastic phantom** **Sara Aristizabal**, Carolina Amador, James F Greenleaf, Matthew W. Urban	***IUS1-PD2-4*** **Speckle-Enhanced Cardiac Blood Flow Imaging with High Frame Rate Ultrasound** **Hiroki Takahashi**, Hideyuki Hasegawa, Hiroshi Kanai	***IUS1-PD3-5*** **GPU-Based Real-Time Imaging Software Suite for Medical Ultrasound** Jung Woo Choe, **Amin Nikoozadeh**, Ömer Oralkan, Butrus Khuri-Yakub	***IUS1-PD4-3*** **A novel procedure using multi-modal axial transmission for the characterization of elastic and geometrical properties of cortical bone** Josquin Foiret, **Jean-Gabriel Minonzio**, Pascal Laugier, Maryline Talmant	***IUS1-PD5-2*** **High-Sensitivity Distribution Mapping of Iron, Zinc and Copper during SPIO-Microbubbles Facilitated Focused Ultrasound Induced Blood-Brain Barrier Opening via Laser Ablation/Inductively Coupled Plasma Mass Spectrometry** **Ching-Hsiang Fan**, Chien-Yu Ting, Yi-Kong Hsieh, Hao-Li Liu, Chu-Fang
IUS1-PD1-6 **Tissue imaging using the transmission of 100-MHz-range ultrasound through a fused quartz fiber** **Takasuke Irie**, Tomohito Hasegawa, Kouichi Itoh, Norio Hirota, Norio Tagawa, Masasumi Yoshizawa, Tadashi Moriya, Takashi Iijima	***IUS1-PD2-5*** **A particle-based simulation tool for ultrasound blood flow imaging: validation of high-speed echo-PIV** **Shahrokh Shahriari**, Damien Garcia	***IUS1-PD3-6*** **Smartphone-based Portable Ultrasound Imaging System: Primary Results** **Kyucheol Kim**, Minjae Kim, Hyunseok Joo, Wooyoul Lee, Changhan Yoon, Tai-kyong Song, Yangmo Yoo	***IUS1-PD4-4*** **Multi-mode guided wave measurements in axial transmission on tubular bone-mimicking phantoms** **Jean-Gabriel Minonzio**, Josquin Foiret, Petro Moilanen, Jalmari Pirhonen, Zuomin Zhao, Maryline Talmant, Jussi Timonen, Pascal Laugier	***IUS1-PD5-3*** **Intrinsic Contrast Based Ultrasound Time Intensity Curve Analysis for Monitoring Focused-Ultrasound Induced Blood-Brain-Barrier Disruption** **Nai-Ying Kuo**, Po-Hsun Wang, Hao-Li Liu, Meng-Lin Li
IUS1-PD1-7 **Visualization of cancer distribution for living tissues using acoustic impedance microscope** **Sachiko Yoshida**, Hikari Yamada, Yasunori Shioki, Makoto Yagihashi, Kazuto Kobayashi, Seiji Yamamoto, Naohiro Hozumi	***IUS1-PD2-6*** **Physiological flow characterization in elastic vessel phantom using Ultrasonic Particle Image Velocimetry** **Ming Qian**, Lili Niu, Congzhi Wang, Yang Xiao, Weibao Qiu, Hairong Zheng	***IUS1-PD3-7*** **Optimization of real-time ultrasound PCIe data streaming and OpenCL processing for SAFT imaging** **Mateusz Walczak**, Marcin Lewandowski, Norber Zolek	***IUS1-PD4-5*** **Variations in Reflection Properties of Fast and Slow Longitudinal Waves in Cancellous Bone with Boundary Condition** **Atsushi Hosokawa**	***IUS1-PD5-4*** **Intra-cerebral diffusion of Irinotecan and Temozolomide after US-induced opening of the blood-brain barrier with an unfocused ultrasound device in rabbits** **Kevin BECCARIA**, Michael CANNEY, Lauriane GOLDWIRT, Christine FERNANDEZ, Julie PIQUET, Cyril LAFON, Jean-Yves CHAPELON, Alexandre

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Thursday, July 25 2013			Forum Hall
IUS1-PD5-5 **Active Control of Bubble Liposome through Artificial Capillary by Using Matrix Array Transducer** **Ren Koda**, Naoto Hosaka, Shinya Onogi, Takashi Mochizuki, Kohji Masuda, Ryo Suzuki, Kazuo Maruyama	***Session IUS3-PD1. Acoustic tweezers 3*** *Chair:* **Charles Robert Parker Courtney**	***Session IUS3-PD2. Phononic crystals 2*** *Chair:* **Roy Olsson**	***Session IUS4-PD. Microwave Acoustic Sensors*** *Chair:* **Victor Plessky**	***IUS4-PD-8*** **Wavelet versus Fourier for Wireless SAW sensors resonance frequency measurement** **Pascal Rischette**, Angel Scipioni, Omar Elmazria, Hamid Mjahed, Gérard Prieur
IUS1-PD5-6 **Nonlinear mixing of two ultrasonic beams for transcranial sonothrombolysis** **Hermes Kamimura**, Pedro Pinto, Theo Pavan, Octávio Pontes-Neto, Antonio Carneiro	***IUS3-PD1-1*** **3D standing waves in polymer-based microfluidic chips for acoustic particle manipulation** **Itziar González**, Almudena Cabañas, Adela Castillejo, Jose Luis Soto, María Tijero, Javier Berganzo, Mounir Bouali, Alain Martin, Victor Acosta	***IUS3-PD2-1*** **Fourier Series Representation of the Dispersion of Coupled-Resonator Acoustic Waveguides** Jose Maria Escalante, Alejandro Martinez,**Vincent Laude**	***IUS4-PD-1*** **Analysis of Quality Factor of Quartz-Crystal Tuning Fork Using Thermoelastic Coupling Equations and L-shaped Bar Model with Torsion Spring** **Keisuke Sugiura**, Hideaki Itoh	***Session IUS5-PD. Transducer Design and Modeling*** *Chair:* **Reinhard Lerch**
IUS1-PD5-8 **Controlled induction of mechanical bioeffects with pulsed ultrasound and chemical agents** **Ken-ichi Kawabata**, Rei Asami, Reiko Ashida	***IUS3-PD1-2*** **Measuring Acoustic Forces Using Holographic Optical Tweezers** **Philip Bassindale**, Dave Phillips, Adrian Barnes, Bruce Drinkwater	***IUS3-PD2-2*** **Study of surface elastic wave propagation in 2D array with various lattices symmetries based on cylindrical and conical Ni pillars on piezoelectric crystal** **Abdelkrim Talbi**, Yu Du, Abdelali Mrabti, Noura Gasmi, Jeremy Streque, Ali Soltani, Jean-Claude Gerbedeon, Abdllatif Akjouj, Yann Pennec, Baron Djafari Rouhani, Olivier Boumatar,	***IUS4-PD-2*** **Microacoustic voltage transformer with bandpass filter characteristics** **Milena Moreira**, Johan Bjurström, Ventsislav Yantchev, Ilia Katardjiev	***IUS5-PD-1*** **Estimation of multiple unknown constructive internal parameters from broadband "black box" models for matched contact piezoelectric probes** Abelardo Ruíz, Luis Alberto Castellanos,**Antonio Ramos**, David K. Anthony, Hector Calas
IUS1-PD5-9 **Three-dimensional design of acoustic field to trap higher amount of microbubbles in flow using a matrix array transducer** Naoto Hosaka, **Kohji Masuda**, Ren Koda, Takashi Mochizuki, Shinya Onogi	***IUS3-PD1-3*** **Particle Trapping Study in Multiple-focus Acoustic Field** **Yanyan Yu**, Weibao Qiu, Lei Sun	***IUS3-PD2-3*** **Experimental investigation of the propagation of Lamb Wave in nanostructured silicon plates** **Remi Marchal**, Bernard Bonello, Olga Boyko, Jinfeng Zhao	***IUS4-PD-3*** **Stress Sensitivity of SAW Rayleigh Waves on Lithiumniobate and its Application in Pressure Sensor Design** **Gudrun Bruckner**, Jochen Bardong, Johannes Schicker, Venjamin Stojanov, Peter Schlumpf	***IUS5-PD-2*** **Determination of All the Complex Material Constants of the Piezoelectric Single Crystals PMN-28%PT by a New Automated Iterative Method** **Yongrae Roh**, Jinwook Kim, Cheeyoung Joh

IUS1-PD5-10 **A Novel Use of Chitosan Combines with Ultrasound for Body Weight and Local Fat Controlled in Mice.** Ai-Ho Liao, **Wan-Chun Ma**	***IUS3-PD1-4*** **Acoustic radiation force on a cluster of rigid particles in viscoelastic medium** **Valeriy Andreev**, Andrey Shanin, Ekaterina Atletova, Igor Demin, Oleg Rudenko	***IUS3-PD2-4*** **Tunable Locally Resonant Band Gaps for Surface Acoustic Waves and Lamb Waves in a Phononic Crystal** **Noura Gasmi**, Abdelkrim Talbi, Yu Du, Marc Goueygou, Olivier Bou Matar	***IUS4-PD-4*** **Surface Acoustic Wave Biosensor based on Odorant Binding Proteins Deposited by Laser Induced Forward Transfer** **Fabio Di Pietrantonio**, Massimiliano Benetti, Domenico Cannatà, Antonio Varriale, Sabato D'Auria, Alexandra Palla-Papavlu, Pere Serra, Enrico Verona	***IUS5-PD-3*** **Combined physical and statistical modeling of laser induced ultrasound signals from thin light absorbing films** Tomas Linder, Erika Svanström, **Johan E. Carlson**
IUS1-PD5-11 **Efficient Generation of Cavitation Bubbles in Rose Bengal Solution by Ultrasound Exposure with Negative- Followed by Positive-Peak-Pressure Emphasized Waves** **Jun Yasuda**, Ayumu Asai, Shin Yoshizawa, Shin-ichiro Umemura	***IUS3-PD1-5*** **Precipitation method for nano particle using focused ultrasound** Moojoon Kim, **Jungsoon Kim**, Kanglyeol Ha, Seonae Hwangbo, Mincheol Chu	***IUS3-PD2-5*** **Band gap and local resonances of Love waves in a piezoelectric substrate coated with phononic guiding layer** **Tsung-Tsong Wu**, Chun-Shao Liu, Ting-Wei Liu	***IUS4-PD-5*** **A room temperature SAW based ethanol gas sensors** Wen Wang, Shitang He,**Haoliang Hu**	***IUS5-PD-4*** **Thermal Stability Investigation of 1-3 Piezocomposites for Underwater Transducers** **Erman Uzgur**, Geoff Steel, Chris Gibbs
IUS1-PD5-12 **Ultrasonic Monitoring of Cavitation-Induced Damage in Articular Cartilage** **Christoffer Fridlund**, Heikki Nieminen, Edward Hæggström	***IUS3-PD1-6*** **Nanoparticle dispersion by focused ultrasound from cylindrical transducer** Moojoon Kim, **Seonae Hwangbo**, Jungsoon Kim, Kanglyeol Ha, Mincheol Chu	***IUS3-PD2-6*** **Band gap behavior of phononic strip with MEMS materials** **hammouche khales**, Rafik Serhane, Abdelkader Hassein-Bey, Abdelkrim Khelif	***IUS4-PD-6*** **Optimization of gold film thickness for SH-SAW biosensor on quartz** **Mikihiro Goto**, Hiromi Yatsuda, Jun Kondoh	***IUS5-PD-5*** **Calculation of diffraction loss between non-co-axial ultrasonic transducer configurations** **Abhinav Gupta**, Maik Hoffmann, Mario Kupnik
	IUS3-PD1-7 **Multi-Particle Trapping and Patterning using a Single Ultrasound Beam** **Changyang Lee**, Jong Seob Jeong, Jae Youn Hwang, Jungwoo Lee, K. Kirk Shung	***IUS3-PD2-7*** **Band Gaps and Resonances in Periodic Graphite-like Structures** **Zi-Gui Huang**, Chun-Fu Su	***IUS4-PD-7*** **Design of a coupled resonator 3dB Power Divider based on BAW Technology** **Mercedes Jimenez**, Edén Corrales, Pedro de Paco, Óscar Menéndez	***IUS5-PD-6*** **Membrane design of an all-optical ultrasound receiver** **Suzanne Leinders**, Wouter Westerveld, Jose Pozo, Paul Urbach, Nico de Jong, Martin Verweij

1:00 pm – 2:00 pm and 3:30 pm – 4:30 pm	Poster --- Thursday, July 25 2013			Forum Hall
IUS5-PD-7 **Coupled Vibration Analysis for a Piezoelectric Array element Using Superposition Method** **Daeseung Kim**, Myungdeok Kim, Kookjin Kang, Keonho Son				
IUS5-PD-8 **Design and modelling of an integrated device for acoustic resonance spectroscopy** **Megha Agrawal**, Ying Zhou, Jayesh R. Bellare, Ashwin A. Seshia				
IUS5-PD-9 **Modeling of CMUTs with Square Anisotropic Plates** **Mette Funding la Cour**, Thomas Lehrmann Christiansen, Christian Dahl-Petersen, Jørgen Arendt Jensen, Erik Vilain Thomsen				
IUS5-PD-10 **Modelling of Electric Field and Stress in Piezoelectric Composite under Bending Load in Quasi-static Conditions** **Guillaume Beckers**, Bruno Dehez				

Monday, July 22 2013 – ISAF-PFM

08:30 am – 10:00 am	**Plenary Session I: Opening, Achievement Award, IUS Fellows and Awards** **IUS Plenary talk: Session Chair; Stanislav Emelianov *University of Texas at Austin*** **Plenary speaker: Peter Burns, *University of Toronto, Canada*, Cancer and the Acoustic Bubble** **Congress Hall**
10:00 am – 10:30 am	**Refreshments**
10:30 am -12:00 pm	**Oral --- Monday, July 22 2013**

	Session ISAF3-A1. ***Advanced Characterization Method*** *Chair:* **Pam Thomas**	***Session ISAF2-A2.*** ***Piezoelectrics*** *Chair:* **Shujun Zhang**	***Session PFM-A3.*** ***PFM1*** *Chair:* **Andrei Kholkin**
	CLUB E	**CLUB (C+D)**	**CLUB B**
10:30 am	***ISAF3-A1-1*** **Recent Progress in Dielectric and Light Scattering Spectroscopy of Ferroelectric Soft Modes** **Jan Petzelt**, Elena Buixaderas, Tetyana Ostapchuk, Dmitry Nuzhnyy, Volodymyr Skoromets, Veronica Goian, Viktor Bovtun, Ivan Gregora, Christelle Kadlec, Filip Kadlec, Stanislav Kamba, Petr Kužel, Jirí Hlinka	***ISAF2-A2-1*** **Complete Description of Piezoelectric Response in Fundamental Equations** **Takaaki Tsurumi**, Manabu Hagiwara, Takuya Hoshina, Hiroaki Takeda	***PFM-A3-1*** **Nanoscale Domain Wall Phenomena in Epitaxial Bismuth Ferrite Thin Films** **Nagarajan Valanoor**
11:00 am	***ISAF3-A1-2*** **A New Method of Dielectric Characterization in the Microwave Range for Tunable High-k Ferroelectric Thin Films** **Kevin Nadaud**	***ISAF2-A2-2*** **Enhanced Large Signal Performance of PZT Thick Film Actuators for Active Micro-Optics** **Dörthe Ernst**, Bernhard Bramlage, Sylvia Gebhardt, Oliver Pabst, Andreas Schönecker	***PFM-A3-2*** **Thermal Quench Effects on Ferroelectric Domain Walls** **Patrycja Paruch**, Alejandro B. Kolton, Xia Hong, Charles H. Ahn, Thierry Giamarchi
11:15 am	***ISAF3-A1-3*** **Central Mode in Perovskite Ferroelectrics: Terahertz Spectroscopy and Molecular Dynamics Simulations** **Petr Kuzel**, Tetyana Ostapchuk, Christelle Kadlec, Jeevaka Weerasinghe, Laurent Bellaiche, Jirka Hlinka	***ISAF2-A2-3*** **Microstereolithography of Piezoelectric Components** **David Woodward**, Simon Leigh, Connor Watts, Rui Wang, Chris Purssell, Duncan Billson	***PFM-A3-3*** **Disorder and environmental effects on ferroelectric domain wall dynamics** **Jill Guyonnet**, Sebastian Bustingorry, Cédric Blaser, Ezequiel Ferrero, Iaroslav Gaponenko, Jambunathan Karthik, Lane Martin, Patrycja Paruch
11:30 am	***ISAF3-A1-4*** **Elastic Anomalies in Ferroelectric Ceramics: $Pb(Mg_{1/3}Nb_{2/3})O_3$ as Elastic Relaxor, Octahedral Tilts in Tetragonal $Pb(Zr,Ti)O_3$ and Magneto-elastic Coupling in $BiFeO_3$** Hana Ursic, Tadej Rojac, Li Jin, **Dragan Damjanovic**	***ISAF2-A2-4 (Invited)*** **Fabrication and Electromagnetic Properties of 3D Photonic Crystals for Microwave Applications** **Hong Wang**	***PFM-A3-4*** **Direct Observation of Domain Wall Pinning and Creep in Ferroelectric Thin Film Capacitors** **Huizhong Zeng**
11:45 am	***ISAF3-A1-5*** **Ultrasonic Determination of Anisotropic Elasticity of $DyScO_3$ Substrates** Hanus Seiner, Petr Sedlak, Michaela Janovska, **Michal Landa**, Pavel Marton, Petr Ondrejkovic, Jiri Hlinka		***PFM-A3-5*** **PFM at Variable Temperatures: Behavior of Domains in $BaTiO_3$ across its Orthorhombic to Tetragonal Phase Transition** Thorsten Limböck, Akos Hoffmann, **Elisabeth Soergel**

Monday, July 22 2013 – ISAF-PFM

12:00 pm – 01:00 pm	**Lunch Break**		
01:00 pm – 02:00 pm	**Poster Session and Student Paper Competition (SPC)**		
02:00 pm -03:30 pm	**Oral --- Monday, July 22 2013**		
	Session ISAF3-B1. ***Pb-based ceramics: Spectroscopy*** *Chair:* **Jan Petzelt**	***Session ISAF1-B2.*** ***Relaxor Materials*** *Chair:* **Takaaki Tsurumi**	***Session PFM-B3.*** ***PFM2*** *Chair:* **Raegan Johnson**
	CLUB E	**CLUB (C+D)**	**CLUB B**
02:00 pm	***ISAF3-B1-1*** **Soft Mode in Cubic $PbTiO_3$ by Hyper-Raman Scattering** **Jiri Hlinka**, Bernard Hehlen, Antoni Kania, Ivan Gregora	***ISAF1-B2-1*** **Similarities Between the Physics of Relaxors and other Systems** **Brahim Dkhil**, Sergey Prosandeev	***PFM-B3-1 (Invited)*** **Electrical Modulation of the Local Conduction at $BiFeO_3$-$CoFe_2O_4$ Tubular Oxide Interface** **Ying-Hao Chu**
02:15 pm	***ISAF3-B1-2*** **Infrared and Terahertz Spectroscopy of Antiferroelectric $PbZrO_3$ Single Crystals** **Tetyana Ostapchuk**, Christelle Kadlec, Petr Kuzel, Jan Kroupa, Vladimir Zelezny, Jan Petzelt, Jiri Hlinka, Jan Dec	***ISAF1-B2-2*** **Temperature Evolution of Dielectric Relaxation in PMN Single Crystals** **Jiri Hlinka**, Viktor Bovtun, Stanislav Kamba, Jan Petzelt	
02:30 pm	***ISAF3-B1-3*** **Compositional tunability of phonons in PZT investigated by Raman scattering** **Elena Buixaderas**, Ivan Gregora, Mael Guennou, Jan Petzelt, Jiri Hlinka	***ISAF1-B2-3*** **Acoustic Evidence of Distinctive Temperatures in Relaxor-Multiferroics** **Elena Smirnova**, Andrei Sotnikov, Sergey Ktitorov, Hagen Schmidt, Manfred Weihnacht	***PFM-B3-2 (Invited)*** **Anomalous Photovoltaic Effect in $BiFeO_3$** **Marin Alexe**, Akash Bhatnagar
02:45 pm	***ISAF3-B1-4*** **$PbZrO_3$: Nature of the High Temperature Phase Transition** **Romain Faye**, Hongbo Liu, Dariusz Kajewski, Kristian Roleder, Pascale Gemeiner, Brahim Dkhil, Pierre-Eymeric Janolin	***ISAF1-B2-4*** **Relaxation of Polarized State Created by Local Electric Field in SBN Single Crystals** **Vera Shikhova**, Vladimir Shur, Vladimir Shvartsman, Doru Lupascu, Anton Ievlev, Maxim Neradovskiy, Dmitry Pelegov, Vasily Lebedev, Lyudmila Ivleva, Jan Dec	
03:00 pm	***ISAF3-B1-5*** **Study of Ferroelectric-Antiferroelectric Crossover in PLZT (x/90/10) Ceramics** **Lavinia-Petronela Curecheriu**, Laurentiu Stoleriu, Carmen Galassi, Fabio Fochi, Liliana Mitoseriu	***ISAF1-B2-5*** **Structural Origins of Strain and Fatigue in 94%$(Bi_{1/2}Na_{1/2})TiO_3$-6%$BaTiO_3$** **Hugh Simons**, John Daniels, Julia Glaum, Jacob Jones, Andrew Studer, Mark Hoffman	***PFM-B3-3*** **Optimization of Carbon Nanotube Tips for Improved Scanning Probe Microscopy Studies of Ferroic Thin Films** **Yuliya Lisunova**
03:15 pm	***ISAF3-B1-6*** **Microwave Dielectric Properties of Relaxor Ferroelectric $Pb(In_{1/2}Nb_{1/2})O_3$-$Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ Single Crystals** **LI JIN**, Fei Li, Shujun Zhang, Dragan Damjanovic	***ISAF1-B2-6*** **Temperature-dependency of the Relaxor-Ferroelectric Transition in BNT-BZT Ceramics** **Julia Glaum**, Hugh Simons, Matias Acosta, Mark Hoffman	***PFM-B3-4*** **Characterizing piezoelectric MEMs displacement** **Joe Evans**, Scott Chapman

03:30 pm – 04:30 pm	Poster Session and Student Paper Competition (SPC) and Refreshments		
04:30 pm -06:00 pm	**Oral --- Monday, July 22 2013**		
	Session ISAF3-C1. ***Lead-free ceramics: Structure*** *Chair:* **Jacob L Jones**	***Session ISAF1-C2.*** ***Materials for High Power and High Temperature Applications*** *Chair:* **Ian Michael Reaney**	***Session PFM-C3.*** ***PFM3*** *Chair:* **Patrycja Paruch**
	CLUB E	**CLUB (C+D)**	**CLUB B**
04:30 pm	***ISAF3-C1-1 (Invited)*** **Tilted or Distorted Octahedra in Perovskite Structures - What is the limit of what we can learn from powder diffraction?** **Pam Thomas**	***ISAF1-C2-1*** **$BaTiO_3$- – $Bi(Zn_{1/2}Ti_{1/2})O_3$- $NaNbO_3$ Dielectric Ceramics for Advanced Capacitor Applications** **Natthaphon Raengthon**, Harlan J. Brown-Shaklee, Geoff L. Brennecka, David P. Cann	***PFM-C3-1 (Invited)*** **Interplay of Polarization Dynamic and Surface Electrochemistry in Ferroelectrics: From Ionic Transport to Chaotic Dynamics and Fractal Growth** **Sergei Kalinin**, Anna Morozovska, Vladimir Shur
04:45 pm		***ISAF1-C2-2*** **Large Field Property Assessment of Mn:PIN-PMN-PT Crystals for High Power Transducers** **Jun Luo**, Sam Taylor, Shujun Zhang, Wes Hackenberger	
05:00 pm	***ISAF3-C1-2*** **Lead-free Piezoelectric Ceramics $(Na_{0.5}K_{0.5})NbO_3$ Doped with $LiTaO_3$ and $BiScO_3$** **Fangyuan Zhu**, Jing-Feng LI, Michael B. Ward, Tim P. Comyn, Andrew J. Bell, Steven J. Milne	***ISAF1-C2-3*** **Effects of Excess Bi on High-temperature Dielectric and Piezoelectric Properties of Lead-free $0.75BiFeO_3$-$0.25BaTiO_3$ Ceramics** **Jianguo Chen**, Jinrong Cheng	***PFM-C3-2*** **Nanoscale Electrochemical Diode in Proton-exchanged $LiNbO_3$** **Michele Manzo**, Nina Balke, Amit Kumar, Stephen Jesse, Sergei Kalinin, Brian Rodriguez, Katia Gallo
05:15 pm	***ISAF3-C1-3*** **Breaking of the Centric Symmetry in Ferroelectric and Paraelectric Phases of Unploed Ceramics** **Alberto Biancoli**, Dragan Damjanovic	***ISAF1-C2-4*** **Novel High Temperature $BiFeO_3$-$(K_{0.5}Bi_{0.5})TiO_3$—$PbTiO_3$ Piezoelectric Ceramics** **Jim Bennett**, Andrew J Bell, Tim J Stevenson, Tim P Comyn	***PFM-C3-3*** **Formation of Ordered and Disordered Nanodomain Chains as a Result of Switching by Conductive Tip of Scanning Probe Microscope** **Anton Ievlev**, Vladimir Shur, Maxim Neradovskiy, Anna Morozovska, Eugene Eliseev, Sergei Kalinin
05:30 pm	***ISAF3-C1-4*** **Laser Beam Scanning Microscopy Observation of Domain Switching in $NaNbO_3$ Epitaxial Film** **Ichiro Fujii**, Akihiro Kohori, Seiji Yamazoe, Takahiro Wada	***ISAF1-C2-5 (Invited)*** **Designing Dielectric Materials for High Power and Energy Density-a New Era for Capacitor Based Applications** **Clive Randall**, Dennis P. Shay, Russell Maier, Doo Hyun Choi, Michael Lanagan	***PFM-C3-4*** **Towards a Better Understanding of Lateral Piezoresponse Force Microscopy** **Shiming Lei**, Ryan Haislmaier, Tom Lummen, Wenwu Cao, Venkatraman Gopalan
05:45 pm	**ISAF3-C1-5 Hybrid improper ferroelectric phase transition in Ca3Mn2O7** Veronica Goian,Stanislav Kamba, Carolina Adamo, Přemysl Vaněk, Jan Drahokoupil, Andrew Mould, Hanuš Seiner, Lukáš Palatinus, Mariana Klementová, Michal Svatuška, Nicole Benedek Darrell Schlom		***PFM-C3-5*** **Application of Atomic Force Acoustic Microscopy and Ultra-sonic Piezoelectric Force Microscopy to Characterization of Bismuth-Based Piezoelectric Ceramics** **Ute Rabe**

1:00 – 2:00 pm and 3:30 – 4:30 pm	Poster --- Monday, July 22 2013			Forum Hall
Session ISAF-P1A. ISAF Group 1 Posters *Chair:* **Julia Glaum**	***ISAF-P1A-8*** **Linear and nonlinear optical properties of congruent LiNbO3** **Arthur Riefer**	***ISAF-P1A-16*** **Density Functional Theory Calculations of Doped Perovskite Barium Titanate (BaTi0.6Nb0.2Fe0.1O3): Structural Deformations and Ferroelectric Properties** **Piyarat Nimmanpipug**, Wiranwit Wankawee, Laongnuan Srisombat, Yongyut Laosiritaworn	***ISAF-P1A-24*** **One and Two-Dimensional Ferroelectric LiNbO3 Photonic Crystal** Sevket Simsek, **Amirullah M. Mamedov**, Ekmel Ozbay	***ISAF-P1A-33*** **Epitaxial (Sr1-xBax)MnO3 thin films: towards strain-induced ferroelectricity** **L. Maurel**, J. A. Pardo, M. Algueró, C. Becher, E. Langenberg, J. Blasco, C. Magén, P. Ramos, R. Jiménez, J. Ricote, P. Strichovanec, I. Lucas, L. Morellón, M. Fiebig, M. R. Ibarra, P. A. Algarabel
ISAF-P1A-1 **Ultrahigh superelastic and actuation strains in BaTiO3 crystals by reversible electromechanical domain switching** **Yingwei Li**, Faxin Li	***ISAF-P1A-9*** **Dynamic Denisyuk holograms in photorefractive crystals: fundamental physical properties and applications for interferometry** **Pavel Zuev**, Stanislav Shandarov, Sergey Shmakov, Nikolay Burimov, Vitaly Bykov, Alexander Urban, Yury Kargin, Vasiliy Shepelevich	***ISAF-P1A-17*** **Free energy of BaTiO3 single crystal** **Raphaël RENOUD**, Mostafa RAGHEB, Gilles DAMAMME, Caroline BORDERON, Hartmut GUNDEL	***ISAF-P1A-25*** **Lattice Dynamics of Alkali Halides in the Anharmonic Regime** **Martin Kempa**, Jirka Hlinka, Petr Ondrejkovic, Pavel Marton	***ISAF-P1A-34*** **The Magnetoelectric Coupling in a Self-Assembled Epitaxial Nano-composite Driven by Chemical Interaction** **Wen I Liang**, Yuanming Liu, Wei Cheng Wang, Heng Jui Liu, Sheng Chieh Liao, Hong Ji Lin, Chih Huang Lai, Elke Arenholz, Jaingyu Li, Ying Hao Chu
ISAF-P1A-2 **2D Ferroelectrics – Material for Future Memory Devices?** **Vilgelmina Stepkova**, Pavel Marton, Jiri Hlinka	**ISAF-P1A-10 Piezoelectric and ferroelectric properties of DNA nucleobase crystals** **Sabine M. Neumayer**, Maxim S. Ivanov, Igor Bdikin, Andrei Kholkin , Vladimir Bystrov and Brian J. Rodriguez	***ISAF-P1A-18*** **Ferroelectric domain engineering in tricolour superlattices** Nathalie Lemée, **Ingrid CAÑERO INFANTE**	***ISAF-P1A-26*** **Electrical properties of ferroelectric composites described in terms of local field inhomogeneity** **Leontin Padurariu**, Liliana Mitoseriu	***ISAF-P1A-35*** **Effect of composition on functional properties of ferroelectric-ferrite composite systems** **CRISTINA -ELENA CIOMAGA**
ISAF-P1A-3 **Electrostrictive Effect of PMN-PT crystals** **Fei Li**	***ISAF-P1A-11*** **Dielectric properties of ferroelectric thin films with full and partial depletion and the possible inversion of the thickness effect** **Burc Misirlioglu**, Mehmet Yildiz	***ISAF-P1A-19*** **Modeling of Glycine polymorphic and switching properties** **Vladimir Bystrov**, Ensieh Hosseini, Igor Bdikin, Svitlana Kopyl, Andrei Kholkin	***ISAF-P1A-27*** **CALCULATION OF THE DAMPING CONSTANT AND THE ORDER PARAMETER FOR THE LATTICE MODES IN FERROELECTRIC PbTiO3** **Ali Kiraci**, Hamit Yurtseven	***ISAF-P1A-36*** **Influence of substrate-film interface engineering on the multiferroic BiFeO3** **Alim Solmaz**, Mark Huijben, Beatriz Noheda, Guus Rijnders

ISAF-P1A-4 **Formation of Nanodomain Structure in Front of Moving Domain Wall in Proton Exchanged Lithium Niobate** **Mikhail Dolbilov**	***ISAF-P1A-12*** **Influence of the piezoelectric effect on ferroelectric properties and phase transition** **Andreas Leschhorn**, Herbert Kliem	***ISAF-P1A-20*** **Domain Kinetics in Lithium Niobate Single Crystals Inhomogeneously Modified by Annealing in Vacuum** **Denis Alikin**, Victoria Pryakhina, Vladimir Shur, Stanislav Negashev, Ilya Palitsin	***ISAF-P1A-28*** **Magnetically induced change of polarization due internal magnetoelectric coupling in PFW-PT ceramics** **Barbara Fraygola**, José A Eiras	***ISAF-P1A-37*** **Optimal Layout Design of Magnetoelectric Laminates: Effects of Mechanical Boundary Conditions** **Kyung Ho Sun**, Jae Eun Kim, Yoon Young Kim
ISAF-P1A-5 **Forming a regular domain structures at 127º Y'-cut of a LiTaO3 crystal by using direct e-beam writing** **Evgeny Emelin**, Dmitrii Roshchupkin, Sergey Lavrov, Nikita Ilyin, Andrey Kudryavtsev	***ISAF-P1A-13*** **Modeling and Numerical Study of Electroacoustic Behavior of Lithium Niobate Under an Initial Electrical Stress** Mathieu Domenjoud, Michaël Lematre, **Jérôme Fortineau**, Guy Feuillard, Louis-Pascal Tran-Huu-Hue	***ISAF-P1A-21*** **Polarization Reversal Process in Lithium Niobate Single Crystals with Photoresist Dielectric Layer** Vladimir Shur, **Andrey Akhmatkhanov**, Ivan Baturin, Dmitry Zorikhin, Mariya Chuvakova, Almira Lukmanova, Pavel Zelenovskiy, Maxim Neradovskiy	***ISAF-P1A-30*** **Magnetoelectric Coupling of Multiferroic Composites under Combined Thermal-Mechanical-Magnetic loadings** **Fei Fang**	***ISAF-P1A-38*** **Angular Dispersion of Oblique Phonon Modes in BiFeO3 from micro-Raman scattering** J. Hlinka, **J. Pokorny**, F. Borodavka, E. Simon, I. Gregora, S. Karimi, I. M. Reaney
ISAF-P1A-6 **Phase Transitions and Electrocaloric Effect in Ca modified Na1/2Bi1/2TiO3-SrTiO3-PbTiO3 Solid Solutions** **Marija Dunce**, Eriks Birks, Jani Peräntie, Juha Hagberg, Maija Antonova, Andris Sternberg	***ISAF-P1A-14*** **The abnormal polarization switching of relaxor terpolymer films at low temperature** Xiangjian Meng, Xiangjian Meng, **Xiangjian Meng**, xiangjian Meng	***ISAF-P1A-22*** **Structural, elastic, and vibrational properties of Topological Insulators on A2 5B36 compound based** Husnu KOC, **Amirullah M. Mamedov**, Ekmel Ozbay	***ISAF-P1A-31*** **Phase transitions of high insulating rhombohedral Bi1-xLaxFe1-yTiyO3 multiferroic ceramics** **Jian Yu**, Linlin Zhang	***ISAF-P1A-39*** **Structural Phase Transitions in Bi1-xCaxFeO3 Multiferroics** **Uladzimir Khomchanka**, Igor Troyanchuk, Daniel Többens, Vadim Sikolenko, Jose Antonio Paixão
ISAF-P1A-7 **X-Ray, Dielectric, Piezoelectric and Mossbauer Studies of PbFe0.5Ta0.5O3 Multiferroic** **Alexey Blazhevich**, Igor Raevski, Maxim Molokeev, Sergey Misjul, Stas Kubrin, Eugene Sitalo, Svetlana Raevskaya, Dmitry Sarichev, Victor Titov, Marina Malitskaya	***ISAF-P1A-15*** **Effect of grain size on the microwave dielectric properties of ¦Â-BZN ceramics** **Gao-qun Zhang**, Hong Wang	***ISAF-P1A-23*** **Linear and Non-Linear Optical Properties of AgBO3(B=Nb, Ta): First Principle Study** Sevket Simsek, **Amirullah M. Mamedov**, Ekmel Ozbay	***ISAF-P1A-32*** **Mixtures of the ferroelectric liquid crystal and magnetic nanoparticles: New soft magnetoelectrics** **Brigita Rozic**, Marko Jagodic, Saso Gyergyek, George Cordoyiannis, Mihael Drofenik, Zvonko Jaglicic, Samo Kralj, Vassilios Tzitzios, Zdravko Kutnjak	***ISAF-P1A-40*** **DIELECTRIC AND IMPEDANCE SPECTROSCOPY OF Fe DOPED 0.94(Na0.5Bi0.5TiO3)-0.06BaTiO3 CERAMICS** **Maksim Ivanov**, Juras Banys

1:00 – 2:00 pm and 3:30 – 4:30 pm	Poster --- Monday, July 22 2013			Forum Hall
ISAF-P1A-41 **Proton Diffusion as an Origin of Dielectric Properties of Water and Ice** **Alexander Volkov**, Vasily Artemov, Artem Pronin	***ISAF-P1A-49*** **Interface Control of Surface Photochemical Reactivity in Ultrathin Epitaxial Ferroelectric Films** **Jason Chen**, Haidong Lu, Heng-Jui Liu, Ying-Hao Chu, Steve Dunn, Kostya (Ken) Ostrikov, Alexei Gruverman, Nagarajan Valanoor	***PFM-PA-6*** **Piezoresponse force microscopy study of doped (K,Na)NbO3-based ceramics for piezoactuator applications** **Danka Gobeljic**, Vladimir V. Shvartsman, Ke Wang, Wook Jo, Jing-Feng Li, Jürgen Rödel, Doru C. Lupascu	***PFM-PA-14*** **The kinetics of the domain structure of TGS crystals investigated near phase transition temperature by means of AFM** **Olga Golitsyna**, Valeriya Chulakova, Sergey Drozhdin	***PFM-PA-22*** **Calibration and Correction of Signals in Piezoresponse Force-Microscopy (PFM)** **Leonard Henrichs**, Andrew Bell
ISAF-P1A-42 **Study of the ferroelectric phase transition in GeTe using time-domain THz spectroscopy** **Christelle Kadlec**, Filip Kadlec, Petr Kuzel, Jan Petzelt	***ISAF-P1A-50*** **Multiscale modeling of multiferroic nanocomposites** **Sergei Prokhorenko**, Igor Kornev	***PFM-PA-7*** **PFM images of non-ferroelectric thin films** **Alexis Borowiak**, Bertrand Vilquin, Nicolas Baboux, Brice Gautier	***PFM-PA-15*** **Piezo Force Microscopy as a Fundamental Tool for Characterization of Nanoporous PbTiO3 Thin Films** **Alichandra Castro**, Paula Ferreira, Brian Rodriguez, Paula Vilarinho	***Session ISAF-SPC. ISAF Student poster competition*** *Chair:* Julia Glaum
ISAF-P1A-43 **Thermal evolution of crystal structure of Bi1-xPrxFeO3 ceramics near rhombohedral-orthorhombic phase boundary** **Dmitry Karpinsky**, Andrei Kholkin	***Session PFM-PA. PFM Poster*** *Chair:* **To Be Announced**	***PFM-PA-8*** **Morphological and Ferroelectric Studies of LiNbO3 Films Prepared by a Sputtering Deposition** **Dmitry Kiselev**, Roman Zhukov, Alexander Bykov, Mikhail Malinkovich, Yurii Parkhomenko	***PFM-PA-16*** **Local Polarization Reversal in the Vicinity of 180o Domain Wall in Lithium Niobate** Anton Ievlev, Vladimir Shur, **Maxim Neradovskiy**, Anna Morozovska, Eugene Eliseev, Sergei Kalinin	***ISAF-SPC-1*** **Electric Field-Induced Deformation Behavior In Mixed Bi0.5(Na0.8K0.2)0.5TiO3 and Bi0.5(Na0.385K0.09Li0.025)(Ti0.975Ta0.025)O3** **Dae-Jun Heo**, Chang-Ho Yoon, Hyoung-Su Han, Hyun-Young Lee, Jae-Shin Lee
ISAF-P1A-44 **High temperature single-phased magnetic ferroelectrics: BiFeO3-Bi(Zn1/2Ti1/2)O3-PbTiO3 ceramics** **Linlin Zhang**, Xianbo Hou, Jian Yu	***PFM-PA-1*** **Piezo- and ferroelectricity of cellular polypropylene electrets films characterized by piezoresponse force microscopy** **Faxin Li**, Chenhong Miao, Yao Sun, Yongping Wan	***PFM-PA-9*** **Local stress enhancement of ferroelectricity in GFO thin films** **Maksym Iazykov**, Alexandre Thomasson, Brice Gautier, Natalie Viart	***PFM-PA-17*** **Size effect of the space charge modulation in semiconductor caused by ferroelectric domain structure** **Anna N. Morozovska**, Eugene A. Eliseev, Olexander V. Varenyk, Sergei V. Kalinin	***ISAF-SPC-2*** **Temperature Dependence of Domain Contributions to Pie-zoelectric Activity in the Soft- & Hard-doped Lead Zirconate Titanate and La-doped Bismuth Ferrite Lead Titanate Systems** **Adam Qaisar**, Andrew Bell, Tim Comyn

ISAF-P1A-45 **Does the lithium niobate Z cut surface reconstruct?** **Rebecca Hölscher**	***PFM-PA-2*** **Nanoscale switching behavior of BiFeO3 film investigated by PFM and CAFM** **Wenbo Luo**	***PFM-PA-10*** **Buffer layer effect on microstructures and properties of Pb(Zr,Ti)O3-CoFe2O4 layered thin films** **Hongcai He**	***PFM-PA-18*** **Study of ferroelectric nanodomains in epitaxial PbTiO3 films by PFM and Raman spectroscopy** **Fedir Borodavka**, Ivan Gregora, Ausrine Bartasyte, Samuel Margueron, Jiří Hlinka	***ISAF-SPC-3*** **General Behavior of Soft Mode and Central Mode in Strained SrTiO3/DyScO3 multilayers** **Volodymyr Skoromets**, Christelle Kadlec, Jürgen Schubert, Gregor Panaitov, Petr Kužel
ISAF-P1A-46 **Behavior of Polar Nanoregions in Lead Free Relaxor Ferroelectrics** **Chandra Shekhar Pandey**, Jürgen Schreuer, Manfred Burianek, Manfred Muehlberg	***PFM-PA-3*** **Force microscopy study of Magnetoelectric coupling in perovskite FM/FE thin films heterostructures** **Seyedeh Pegah Mirzadeh Vaghefi**, Cátia Alexandra Podence Alves, Fabio Figueiras, Armando António Cardoso dos Santos Lourenço, Vitor Brás de Sequeira Amaral	***PFM-PA-11*** **PFM study of size effects on lead-free ceramics and films of (Bi0.5Na0.5)1-xBaxTiO3 with compositions around the morphotropic phase boundary** **Norberto Salazar**, Dulce Pérez-Mezcua, M. Lourdes Calzada, Adriana Gil, Jesús Ricote	***PFM-PA-19*** **Li diffusion and electrochemical activity in commercial LiMn2O4 battery cathode by Electrochemical Strain Microscopy** **Sergey Luchkin**, Andrei Kholkin, Nina Balke	***ISAF-SPC-4*** **Fabrication and characterization of BaTiO3 ultrathin ferroelectric layers to investigate the origin and characteristics of domain conductivity.** **Alan Douglas**, Li-Wu Chang, Marty Gregg
ISAF-P1A-47 **Ferroelectric and dielectric properties of solid solutions in the system xBi0.5K0.5TiO3 – (100-x)Bi0.5Na0.5ZrO3** **Espen Tjønneland Wefring**, Maxim I. Morozov, Mari-Ann Einarsrud, Tor Grande	***PFM-PA-4*** **SPM study of localized magnetoelectric effect in BaTiO3/Hexaferrite composite ceramics** **Harsh Trivedi**, Vladimir Shvartsman, Doru Lupascu, Andrei Kholkin, Robert C. Pullar	***PFM-PA-12*** **Quantification of electromechanical coupling measured with Piezoresponse Force Microscopy** **Serban Lepadatu**, Markys Cain	***PFM-PA-20*** **Nanoscale Crystallization of Piezoelectric Polymer and Its Electromechanical Properties Studied by Atomic Force Microscopy** **Gun Ahn**, Seungbum Hong, Kwangsoo No	***ISAF-SPC-5*** **Composition depndence of PMN-PT thin films prepared by combinatorial sputtering** **Fumiya Kurokawa**, Kohei Tomioka, Hirotaka Hida, Isaku Kanno
ISAF-P1A-48 **Influence of Plasma-Source Ion Irradiation on Formation of Domain Structure in MgO:LiNbO3 Single Crystals** Vladimir Shur, **Victoria Pryakhina**, Denis Alikin, Stanislav Negashev, Nadezhda Besedina	***PFM-PA-5*** **Modulating domain wall conduction in epitaxial Pb(Zr0.2Ti0.8)O3 thin films by varying oxygen vacancy densities** **Iaroslav Gaponenko**, Jambunathan Karthik, Lane W Martin, Patrycja Paruch	***PFM-PA-13*** **Nanoscale piezoresponse and thermal behavior of ferroelectric domain in multiferroic BiFeO3 thin film** **Huarong Zeng**, Senxin Hui, Kunyu Zhao, Guorong Li, Qingrui Yin	***PFM-PA-21*** **Measurement Anomaly of Step Width using Atomic Force Microscopy** **Gun Ahn**, Dean J. Miller, Kwangsoo No, Seungbum Hong	***ISAF-SPC-6*** **Processing ceramic (Bi,RE)FeO3: comparing two methods by phase evolution, high field electromechanical and ferroelectric behavior** Julian Walker, Peter Bryant, Valsala Kurusingal,Danjela Kuscer, Charles C. Sorrell, Tadej Rojac and Nagarajan Valanoor

1:00 – 2:00 pm and 3:30 – 4:30 pm	Poster --- Monday, July 22 2013			Forum Hall
ISAF-SPC-7 **Textured K0.5Na0.5NbO3 thin films by aqueous chemical solu-tion deposition on SrTiO3 substrates** **Ky Nam Pham**, Maxim Morozov, Thomas Tybell, Tor Grande, Mari-Ann Einarsrud	***ISAF-SPC-15*** **Al1-xScxN thin films as promising non-ferroelectric materials for energy harvesting** **Ramin Matloub**, Gilles Moulard, Thomas Metzger, Paul Muralt			
ISAF-SPC-8 **Growth and Piezo-/Ferroelectric Properties of Pb(Mg1/3Nb2/3)O3-PbTiO3-Bi(Zn1/2Ti1/2)O3 Ternary Single Crystals** **Reagan Belan**, Hamel Tailor, Zuo-Guang Ye				
ISAF-SPC-9 **Enhanced Flexoelectric Effect in A Non-ferroelectric Composite** **Yong Li**, Hong Wang				
ISAF-SPC-10 **High frequency magneto-impedance effects in multiferroic CoTiO2-Bi4Ti3O12 multilayer films** **Hanae Kijima**, Yiwen Zhang, Nobukiyo Kobayashi, Shigehiro Ohnuma, Nava Setter, Paul Muralt, Hiroshi Masumoto				

ISAF-SPC-11 **Large and stable actuation strain by reversible 90o domain switching in 0.62%PMN-0.38%PT crystal under electromechanical loading** **Yingwei Li**, Faxin Li				
ISAF-SPC-12 **A MEMS AlN Transducer Array for use as a Cochlear Implant** **Katherine Knisely**, Karl Grosh				
ISAF-SPC-13 **Piezoelectric Films for High Density Switching Arrays for Logic** **Ryan Keech**, Smitha Shetty, Susan Trolier-McKinstry, Dennis Newns, Glenn Martyna				
ISAF-SPC-14 **Pb(In1/2Nb1/2)-Pb(Mg1/3Nb2/3)-PbTiO3 single crystal monomorph with perpendicular electrode connections for sensing and energy harvesting** **Ming Ma**, Zhenrong Li, Zhuo Xu, Xi Yao				

Tuesday, July 23 2013 – ISAF-PFM

08:30 am – 10:00 am	**Plenary Session II: UFFC Distinguished Lecturer Award, Ferroelectrics Awards and New Fellows** **ISAF-PFM Plenary talk: Session Chair; Susan Trolier-McKinstry, *the Pennsylvania State University*** **Plenary speaker: Kenji Uchino, *ONR Global-Asia & the Pennsylvania State University, USA,* Piezoelectric Actuator Renaissance** **Congress Hall**
10:00 am – 10:30 am	**Refreshments**
10:30 am -12:00 pm	**Oral --- Tuesday, July 23 2013**

	Session ISAF2-D1. ***Marija Kosec Memorial Electroceramic Processing*** *Chair:* **Nava Setter**	***Session ISAF1-D2.*** ***Domain engineering*** *Chair:* **Geoff Brennecka**	***Session ISAF1-D3.*** ***High Temperature Piezoelectrics*** *Chair:* **David Cann**
	CLUB E	**CLUB (C+D)**	**CLUB B**
10:30 am	***ISAF2-D1-1*** **Mechanochemistry as an Efficient Way to Chemically Homogeneous Ferroelectric Ceramics: Case Studies of (K,Na)NbO_3- and $BiFeO_3$-based Materials** **Tadej Rojac**, Andreja Bencan, Julian Walker, Dragan Damjanovic, Barbara Malic,	***ISAF1-D2-1*** **Investigation of Intrinsic Domains in $PbTiO_3$ Ultrathin Films: from Nanodots to Nanostripes** **Celine Lichtensteiger**, Pavlo Zubko, Jean-Marc Triscone	***ISAF1-D3-1*** **High Temperature Piezoelectric Crystals: Recent Develop-ments and Application Specifications** **Shujun Zhang**, Fapeng Yu, Thomas Shrout
11:00 am	***ISAF2-D1-2*** **Influence of Ca/Zr Substitution on Grain Size Effect of $BaTiO_3$-based Ceramics** **Takuya Hoshina**, Tsutomu Furuta, Takahiro Yamazaki, Hiroaki Takeda, Takaaki Tsurumi	***ISAF1-D2-2*** **Ferroelectric Domain Wall Injection via Electric Field Engineering** **Jonathan Whyte**, Raymond McQuaid, Pankaj Sharma, Carlota Canalias, James Scott, Alexei Gruverman, Marty Gregg	***ISAF1-D3-2*** **High Temperature Behaviors of Piezoelectric Sorosilicate Single Crystals** **Hiroaki Takeda**, Manabu Hagiwara, Hiroaki Noguchi, Takuya Hoshina, Nobuhiro Kodama, Takaaki Tsurumi
11:15 am	***ISAF2-D1-3*** **Processing of $Bi(Zn_{1/2}Ti_{1/2})O_3$-$BaTiO_3$ Dielectrics for Reliable High Field Operation** **Geoff Brennecka**, Harlan Brown-Shaklee, Natthaphon Raengthon, Mia Blea, David Shahin, David Cann, Wayne Huebner	***ISAF1-D2-3*** **Breathing Mode of Domain Wall Motion and Spatial Energy Landscapes in Ferroelectric $BiFeO_3$ Films** **Jong-Gul Yoon**, Tae Heon Kim, S. H. Baek, S. M. Yang, J.-S. Chung, C. B. Eom, T. W. Noh	***ISAF1-D3-3*** **Bi(B'B")O3 – PT based High Temperature Piezoelectrics** **Ben Kowalski**, Alp Sehirlioglu
11:30 am	***ISAF2-D1-4*** **Electromechanical Properties of Hard Lead-free $Bi_{0.5}Na_{0.5}TiO_3$-based Ceramics** Elaheh Taghaddos, **Ahmad Safari**	***ISAF1-D2-4*** **Multiscaling Analysis and Thermal Quench Efects of Domain Walls in Epitaxial $BiFeO_3$ Thin Films** **Benedikt Ziegler**	***ISAF1-D3-4*** **$Pb(Yb_{1/2}Nb_{1/2})O_3$-$PbTiO_3$, Structure-property Relation in a High Temperature Piezoelectric Material** **Charlotte Cochard**, Christine Bogicevic, Xavier Bril, Nicolas Guiblin, Florence Procher, Orland Guedes, Pierre-Eymeric Janolin

Tuesday, July 23 2013 – ISAF-PFM

11:45 am	***ISAF2-D1-5*** **Poling below Coercive Field for Large Piezoelectricity** **Xiaoli Tan**, Hanzheng Guo, Cheng Ma, Xiaoming Liu	***ISAF1-D2-5*** **Nanodomain Structuring of Uniaxial Ferroelectrics. Achievements in Nanodomain Engineering** **Vladimir Shur**	***ISAF1-D3-5*** **Piezoceramic Materials for High-Temperature & High-Pressure Applications in Oilfield Exploration & Production** **Kenneth Liang**, Wanda Wolny, Dragan Damjanovic, Torsten Bove
12:00 pm – 01:00 pm	**Lunch Break**		
01:00 pm – 02:00 pm	**Poster Session and Student Paper Competition (SPC)**		
02:00 pm -03:30 pm	**Oral --- Tuesday, July 23 2013**		
	Session ISAF3-E1. ***Lead-free ceramics: E-field Effects*** *Chair:* **Xiaoli Tan**	***Session ISAF2-E2.*** ***Multiferroics*** *Chair:* **Ruediger-A. Eichel**	***Session PFM-E3.*** ***PFM4*** *Chair:* **Sergei Kalinin**
	CLUB E	**CLUB (C+D)**	**CLUB B**
02:00 pm	***ISAF3-E1-1*** **In situ Diffraction Reveals the Dependence of $BaTiO_3$ Grain Size on Domain Wall Motion and Relation to Macroscopic Properties** **Jacob Jones**, Dipankar Ghosh, Juan Nino, Pam Thomas	***ISAF2-E2-1*** **Direct Observation of Electric and Magnetic Field induced Ferroelectric Switching in a Room Temperature Multiferroic** **Donald Evans**	***PFM-E3-1 (Invited)*** **Polarization-Related Electronic Properties of Complex Oxides** **Alexei Gruverman**
02:15 pm	***ISAF3-E1-2*** **High-speed Data Capture of the Electric Field Induced Phase Transition in Potassium Sodium Bismuth Titanate** **Tim Comyn**, Andrew Bell, Annette Kleppe	***ISAF2-E2-2*** **Influence of Composition on the Multiferroic Properties of 5-layer $Bi_6Ti_xFe_yMn_zO_{18}$ Aurivillius Phase Thin Films** **Lynette Keeney**, Ahmad Faraz, Nitin Deepak, Tuhin Maity, Michael Schmidt, Andreas Amann, Nikolay Petkov, Saibal Roy, Martyn E. Pemble, Roger W. Whatmore	
02:30 pm	***ISAF3-E1-3*** **Effect of Applied Field Direction in $\{001\}_{pc}$ Oriented $Bi_{0.5}Na_{0.5}TiO_3$-$7BaTiO_3$-$2K_{0.5}Na_{0.5}NbO_3$ Bulk Ceramics** Chris Fancher, John Blendell, **Keith Bowman**	***ISAF2-E2-3*** **Application of PMN-PT Ferroelectric Relaxor for Multiferroic Random Access Memory Cell** Nicolas Tiercelin, Yannick Dusch, Alexey Klimov, Stefano Giordano, Arnaud Stolz, **Vladimir Preobrazhensky**, Philippe Pernod	***PFM-E3-2*** **Minimum Domain Size and Stability in Carbon Nanotube-Ferroelectric Devices** **Cedric Blaser**, Patrycja Paruch
02:45 pm	***ISAF3-E1-4*** **Electric Field-induced Polarization and Strain in $94(Bi_{1/2}Na_{1/2})TiO_3$-$0.06BaTiO_3$ Under Uniaxial Stress** **Robert Dittmer**, Kyle G. Webber, Emil Aulbach, Wook Jo, Xiaoli Tan, Jürgen Rödel	***ISAF2-E2-4*** **Spin Dynamics Controlled by Strain in $BiFeO_3$ Films** **Ingrid Infante**, Daniel Sando, Arsène Agbelele, Dovran Rahmedov, Alexander Pyatakov, Laurent Bellaiche, Stephane Fusil, Cecile Carretero, Eric Jacquet, Cyrile Deranlot, Sergey Lisenkov, Dawei Wang, Jean-Marie Le Breton, Maximilien Cazayous, Alain Sacuto, Jean Juraszek, Anatoly Zvezdin, Agnès Barthélémy, Brahim Dkhil, Manuel Bibes	***PFM-E3-3*** **Piezo and Ferroelectric Phases of Glycine** **Ensieh Hosseini**, Igor Bdikin, Budhendra Singh, Vladimir Bystrov, Andrei L. Kholkin
03:00 pm	***ISAF3-E1-5*** **Exploration of Microscopic Mechanisms of the Polarization Switching in Lead-free BZT-xBCT Ferroelectrics**	***ISAF2-E2-5 (Invited)*** **On the Chemical Stability and Charged Point Defects in $BiFeO_3$-materials** **Tor Grande**	***PFM-E3-4*** **Piezoelectricity in Biopolymers and DNA Nucleobase Crystals** **Brian Rodriguez**

03:15 pm	***ISAF3-E1-6*** **Electric Field Effects on Domain Processes and Properties in $Ba(Zr_{0.2}Ti_{0.8})O_3$ x$(Ba_{0.7}Ca_{0.3})TiO_3$ Piezoceramics** **Matthias Ehmke**, John Blendell, Keith Bowman *Chair:* **Jirka Hlinka**		
03:30 pm – 04:30 pm		**Poster Session and Student Paper Competition (SPC)and Refreshments**	
		Oral --- Tuesday, July 23 2013	
	Session ISAF3-F1. ***Lead-free ceramics: Spectroscopy***	***Session ISAF3-F2.*** ***Multiferroics*** *Chair:* **Tor Grande**	***Session ISAF2-F3.*** ***PZT film processing*** *Chair:* **Nazanin Bassiri-Gharb**
	CLUB E	**CLUB (C+D)**	**CLUB B**
04:30 pm	***ISAF3-F1-1*** **Two Excitations below Phonon Frequencies in Broad-band Dielectric Response of $Ba(Zr,Ti)O_3$ Ceramics** **Dmitry Nuzhnyy**	***ISAF3-F2-1*** **Raman Spectroscopy for Characterization of Crystalline Phases and Phase Transformations in $BiVO_4$ and $BiFeO_3$ Films** **Dmitri Tenne**	***ISAF2-F3-1 (Invited)*** **Solution Chemistry, Substrate, and Processing Effects on Chemical Homogeneity of PZT Thin Films** **Jon Ihlefeld**, Paul Kotula, Geoff Brennecka, Christopher Shelton, Bonnie McKenzie, Bryan Gauntt, Dara Gough, Erik Spoerke, Ping Lu
04:45 pm	***ISAF3-F1-2*** **Impedance Spectroscopy Studies on Mn doped $K_{0.5}Na_{0.5}NbO_3$ Lead-free Ferroelectric Ceramics** Muhammad Asif Rafiq, **Paula Maria Vilarinho**	***ISAF3-F2-2 (Invited)*** **Electromagnons and Sequence of Structural and Magnetic Phase Transitions in Multiferroic $CaMn_7O_{12}$** **Stanislav Kamba**, Veronica Goian, Filip Kadlec, Jiri Hejtmanek, Maxim Savinov, Premysl Vanek, Milan Orlita	
05:00 pm	***ISAF3-F1-3 (Invited)*** **Defect Structure- Property Relationships: Fundamental Differences Between $Pb[Zr,Ti]O_3$ and Lead-free Alternative Compounds** **Ruediger-A. Eichel**		***ISAF2-F3-2*** **PZT-based High Coupling with Low Permittivity Thin Films** **Kiyotaka Wasa**, Tomoaki Matsushima, Hideaki Adachi, Toshifumi Matsunaga, Takahiko Yanagitani, Takashi Yamamoto, Susan Trolier-McKinstry
05:15 pm		***ISAF3-F2-3*** **Electromagnon in the Pyroelectric Ferrimagnet eps-Fe_2O_3** **Filip Kadlec**, Christelle Kadlec, Veronica Goian, Martí Gich, Martin Kempa, Stéphane Rols, Maxim Savinov, Jan Prokleška, Milan Orlita, Stanislav Kamba	***ISAF2-F3-3*** **PLD Growth and PFM Study of Self-poled, Mono-crystalline PZT Thin Films: Control of Polarization Direction by Dopants and Bottom Electrode** **Mahamudu Mtebwa**, Ludwig Feigl, Nava Setter

Tuesday, July 23 2013 – ISAF-PFM

05:30 pm	***ISAF3-F1-4*** **Ferroelectric Phase Transition in Nanostructured $BaTiO_3$ Studied by Raman Scattering and Second Harmonic Generation** **Alexey Pugachev**	***ISAF3-F2-4*** **Magnetic Field Enhanced Structural Instability in almost Multiferroic $EuTiO_3$** **Annette Bussmann-Holder**, Zurab Guguchia, Hugo Keller, JŸrgen Kšhler	***ISAF2-F3-4*** **Chemical Solution Deposited PZT Thin FIlms on Silicon Substrates with Thin Intermediate Buffer Layer** **John George**, Jeroen Beeckman, Wouter Woestenbroghs, Philippe Smet, Wim Bogaerts, Kristiaan Neyts
05:45 pm	***ISAF3-F1-5*** **Non-linear Coupling between the Primary and Secondary Order Parameters of Strontium Titanate Ceramics** **Ali Al Zein**, Bernard Hehlen, Christine Bogicevic, Pascale Gemeiner, Jean-Michel Kiat	***ISAF3-F2-5*** **Vibrations in Europium Titinate** **David Ellis**, Hiroshi Uchiyama, Satoshi Tsutsui, Kunihisa Sugimoto, Kenichi Kato, Alfred Baron	***ISAF2-F3-5*** **Nb doped PZT Thin Films Grown by CSD** **Nachiappan Chidambaram**, Andrea Mazzalai, Silviu Cosmin Sandu, Davide Balma, Dino Faralli, Lorenzo Colombo, Matteo Fusi, Paul Muralt

1:00 – 2:00 pm and 3:30 – 4:30 pm	Poster --- Tuesday, July 23 2013			Forum Hall
Session ISAF-P2B. ISAF Group 2 Posters *Chair:* **Wanda Wolny**	***ISAF-P2B-8*** **Electrical activity of ferroelectric biomaterials** **Premysl Vanek**, Zdenka Kolska, Jan Petzelt	***ISAF-P2B-17*** **0.6(Bi0.85La0.15)FeO3 - 0.4PbTiO3 Multiferroic Ceramics by Tape Casting** Guoxi Jin, **Jinrong Cheng**	***ISAF-P2B-25*** **Microstructure and Optical Properties of Er2O3 - Doped Potassium Sodium Niobate-Tellurite Glass-ceramics** Ploypailin Yongsiri, **Kamonpan Pengpat**	***ISAF-P2B-33*** **Fabrication and Characterization of PZT-PAni/PVDF Based Nanocomposite** Cibele Oliveira, Gilberto Fuzari Junior, ELSON LONGO, Walter Sakamoto, **MARIA ZAGHETE**
ISAF-P2B-1 **Two-Stage Sintering of Multiferroic PZT-Based Ceramics** **Supon Ananta**	***ISAF-P2B-9*** **Effect of Nb Substitution on (Pb,Ba)ZrO_3 Ceramics** **Barbara Fraygola**, Ulises Salazar, Alberto Biancoli, Dragan Damjanovic, Nava Setter	***ISAF-P2B-18*** **Controllable Synthesis of Different Bismuth Ferrites by an EDTA-assisted Hydrothermal Method and Photocatalytic Characterization** Tong Tong, Jin Dengren, **Cheng Jinrong**	***ISAF-P2B-26*** **Sputtered Pb(Zr,Ti)O3 piezoelectric films for MEMS application** **Hiroki2 Kobayashi**, Mitsunori Henmi, Mitsutaka Hirose, Isao Kimura, Takehito Jinbo, Koukou Suu	***ISAF-P2B-34*** **Ultrathin BaTiO3/Fe bilayer obtained by Atomic Layer Depo-sition for magnetoelectric devices** **Eduardo Martinez-Guerra**, Paul P. Horley
ISAF-P2B-2 **Synthesis, Formation and Characterization of Perovskite Ferroelectric PZT-PZN Powders Derived from a Novel Zn2Nb34O87 Precursor** Penphitcha Amonpattaratkit, **Laongnuan Srisombat**	***ISAF-P2B-10*** **Comparative study of synthesis and properties of multiferroic BiFeO3 nano-objects** **xiaofei bai**, ingrid CANERO INFANTE, christine Bogicevic, Sara Gonzalez, Nicholas Barrett, brahim Dkhil	***ISAF-P2B-19*** **Nanoparticles transport in ceramic matrixes: a novel approach for ceramic matrix composite fabrication** **Andrey Rybyanets**, Anastasia Naumenko	***ISAF-P2B-27*** **Structural, ferroelectric and piezoelectric properties of composition spread Bi1-xGaxFeO3 thin films** Nazir Jaber, **Jerome Wolfman**, Christophe Daumont, Béatrice Négulescu, Antoine Ruyter, Guy Feuillard, Jerome Fortineau, Thierry Sauvage, Blandine Courtois, Cécile Autret-Lambert, François Gervais	***ISAF-P2B-35*** **Preparation and Energy Storage Properties of Barium Stron-tium Titanate Glass-Ceramic Composites via a Sol Coated Method** **Qingyuan Hu**, Xiaoyong Wei
ISAF-P2B-3 **Influences of PZT Addition on the Phase Formation and Multiferroic Properties of PFN-Based Ceramics** **Penphitcha Amonpattaratkit**	***ISAF-P2B-11*** **Preparation and electrical properties of multilayered BaTi1-xZrxO3 composite ceramics** Larissa Rodrigues Mendes, Thiago Martins Amaral, Antonio Carlos Hernandes, **Eduardo Antonelli**	***ISAF-P2B-20*** **Synthesis and Electromechanical Investigations of Tb Sub-stituted Bi4Ti3O12-(BiFeO3)m Aurvillius Phase Thin Films** **Ahmad Faraz**, Nitin Deepak, Tuhin Maity, Saibal Roy, Martyn E. Pemble, Lynette Keeney		***ISAF-P2B-36*** **Fabrication and characterization of Pb0.3Sr0.7TiO3 thin films on stainless steel by the Sol-gel method** Shengli Huang, **Jinrong Cheng**

ISAF-P2B-4 **(001)-Oriented Sol-Gel Epitaxial BiFeO3 Thin Films using Stoichiometric Precursor** **Qi Zhang**, Owen Standard, Hsin-hui Huang, Nagarajan Valanoor	***ISAF-P2B-12*** **Fabrication of lead-free ferroelectric (Na,K)NbO3 thin films by Pulsed Laser Deposition** **Tomohiro Nakao**, Takahiro Wada	***ISAF-P2B-21*** **Hexagonal Ferrite and Ferroelectric Perovskite Magnetoelectric Composites** **Robert Pullar**, Marco Medeiros, Dmitri Karpinsky, Andrei Kholkin	***ISAF-P2B-29*** **Microstructure and kHz- and GHz- Range Dielectric properties of Polycrystalline Ba0.5Sr0.5TiO3 Thin Films** **Tanja Pecnik**, Sebastjan Glinsek, Brigita Kmet, Barbara Malic	***ISAF-P2B-37*** **Synthesis, Microstructural and Electrical Characterization of ZnO Nanorods Arrays Films with Different Diameter for Nanogenerators** Natiara Vaughn Madalossi, Anderson Vedoleto Martins, **Talita Mazon**, Fernando A Sigoli, Italo Odone Mazali
ISAF-P2B-5 **Production and characterization of organic polar nanofibers produced by electrospinning** **Dmitry Isakov**, Ricardo Lima, Tiago Monteiro, Pedro Sa, Etelvina de Matos Gomes, Bernardo Almeida	***ISAF-P2B-13*** **Effects of InNbO4 fabrication on perovskite PIN-PMN-PT** **Linghang Wang**, Zhuo Xu	***ISAF-P2B-22*** **Study of polar and electrical properties of Hydroxyapatite: Modeling and data analysis** **Vladimir Bystrov**, Anna Bystrova, Yuri Dekhtyar, Svitlana Kopyl, Igor Bdikin, Andrei Kholkin, Alla Sapronova	***ISAF-P2B-30*** **Effects of Thermal Treatment on the Properties of Zirconium Doped Barium Titanate Ceramics** **Anocha Munpakdee**, Parkpoom Jarupoom, Sukum Eitssayeam, Kamonpan Pengpat, Pongthepl Arkornsakul, Gobwute Rujijanagul	***ISAF-P2B-38*** **Multiferroic bismuth ferrite based thin films** **Gregory Yesner**, Rut Rivera, Lisa Klein, Ahmad Safari
ISAF-P2B-6 **Dielectric Properties of Ba1-xLaxTiO3 Ceramics Prepared by Two-Step Sintering Method** **Victor Shut**, Sergey Syrtsov, Victor Trublovsky, Igor Troyanchuk	***ISAF-P2B-15*** **Synthesis of Needle-like NaNbO3 Particles by Hydrothermal Process** **Ebru Mensur-Alkoy**, Sedat Alkoy, Yagiz Ozeren	***ISAF-P2B-23*** **Effect of B2O3 Addition on Dielectric and Ferroelectric Properties of BiFeO3 Ceramic** Thanatep Phatungthane, **Gobwute Rujijanagul**	***ISAF-P2B-31*** **Electrical Properties of (1-x)BCZT-xBZT Lead-Free Ceramics** Piewpan Parjansri, **Sukum Eitssayeam**	***ISAF-P2B-39*** **The effect of substitution on the synthesis and dielectric properties of lead-free KNN ceramics** **Ilze Smeltere**, Maija Antonova, Anna Kalvane, Maris Livinsh
ISAF-P2B-7 **Effect of Oxygen Addition in the sputtering Gas on the Structures and Dielectric Properties of Bi2Zn2/3Nb4/3O7 Thin Films** **Muhammad Saeed Khan**, Ren Wei	***ISAF-P2B-16*** **Grain oriented (K0.5Na0.5)NbO3-based piezoelectric ceramics prepared by reactive template grain growth method** **Ali Hussain**, Myong-Ho Kim, Tae-Kwon Song, Won-Jong Kim	***ISAF-P2B-24*** **Shift of morphotropic phase boundary in PNZT epitaxial films processed by sol-gel approach** **Jing-Feng Li**	***ISAF-P2B-32*** **Relationship of Microstructure and Electrical Properties in Sol-Gel PZT Films** **Konstantin Vorotilov**, Alexander Sigov, Dmitry Seregin, Yury Podgorny, Olga Zhigalina, Dmitry Khmelenin	***ISAF-P2B-40*** **A piezoelectric MEMs process** **Joe Evans**, Naomi Montross, Gerald Salazar

1:00 – 2:00 pm and 3:30 – 4:30 pm	Poster --- Tuesday, July 23 2013			Forum Hall
ISAF-P2B-41 **dielectric and ferroelectric properties of Ba1-xSrxTiO3 ceramics prepared by multiple stepped microwave sintering** **Xusheng Wang**	***ISAF-P2B-49*** **Effects of TiO2 addition on microstructure and dielectric properties of phase-mixed BST ceramics** Lixin Zhou, Dengren Jin, **Jinrong Cheng**, Hanting Dong, Chaojun Xie	***ISAF-P2B-57*** **Nanocomposite of magnetic nanoparticles in ferroelectric liquid crystalline host** **Natalia Podoliak**, Vladimíra Novotná, Jana Vejpravová, Věra Hamplová, Milada Glogarová, Jan Prokleška, Damian Pociecha, Ewa Gorecka	***ISAF-P2B-65*** **Novel series of temperature stable glass free LTCC Li2BO4-TiO2 (B=Mo, W)** **Jing Guo**, Hong Wang	***ISAF-P2B-69*** **Processing and properties of BiFeO3-PbTiO3-Pb(Mn1/3Nb2/3)O3 ternary system for high Curie temperature piezoceramics** Rui Dai, Shundong Bu, Dalai Wang, Dengren Jin, **Jinrong Cheng**
ISAF-P2B-42 **Growth of plate- and tube-shaped langasite-type Ca3NbGa3Si2O14 piezoelectric crystals and the properties** **Yuui Yokota**, Shunsuke Kurosawa, Andrey Medvedev, Masato Sato, Kazushige Tota, Ko Onodera, Akira Yoshikawa	***ISAF-P2B-50*** **RF Magnetron Sputtered Pb(Zr0.52Ti0.48)O3 (PZT) Thin Films on Flexible Copper Substrates** Joel Walenza-Slabe, Troy Ansell, David Cann, **Brady Gibbons**	***ISAF-P2B-58*** **(Ag,Li)NbO3 thin films fabricated on (001), (110), and (111)SrTiO3 substrates by pulsed laser deposition** Wada Takahiro, **Yamamoto Yu**	***ISAF-P2B-66*** **Investigating the effects of Ba-, Ca- and Sr-doping on the properties of PLZT** **Mirjam Skof**, Theresa Kainz, Klaus Reichmann	
ISAF-P2B-43 **Growth and piezoelectric properties of PMN-PT crystal grown by micro-pulling-down method** **Yuui Yokota**, Shunsuke Kurosawa, Andrey Medvedev, Akira Yoshikawa	***ISAF-P2B-51*** **Pulsed Laser Deposition of Epitaxial Piezoelectric Thin Films on Flexible Substrates** **Ashley Mason**, Dylan Kearney, Brady Gibbons	***ISAF-P2B-59*** **Influences of MgTiO3 doping in Bi0.5Na0.5TiO3 on microstructure and electrical parameters** **Michael Naderer**, Theresa Kainz, Klaus Reichmann	***ISAF-P2B-67*** **Characterization and synthesis of Barium Titanate/Ni-nano metal composite by sol-gel process for high voltage capacitor** Insung Kim, **Mohsin Saleem**	
	ISAF-P2B-52 **THE STRUCTURE AND DIELECTRIC PROPERTIES OF BISMUTH-NICKEL-NIOBIUM OXIDE BASED CERAMICS** **Xiukai Cai**, Mingying Lv, Yun Su	***ISAF-P2B-60*** **Dopant effects on the phase diagram and piezoelectric properties of lead free piezoelectric niobate ceramics** **Ruiping Wang**	***ISAF-P2B-68*** **Sintering and Dielectric Properties of (1-x) BaTiO3 ¨Cx Sr3Ti2O7 Composite Ceramics by a Coating Method** **Jin Dengren**, Xie Chaojun, Cheng Jinrong	

ISAF-P2B-45 **Polyol-based synthesis of high quality lead zirconate titanate nanostructured thin films** Abolghasem Nourmohammadi, Mohsen Khosravi, **Elaheh Bahremandi Tolu**	***ISAF-P2B-53*** **ROLE OF TiO2 AND WO3 IN IMPROVING THE PROCESSING BEHAVIOURS OF BISMUTH-BASED CERAMICS** **Yun Su**, Xiukai Cai, Mingying Lv	***ISAF-P2B-61*** **Influence of Germanium Substitution on Dielectric and Ferroelectric Properties of Ba(Fe0.5Nb0.5)O3 Ceramics** **Puripat Kantha**, Nuttapon Pisitpipathsin, Kamonpan Pengpat, Amar Bhalla		
ISAF-P2B-46 **UV laser-induced poling inhibition in proton exchanged optical waveguides in lithium niobate** **Elisabeth Soergel**, Thorsten Limböck, Sakellaris Mailis	***ISAF-P2B-54*** **Synthesis and Characterization of Piezo-/Ferroelectric Bi(Zn1/2Ti1/2)O3-PbZrO3-PbTiO3 Solid Solution** **Bixia Wang**, Yujuan Xie, Nan Zhang, Zuo-Guang Ye	***ISAF-P2B-62*** **Tailored MPB BiScO3-PbTiO3 piezoelectric ceramics for high temperature electromechanical transduction and magnetoelectric composites** Eider Berganza, Harvey Amorin, Pablo Ramos, Alicia Castro, **Miguel Algueró**		
ISAF-P2B-47 **Adsorption Controlled MOCVD Growth of Bismuth Ferrite Thin Films** **Nitin Deepak**, Lynette Keeney, Martyn Pemble, Roger Whatmore	***ISAF-P2B-55*** **Identification of LiNb(Ta)O3, LiNb(Ta)3O8 and Li3Nb(Ta)O4 phases in thin films synthesized with different deposition techniques by means of XRD and Raman spectroscopy** **Ausrine Bartasyte**, Valentina Plausinaitiene, Adulfas Abrutis, Samuel Margueron, Sandra Stanionyte, Pascal Boulet, Takashi Kobata, Yoshiaki Uesu, Jerome Gleize	***ISAF-P2B-63*** **Lead-free fibers with oriented structure** **Francesca Bortolani**, Tony Lusiola, Frank Clemens		
ISAF-P2B-48 **Functional properties of lead-free perovskite (Na0.5Bi0.5TiO3)1-x - (BaTiO3)x thin films** **Maria Dinescu**	***ISAF-P2B-56*** **Abnormally Large Dielectric Response in Textured PZT Thin Films** **Pronin Igor**	***ISAF-P2B-64*** **Effect of Sn4+ substitution on structure and properties in the PbSnO3¨CPbZrO3¨CPbTiO3 ternary system** **Xing Zhuo**, Wei Xiaoyong		

Wednesday, July 24, 2013 – ISAF-PFM

08:30 am – 10:00 am	**Plenary Session III: Distinguished Service Award, IFCS and EFTF Awards** **IFCS-EFTF Plenary talk: Session Chair; Warren Walls, *US Naval Observatory, USA*** **Plenary speaker: Daniel Kleppner, *MIT-Harvard Centre for Ultracold Atoms*, USA, In Praise of the Useless and the Useful: the Creation of Atomic Clocks** **Congress Hall**
10:00 am – 10:30 am	**Refreshments**
10:30 am -12:00 pm	**Oral --- Wednesday, July 24 2013**

	Session ISAF2-G1. Integration and Tailored Micro/Nanostructures *Chair:* **Tadej Rojac**	***Session ISAF2-G2. Pb-Free Piezoelectrics*** *Chair:* **Clive Randall**	***Session ISAF3-G3. Pb-based ceramics: Domains*** *Chair:* **Celine Lichtensteiger**
	CLUB E	**CLUB (C+D)**	**CLUB B**
10:30 am	***ISAF2-G1-1 (Invited)* Chemical Solution Processing of Ferroelectric Thin Films and Nanostructures** **Nazanin Bassiri-Gharb**, Ashley Bernal, Yaser Bastani, Suenne Kim, Elisa Riedo, Haidong Lu, Alexei Gruverman, Amit Kumar, Sergei Kalinin	***ISAF2-G2-1* Texturation of Lead-free $BaTiO_3$-based Piezoelectric Ceramics** Alexis Ngueteu Kamlo, Franck Levassort, Mai Pham Thi, **Pascal Marchet**	***ISAF3-G3-1* Study of Domain Structure and Phase Transitions in $Pb(Zr_{1-x}Ti_x)O_3$ Single crystals** **Zuo-Guang Ye**
10:45 am		***ISAF2-G2-2* Electric-Field-Induced Phase Switching in Textured Ba-doped Bismuth Ferrite - Lead Titanate** **Meghdad Palizdar**, Tim Comyn, Tim Stevenson, Andrew Bell	***ISAF3-G3-2* Morphotropic Interfaces in $Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ Single Crystals** **Iegor Rafalovskyi**, Mael Guennou, Ivan Gregora, Jiri Hlinka
11:00 am	***ISAF2-G1-2* Confinement Printing of Thin Film Lead Zirconate Titanate for MEMS Applications** **Aaron Welsh**, Denis Dezest, Liviu Nicu, Michael Hickner, Susan Trolier-McKinstry	***ISAF2-G2-3* Fabrication of Barium Titanate Grain-oriented Ceramics Using Barium Titanate Particles with Different Crystal Structure by Electrophoresis Deposition Method under High Magnetic Field and Their Dielectric and Piezoelectric Properties** **Satoshi Wada**	***ISAF3-G3-3 (Invited)* In situ TEM on Phase Transitions in Perovskite Ceramics** **Xiaoli Tan**, Hanzheng Guo, Cheng Ma
11:15 am	***ISAF2-G1-3* Polar Ordering in Nanoscale Perovskites and its Control via Colloidal Processing** **Gabriel Caruntu**, Mark Polking, Amin Yourdkhani, Daniela Caruntu, Valeri Petkov, Christian Kisielowski, Yimei Zhu, Paul Alivisatos, Ramamoorthy Ramesh	***ISAF2-G2-4* Anisotropy of Piezo- and Ferroelectricity in Textured $K_{0.5}Na_{0.5}NbO_3$-based Materials from Novel Texturing Method** **Astri Haugen**, Gerhard Henning Olsen, Francesco Madaro, Maxim Morozov, Goknur Tutuncu, Jacob L. Jones, Tor Grande, Mari-Ann Einarsrud	***ISAF3-G3-4* Heat Treatment Effects on Domain Configuration and Strain Behavior under Electric Field in Undoped $Pb[Zr_xTi_{1-x}]O_3$ Ferroelectrics** **Ljubomira Schmitt**, Hans Kungl, Manuel Hinterstein, Lars Riekehr, Hans-Joachim Kleebe, Michael J. Hoffmann, Rüdiger-A. Eichel, Hartmut Fuess
11:30 am	***ISAF2-G1-4* Structural and Electric Properties of $Ca_2Nb_3O_{10}$ Thin Films Grown by Electrophoretic Method** Sang Hyo Kweon, **Mir Im**, Sahn Nahm	***ISAF2-G2-5* The Electric Property of Textured Lead-free Piezoelectric Thick Films** Jiwei Zhai, Bo Shen, **Fang Fu**	***ISAF3-G3-5* Field-induced Phase Transitions in Soft $Pb(Zr_{1-x}Ti_x)O_3$ at the Morphotropic Phase Boundary** Yohan Seo, Daniel J. Franzbach, Jurij Koruza, Andreja Benčan, Barbara Malič, Marija Kosec, Jacob L. Jones, **Kyle G. Webber**

Wednesday, July 24, 2013 – ISAF-PFM

11:45 am	***ISAF2-G1-5*** **Multiferroic Properties of Bismuth Ferrite Porous Thin Films** **Stella Skiadopoulou**, Eliana Carvalho, Alichandra Castro, Paula Ferreira, Paula Vilarinho	***ISAF2-G2-6*** **Fabrication of Random and Textured Lead-free (K,Na)NbO_3 in Fiber, Ribbon and Ceramic Form** **Sedat Alkoy**, Ebru Mensur-Alkoy, Ayse Berksoy-Yavuz	***ISAF3-G3-6*** **Depolarization of High Temperature x$PbTiO_3$ - y$BiScO_3$ - z$Bi(Ni_{1/2}Ti_{1/2})O_3$ Ternary Perovskite Piezoelectric System** **Troy Ansell**, David Cann
12:00 pm – 01:00 pm	**Lunch Break**		
01:00 pm – 02:00 pm	**Poster Session and Student Paper Competition (SPC)**		
02:00 pm -03:30 pm	**Oral --- Wednesday, July 24 2013**		
	Session ISAF2-H1. ***Pb-free film processing*** *Chair:* **Jon Ihlefeld**	***Session ISAF4-H2.*** ***Novel Ferroelectric Devices*** *Chair:* **Glen R Fox**	***Session ISAF3-H3.*** ***Capacitors*** *Chair:* **Satoshi Wada**
	CLUB E	**CLUB (C+D)**	**CLUB B**
02:00 pm	***ISAF2-H1-1*** **Growth and Size Control of $Bi_4Ti_3O_{12}$ Nanowalls and their Piezoelectric Property** **Tomoaki Yamada**, Takaaki Shibata, Koji Ishii, Masahito Yoshino, Junichi Kimura, Hiroshi Funakubo, Takanori Nagasaki	***ISAF4-H2-1*** **Planar Laser-Micro Machined Bulk PZT Bimorph For In-Plane Actuation** **Sachin Nadig**, Serhan Ardanuç, Victor Haas, Amit Lal	***ISAF4-H3-1 (Invited)*** **The Effects of Sn^{2+} Ion Doping on Perovskite Titanates** **Shoichiro Suzuki**
02:15 pm	***ISAF2-H1-2*** **Processing and Ferroelectric Properties of Undoped and Mn-doped x[$Bi_{0.5}Na_{0.5}TiO_3$]-(1-x)[$Bi_{0.5}K_{0.5}TiO_3$]-(0.04) [$Bi_{0.5}Li_{0.5}TiO_3$] Thin Films** Mehdi Hejazi, **Ahmad Safari**	***ISAF4-H2-2*** **Improvement of the Stability of X-ray Emission by the Thermal Excitation of Pyroelectric Crystals** **Fumihiko Naruse**, Hiroyuki Honda, Yoshikazu Nakanishi, Shinji Fukao, Yoshiaki Ito, Yuuki Sato, Shinzo Yoshikado	
02:30 pm	***ISAF2-H1-3*** **Bi-based Piezoelectric Thin Films via Chemical Solution Deposition** Yu Hong Jeon, Eric Patterson, David Cann, Peter Mardilovich, William Stickle, **Brady Gibbons**	***ISAF4-H2-3*** **New Cooling Technologies based on the Electrocalorics** **Brigita Rozic**, Zdravko Kutnjak, George Cordoyiannis, Maja Trcek, Hana Ursic, Jurij Koruza, Marko Vrabelj, Barbara Malic, Rasa Pirc, S.-G. Lu, Qiming Zhang	***ISAF4-H3-2*** **Lead free LTCC/PZT Modules (LPM)** **Markus Flössel**, Sylvia Gebhardt, Andreas Schönecker, Alexander Michaelis
02:45 pm	***ISAF2-H1-4*** **Realization and Characterization of Manganese-doped BST Thin Films for Reflect Array Applications** **Hartmut Gundel**	***ISAF4-H2-4*** **Piezoelectric Films for High Density Switching Arrays for Logic** **Ryan Keech** , Smitha Shetty, Susan Trolier-McKinstry, Dennis Newns, Glenn Martyna	***ISAF4-H3-3*** **Pulsed Discharge Behavior of ($Bi_{0.2}$ $Ba_{0.8}$)($Zn_{0.1}Ti_{0.9}$)O_3 -based Relaxor Multilayer Ceramic Capacitors** **Harlan Brown-Shaklee**, John Borchardt, Mia Blea, Geoff Brennecka
03:00 pm	***ISAF2-H1-5*** **Ferroelectric Properties of Ultrathin $SrTiO_3$ Films Epitaxially Grown on Graphene** **Peter Petrov**, Bin Zou, Clementine Walker, Edward Romans, Arnaud Blois, Sergiy Rozhko, Norbert Klein, Olena Shaforost, Cecilia Mattevi, Neil Alford	***ISAF4-H2-5*** **Photoconductivity from Electrospun Bismuth Ferrite Nanofibers** **Rut Rivera-Beltran**, Rajesh Kappera, Manish Chhowalla, Ahmad Safari	***ISAF4-H3-4*** **Free-Electron Gas at Charged Domain Walls in Ferroelectrics** **Tomas Sluka**, Alexander Tagantsev, Petr Bednyakov, Nava Setter

Wednesday, July 24, 2013 – ISAF-PFM

03:15 pm	***ISAF2-H1-6*** **Solgel Hydrothermal Synthesis of $BaTiO_3$/MWCNTs for Microelectronic Applications** Amit Mahajan, **Paula M. Vilarinho**, Angus Kingon, Ákos Kukovecz	***ISAF4-H2-6*** **Application of PIN-PMN-PT:Mn in High-Performance Flame Detectors** **Alena Movchikova**, Norbert Neumann	***ISAF4-H3-5*** **Nonlinear dielectric response of polymer system with coexisting ferroelectric and relaxor states** **Goran Casar**, Xinyu Li, Jurij Koruza, Qiming Zhang, Vid Bobnar
03:30 pm – 04:30 pm	**Poster Session and Student Paper Competition (SPC) and Refreshments**		
04:30 pm -06:00 pm	**Oral --- Wednesday, July 24 2013**		
	Session ISAF3-I1. ***ISAF3G: Pb-based materials: Films*** *Chair:* **Brady Gibbons**	***Session ISAF4-I2.*** ***Piezoelectric Energy Harvesting*** *Chair:* **Paula Vilarinho**	***Session ISAF4-I3.*** ***Bulk Piezoelectric Materials*** *Chair:* **Pavel Mokry**
	CLUB E	**CLUB (C+D)**	**CLUB B**
04:30 pm	***ISAF3-I1-1*** **Flexoelectric Effects in Compositionally Graded Ferroelectric Thin Films – Towards Strain 2.0** **Lane Martin**	***ISAF4-I2-1*** **Energy Harvesting with Piezoelectric Thin Film Micro Devices** **Paul Muralt**	***ISAF4-I3-1*** **From Materials Discovery to Prototype Devices** **Ian Reaney**
05:00 pm	***ISAF3-I1-2*** **Ferroelastic Domain Wall Motion in PZT Thin Films** **Raegan Johnson-Wilke**, Margeaux Wallace, Rudeger Wilke, Giovanni Esteves, Jacob Jones, Susan Trolier-McKinstry	***ISAF4-I2-2*** **Curled PZT Cantilever Based MEMS Harvester** Jae Park, **Hyeonsu Park**	***ISAF4-I3-2*** **Phase Transition Toughening in Antiferroelectric Ceramics** **Xiaoli Tan**, S. Eli Young, Yo-Han Seo, Kyle Webber, Jürgen Rödel
05:15 pm	***ISAF3-I1-3*** **Characterization of GHz Electromechanical Properties of PZT Single Crystalline Thin Films without Removing Substrate** **Takahiko Yanagitani**, Masashi Suzuki, Kiyotaka Wasa	***ISAF4-I2-3*** **A Tunable Vibrating Piezoelectric Cantilever for Energy Harvesting** Bouhadjar Ahmed Seddik, Ghislain Despesse, **Emmanuel Defay**	***ISAF4-I3-3*** **High Power Piezoelectric Properties of Some Bismuth Layer-Structured Ferroelectric Ceramics and their Applications to Ultrasonic Motors** **Hajime Nagata**, Shun Endo, Tadashi Takenaka
05:30 pm	***ISAF3-I1-4*** **In-situ XRD Observation of (100)/(001)-oriented $Pb(Zr,Ti)O_3$ Films under Applied Electric Field** **Hiroshi Funakubo**, Ayumi Wada, Yoshitaka Ehara, Shintaro Yasui, Mitsumasa Nakajima, Takahiro Oikawa, Hitoshi Morioka, Takeshi Kobayashi	***ISAF4-I2-4*** **Piezoelectric MEMS Vibrational Energy Harvester Using $BiFeO_3$ Films** **Takeshi Yoshimura**, Syuichi Murakami, Keisuke Wakazono, Kento Kariya, Norifumi Fujimura	***ISAF4-I3-4*** **Using A New Design of Piezoelectric Device for Micro UEDM Application** **Yung Ting**, Chia An Wei, Chin Chih Yeh, Chih Hsuan Yu, Hsiang Hung Huang
05:45 pm	***ISAF3-I1-5*** **Piezoelectric Responses of Epitaxial PZT Film-based Membrane in d_{31} and d_{33} Actuation Mode** **Minh Nguyen**, Matthijn Dekkers, Dave Blank, Guus Rijnders	***ISAF4-I2-5*** **Efficient Flexible Nanogenerator Made of Organic Ferroelectric dabcoHReO4** **Dmitry Isakov**, Etelvina de Matos Gomes, Bernardo Almeida, Michael Belsley, Igor Bdikin, Andrei Kholkin	***ISAF4-I3-5*** **Efficient Compensation of Nonlinear Transfer Characteristics for Piezoceramic Actuators** **Felix Wolf**, Hartmut Hirsch, Alexander Sutor, Stefan J. Rupitsch, Reinhard Lerch

1:00 – 2:00 pm and 3:30 – 4:30 pm	Poster --- Wednesday, July 24 2013			Forum Hall
Session ISAF-P3C. ISAF Group 3 Posters *Chair:* **Kyle Webber**	***ISAF-P3C-9*** **Resistive Hysteresis of MOD-made BaTiO3 Ferroelectric Thin Film Dependent on Film Thickness** **Minoru Noda**, Syu Ou, Hideaki Kawahara, Kaoru Yamashita	***ISAF-P3C-17*** **Fundamental Understanding of Structural Contributions to Macroscopic Strain in Barium Titanate** **Qinghua Cao**, John Daniels	***ISAF-P3C-25*** **LiNbO3-LiTaO3 mixed crystals: A joint theoretical and Raman investigation** Sergej Neufeld, **Simone Sanna**	***ISAF-P3C-33*** **Far-infrared and THz spectroscopy in thick PZT films** **Elena Buixaderas**, Christelle Kadlec, Volodymyr Skoromets, Dmitri Nuzhnyy, Jan Petzelt, Hana Ursic, Barbara Malic
ISAF-P3C-1 **Properties of Hafnium/Zirconium doped (Na1/2Bi1/2TiO3) Relaxor-Ferroelectric Ceramics Under Bias Electrical Field** **Derya Kirsever**, H. Seyin Yilmaz	***ISAF-P3C-10*** **Effect of polarization switching on the electron emission of PZST antiferroelectric ceramic** **Yang Liu**	***ISAF-P3C-18*** **Formation Mechanism and Dielectric Properties of the KTiNbO5 and K3Ti5NbO14 Ceramics** **Mir Im**, Sang-Hyo Kweon, Guifang Han, Sahn Nahm, Ji-Won Choi, Seong-Ju Hwang	***ISAF-P3C-26*** **High-Temperature X-ray Diffraction of Ca3TaGa3Si2O14 and La3Ga5SiO14 Piezoelectric Crystals Excited by Surface Acoustic Waves** **Luc Ortega**, Dmitry Roshchupkin, Dmitry Irzhak, Ivo Zizak	***ISAF-P3C-34*** **Anisotropic electrical properties of BNT based textured lead-free piezoceramics** **Haibo Zhang**, Wook Jo, Jürgen Rödel
ISAF-P3C-2 **Simulation of the Locally Measured d33 of Piezoelectric 1-3-Composites** **Christoph Pientschke**, Sabine Kern, Hartmut S. Leipner	***ISAF-P3C-11*** **Evaluation of the Polarization State of Piezofiber Composites** **Agnes Eydam**, Gunnar Suchaneck, Kai Hohlfeld, Sylvia Gebhardt, Alexander Michaelis, Gerald Gerlach	***ISAF-P3C-19*** **Infrared and terahertz study of lattice dynamics in PbTiO3** **Tetyana Ostapchuk**, Christelle Kadlec, Petr Kuzel, Jiri Hlinka, Antoni Kania	***ISAF-P3C-27*** **Effects of ¦Ã-ray irradiation on ferroelectric properties of Pr and Mn co-substituted BiFeO3 thin films** Zheng Wen, Chunyan Zheng, Jin Li, Liyun He, Jiating Zhu, **Di Wu**, Aidong Li	***ISAF-P3C-35*** **The frequency and temperature dependence of hysteresis loop in P(VDF-TrFE) copolymer films** **Manfang Mai**, Andreas Leschhorn, Herbert Kliem
ISAF-P3C-3 **Structure and Ferroelectric Properties of Multiferroic BiFeO3/SrTiO3 Superlattices Prepared by RF Sputtering** **Hsin-Yi Lee**, Shang-Jui Chiu, Ge-Ping Yu	***ISAF-P3C-12*** **MPB in x(BaZrO3)-y(Bi(Mg0.5Ti0.5)O3)-z(K0.45Na0.5Li0.05)NbO3 lead-free piezoelectric ceramics** **Liaoying Zheng**	***ISAF-P3C-20*** **A Study of Properties of Ferrite-Ferroelectric Structures for tunable electronic devices** **Andrey Es'kov**, Alexander Semenov	***ISAF-P3C-28*** **Resonance Line Shape Behavior of 2-2 Magnetoelectric Sensors on Cantilever Substrates** **Jascha Lukas Gugat**, Matthias C. Krantz, Martina Gerken	***ISAF-P3C-36*** **Unexpected Domains Structure in BaTiO3 Single-Crystal revealed by Confocal Raman Microscopy** Fernando Rubio-Marcos, Adolfo Del Campo, Pascal Marchet, **Jose F. Fernandez**

ISAF-P3C-4 **Inverse Scheme to Identify the Temperature Dependence of Electromechanical Coupling Factors for Piezoceramics** **Stefan Rupitsch**, Juergen Ilg, Reinhard Lerch	***ISAF-P3C-13*** **Photo-optical Properties of Functional Chiral Photochromic Liquid Crystalline Polyacrylates** **Natalia Podoliak**, Alexey Bobrovsky, Alexej Bubnov, Věra Hamplová, Miroslav Kašpar, Valery Shibaev	***ISAF-P3C-21*** **Structure and Multifunctionality of Strontium-Barium Niobate** **Jan Dec**, Seweryn Miga	***ISAF-P3C-29*** **Infrared and Terahertz Spectroscopy of Epitaxial BaTiO3/SrTiO3 Superlattices** **Vladimir Zelezny**, Christelle Kadlec, A Soukiassian, Xiaoxing Xi, Darrell Schlom	***ISAF-P3C-37*** **Precise determination of piezoelectric d33-coefficients of piezoelectric thin films assisted by finite element modeling** **Chris Stoeckel**, Christian Kaufmann, Robert Schulze, Detlef Billep, Thomas Gessner
ISAF-P3C-5 **Short pulse characterization of nanosecond-range dielectric degradation in ferroelectric thin-film capacitors** Anquan Jiang, **Tingao Tang**	***ISAF-P3C-14*** **High-frequency dielectric properties of Pb(Fe1/2Nb1/2)O3 ceramics and single crystal** **Ruta Mackeviciute**	***ISAF-P3C-22*** **Structural changes in the Y1-xCaxMnO3 solid solutions** **Anna Razumnaya**	***ISAF-P3C-30*** **Measurement of the indirect piezoelectric coefficient of thin films using interferometry** **Mark Stewart**, Markys Cain	***ISAF-P3C-38*** **Linear and Nonlinear Dielectric Properties of Ternary Solid Solutions 0.4Na0.5Bi0.5TiO3-(0.6-x)SrTiO3-xPbTiO3** **Sarunas Svirskas**, Maksim Ivanov, Sarunas Bagdzevicius, Juras Banys, Jan Dec, Seweryn Miga, Marija Dunce, Eriks Birks, Maija Antonova, Andris Sternberg
ISAF-P3C-6 **Characteristics and structure of Mn-doped (0.6-x)PMT-0.4PT-xPZ ternary system near morphotropic phase boundary** **Hua Hao**, Hanxing Liu	***ISAF-P3C-15*** **Microwave Dielectric Properties of DyScO3 and TbScO3 Substrates Measured by Thin Dielectric Resonator** **Martin Kempa**, Valeriy Pashkov, Viktor Bovtun, Vitaliy Molchanov, Stanislav Kamba, Yuriy Poplavko, Yuriy Yakimenko	***ISAF-P3C-23*** **Raman spectroscopy of Sodium Bismuth Titanate ceramics** **Marco Deluca**, Denis Schuetz, Elena Aksel, Gunnar Picht, Humberto Foronda, Antonio Feteira, Klaus Reichmann, Kyle Webber, Jacob Jones		***ISAF-P3C-39*** **Nano-domain engineering in ultrashort-period** **Jaichan Lee**, Taekjib Choi, Hyunghung Shin, Bae Ho Park
ISAF-P3C-8 **Domain Size Effects on the Local d33 of Tetragonal (Na0.53K0.45Li0.02)(Nb0.8Ta0.2)O3 Ceramics** **Jeong-Ho Cho**	***ISAF-P3C-16*** **Lattice distortions and Raman spectra of multiferroic heterostructures** **Yury Yuzyuk**	***ISAF-P3C-24*** **Broadband Dielectric Spectroscopy and the Application of Lichtenecker Mixing Formula for Barium Titanate and Nickel-Zinc Ferrite Composite Ceramics** **Aurimas Sakanas**, Robertas Grigalaitis, JÅ«ras Banys, Liliana Mitoseriu, Vincenzo Buscaglia, Paolo Nanni	***ISAF-P3C-32*** **Microwave Characterization of Tunable Interdigitated Capaci-tors on BTS Thin Films deposited by sol-gel** **Nicolas Waldhoff**, Didier Fasquelle, Karine Blary, Jean-Claude Carru	***ISAF-P3C-40*** **Influence of spin-phonon coupling in SrMnO3 and CaMnO3 on their dielectric properties and phonon spectra** Veronica Goian, **Maxim Savinov**, Volodymyr Skoromets, Jiří Hejtmánek, Viktor Bovtun, Martin Kempa, Fedir Borodavka, Přemysl Vaněk, Dmitry Nuzhnyy, Alexei Belik, Jun Hee Lee, Karin Rabe, Stanislav Kamba

1:00 pm - 2:00 pm and 3:30 pm - 4:30 pm	Poster --- Wednesday, July 24 2013			Forum Hall
ISAF-P3C-41 **The nature of the defect structure of solid solutions based on lead** **Igor Bykov**, Yuriy Zagorodniy, Lesja Yurchenko, Vladimir Trachevsky, Vilnis Dimza, Karel Nejezchleb, Lubomir Jastrabik, Alexandr Dejneka	***ISAF-P3C-49*** **A New Criterion regarding the Flack parameter** **Jan Fabry**, Michal Dusek	***ISAF-P3C-57*** **Investigation of the dielectric, piezoelectric and elastic properties of BaTiO3 by means the thermal noise method** **Ilya Shnaidshtein**, Petr Bednyakov, Boris Strukov	***ISAF-P3C-65*** **Resolved E-symmetry zone-centre phonons in LiTaO3 and LiNbO3** **Samuel Margueron**, Ausrine Bartasyte, A.M. Glazer, E. Simon, J. Hlinka, I. Gregora	
ISAF-P3C-42 **WEAK FERROMAGNETISM IN DYSPROSIUM SUBSTITUTED BISMUTH FERRITE CERAMICS** **Vladimir Koval**, Ivan Skorvanek, Haixue Yan, Liliana Mitoseriu, Mike J. Reece	***ISAF-P3C-50*** **Optical and electrical properties of (Ba1-xCax)(ZryTi1-y)O3 thin films obtained by pulsed laser deposition assisted by radio-frequency discharge.** **Nicu Scarisoreanu**	***ISAF-P3C-58*** **Band gap asymmetry and local segregation in barium zirconate titanate epitaxial thin films** **Jofre Ventura**, Sergio Hernandez, Adolf Canillas, Jordi Sancho-Parramon, Luis Emerson Coy, Cesar Ferrater, Maria del Carmen Polo, Maria Victoria Garcia-Cuenca, Manuel Varela	***ISAF-P3C-66*** **Infrared Photoluminescence in Er Doped Bismuth Layered Ferroelectrics** **Dengfeng Peng**	
ISAF-P3C-43 **Structure, dielectric, and piezoelectric properties of (0.95-x) BiFeO3-x PbTiO3-0.05 Pb(Zn1/3Nb2/3)O3 ternary high Curie temperature piezoelectric ceramics** JiaJia Jiang, Jianguo Chen, **Jinrong Cheng**	***ISAF-P3C-51*** **Ultrasonic Investigation of Phase Transition Temperature Hysteresis in Ba2Nd(1-x)Pr(x)FeNb4O15 solid solutions** **Martynas Kinka**	***ISAF-P3C-59*** **Determination of the vibrational properties of potassium titanyl phosphate and identification of domain structure sensitive phonon modes** **Michael Rüsing**, Christopher Buchholz, Gerhard Berth, Artur Zrenner	***ISAF-P3C-67*** **Dielectric characterization of PLZST** **Theresa Kainz**, Michael Naderer, Denis Schütz, Klaus Reichmann	
ISAF-P3C-44 **Search for Polar LiNbO3-Type Compounds** **Alexei Belik**	***ISAF-P3C-52*** **Pyroelectric and electrocaloric properties of** **Hiroshi Maiwa**	***ISAF-P3C-60*** **Novel Electromechanical Analysis to Investigate Small Signal Properties of Single Fibers** **Frank Clemens**, Francesca Bortolani	***ISAF-P3C-68*** **Dielectric relaxations and polarons in Sn2P2S6 ferroelectrics** **Andrius Dziaugys**, Juras Banys, Yulian Vysochanskii, M. Medulych, A. Molnar	

ISAF-P3C-45 **Dielectric properties of modified BiFeO3 ceramics** **Duangpon Laksawat**, Kachaporn Sanjoom, Kamonpan Pengpat, Sukum Eitssayeam, Gobwute Rujijanagul	***ISAF-P3C-53*** **Temperature Dependence of Electric Field Induced Changes in Raman Spectrum of Lithium Niobate Single Crystals** **Pavel Zelenovskiy**, Vladimir Shur, Eugene Mingaliev, Patrice Bourson, Marc Fontana	***ISAF-P3C-61*** **Magnetoelectric coupling in Bi1-xAxFeO3 (A=La, Nd) solid so-lutions** **Abdulkarim Amirov**, Abdulkarim Amirov	***ISAF-P3C-69*** **Magnetostriction and magnetoelectric effect in intermetallic/relaxor/PVDF composites** **Piotr Guzdek**	
ISAF-P3C-46 **Electrical properties of PbLaZrTiOx capacitors with conductive oxide buffer layer on Pt electrodes** **Takeyasu Saito**, Yoko Takada, Toru Tsuji, Naoki Okamoto, Kazuo Kondo, Takeshi Yoshimura, Norifumi Fujimura, Koji Higuchi, Akira Kitajima, Akihiro Oshima	***ISAF-P3C-54*** **Retention of Thin Ferroelectric VDF-TrFE Copolymer Films Evaluated from Dielectric Non-Linearities** **Danny von Nordheim**, Sebastian Koch, Soichiro Okamura, Bernd Ploss	***ISAF-P3C-62*** **Measurement of Vibration Mode Structure for Adaptive Vibra-tion Suppression System by Digital Holography** **Pavel Psota**, Vít Lédl, Roman Doleèek, Pavel Mokrý	***ISAF-P3C-70*** **High-Temperature Structural Transitions in YMn1-xTixO3** **Paula Vilarinho**, Monika Tomczyk, Igor Levin, Valentin Laguta	
ISAF-P3C-47 **Polarization Reversal in Crystals of Congruent Lithium Tantalate at Elevated Temperatures** **Dmitry Chezganov**, Vladimir Shur, Ivan Baturin, Andrey Akhmatkhanov	***ISAF-P3C-55*** **Composition and Morphology Effects on the Thermal Conductivity of PZT Thin Films** **Jon Ihlefeld**, Brian Foley, John Duda, Harlan Brown-Shaklee, Douglas Medlin, Bryan Huey, Bonnie McKenzie, Brady Gibbons, Patrick Hopkins	***ISAF-P3C-63*** **Nonlinear signatures of periodically poled waveguide structures in X- and Y-cut lithium niobate** **Tobias Steinrücke**, Alex Widhalm, Gerhard Berth, Artur Zrenner		
ISAF-P3C-48 **ELECTRICAL AND MAGNETIC PROPERTIES OF A NEW AURIVILLIUS PHASE Bi14ThFe4Ti8O45** **Valery Vlasenko**, Victoria Shuvaeva, Sergey Zubkov, Sergey Levchenkov	***ISAF-P3C-56*** **Comparable Measurements and Modeling of Piezoelectric Thin Films for MEMS application** **Thorsten Schmitz-Kempen**	***ISAF-P3C-64*** **Piezoelectric Properties of High Energy Density Pb(Zr,Ti)O3-Pb[(Zn,Ni)1/3Nb2/3]O3 Thick Films for Energy Harvesting Device Application** **Younghun Jeong**, Jisun Yun, Junghee Nam, Jeongho Cho		

Thursday, July 25 2013 – ISAF-PFM

08:30 am -10:00 am	Oral --- Thursday, July 25 2013		
	Session ISAF4-K1. Piezoelectric MEMS *Chair:* **Paul Muralt**	***Session ISAF1-K2. Modeling: multiscale, first-principles,...*** *Chair:* **George Andrew Rossetti**	***Session ISAF1-K3. Local Phenomena*** *Chair:* **Yasuo Cho**
	CLUB E	**CLUB (C+D)**	**CLUB B**
08:30 am	***ISAF4-K1-1 (Invited)*** **3D MEMS Piezoelectric Ultrasound Transducer Technology** **Arman Hajati**, Dimitre Latev, Deane Gardner	***ISAF1-K2-1*** **Point Defects in $LiNbO_3$ from Density Functional Theory using Local and Hybrid Electron XC Functionals** **Yanlu Li**, Simone Sanna, Wolf Gero Schmidt	***ISAF1-K3-1*** **Multiple Bias-induced Transitions and Multiferroic States in Half-doped $La_{0.5}Ca_{0.5}MnO_3$ Manganite** **Fabio Figueiras**
08:45 am		***ISAF1-K2-2*** **First-principles Study of Defect and Domain Wall Interactions in $PbTiO_3$** **Anand Chandrasekaran**, Dragan Damjanovic, Nava Setter, Nicola Marzari	***ISAF1-K3-2*** **Peptide Nanotubes as Building Blocks for Nanosize Transducers and Sensors** Shima Dayarian, Alisa Rudnitskaya, Maciej Wojtas, Svitlana Kopyl, Eric Bosne, **Kate Ryan**, Brian Rodriguez, Ivonne Delgadillo, Andrei Kholkin
09:00 am	***ISAF4-K1-2*** **Ferroelectric Film Bulk Acoustic Wave Resonators for Liquid Viscosity Sensing** **Andrei Vorobiev**, Spartak Gevorgian	***ISAF1-K2-3*** **Self-Consistent Modeling of the Depolarization Field Evolution during Polarization Switching in Polycrystalline Ferroelectrics** **Yuri Genenko**, Jens Wehner, Heinz von Seggern	***ISAF1-K3-3*** **Probing Coupled Metal-Insulator and Ferroic Transitions from the Atomistic to Mesocopic Scales: In-situ PLD-STM Study** **Sergei Kalinin**, Alexander Tselev, Zheng Gai, Peter Maksymovych, Minghu Pan, Arthur Baddorf
09:15 am	***ISAF4-K1-3*** **New Human Machine Interface Devices Using a Piezoelectric Poly(L-lactic acid) Film** **Masamichi Ando**, Hideki Kawamura, Hiroaki Kitada, Takafumi Inoue, Yoshiro Tajitsu	***ISAF1-K2-4*** **FBAR Tuning from First Principles and High-order Electrostriction** **Alexander Kvasov**, Alexander Tagantsev	***ISAF1-K3-4*** **Skin Layers on Multiferroic and Relxaor Single Crystals** **Neus Domingo**, Jose Santisso, Gustau Catalan
09:30 am	***ISAF4-K1-4*** **Piezoelectric Microelectromechanical Systems (MEMS) Across Length Scales** **Susan Trolier-McKinstry**	***ISAF1-K2-5*** **Precursor Dynamics, Incipient Ferroelectricity and Huge Anharmonicity in Antiferroelectric Lead Zirconate $PbZrO_3$** **Annette Bussmann-Holder**, Jae-Hyeon Ko, Andrzej Majchrowski, Krystian Roleder	***ISAF1-K3-5*** **Experimental and Theoretical Methods of Accessing Local Correlations in Modern Ferroelectric Materials** **Marek Pasciak**, T. Richard Welberry, Jiri Hlinka
09:45 am	***ISAF4-K1-5*** **A MEMS AlN Transducer Array for use as a Cochlear Implant** **Katherine Knisely**, Karl Grosh	***ISAF1-K2-6*** **Gauge Theory for Relaxor Ferroelectrics** **Yousra Nahas**, Igor Kornev	***ISAF1-K3-6*** **Spin-Phonon Coupling Role towards Ferroelectricity Rise in Magnetoelectric Y-Substituted $GdMnO_3$** **Rui Vilarinho Silva**, Abílio Almeida, Pedro Tavares, Joaquim Agostinho Moreira

Thursday, July 25 2013 – ISAF-PFM

10:00 am – 10:30 am	Refreshments		
10:30 am -12:00 pm	**Oral --- Thursday, July 25 2013**		
	Session ISAF4-L1. Electrocaloric Materials and Devices *Chair:* **Stanislav Kamba**	***Session ISAF1-L2. Modeling: LGD, Phase-Field,...*** *Chair:* **Dragan Damjanovic**	***Session ISAF4-L3. Les Bowen Memorial Session on Transducer Materials and Devices*** *Chair:* **Ahmad Safari**
	CLUB E	**CLUB (C+D)**	**CLUB B**
10:30 am	***ISAF4-L1-1 (Invited)*** **Influence of Electrical and Mechanical Boundary Conditions on the Electrocaloric Properties of Ferroelectric Thin Films** **George Rossetti, Jr.**, S. Pamir Alpay	***ISAF1-L2-1*** **Thermodynamic Theory and Phase Field Model of Domain Structures in Ferroelectric Thin Layers and Bi-Layers** **Andrei Artemev**	***ISAF4-L3-1 (Invited)*** **Advanced, Broadband High Performance Piezocomposite Transducers** **Brian Pazol**, Timothy Mudarri, Joseph Aghia, Constance Ursch,
10:45 am		***ISAF1-L2-2*** **Tracking the Origin of Dielectric Response of Simple Domain Patterns in BaTiO₃** **Pavel Marton**, Ivan Rychetsky, Antonin Klic, Jiri Hlinka	
11:00 am	***ISAF4-L1-2*** **The Electrocaloric Efficiency of Ceramic and Polymer films** **Emmanuel Defay**, Sam Crossley, Sohini Kar Narayan, Xavier Moya, Neil Mathur	***ISAF1-L2-3*** **Nonlinear Extrinsic Permittivity and Piezoelectricity in Lead Ti-tanate due to Domain Walls Pinning** **Pavel Mokry**, Tomas Sluka, Alexander K. Tagantsev	***ISAF4-L3-2*** **Effect of Electric Bias Field and Pressure on PMN-PT Piezoelectric Single Crystals in Tonpilz Transducers.** **Christian Granger**, Anne-Christine Hladky-Hennion, Jean Claude Debus, Thomas Pastureaud, Martine Doisy, Mai Pham Thi
11:15 am	***ISAF4-L1-3*** **High Temperature Piezoelectric and Electrocaloric Metrology** **Paul Weaver**, P. Woolliams, T. Correia, G. Bartl, T. Quast, T. Stevenson, J. Hameury, P. Klapetek, M. Shpak, T. Schmitz-Kempen	***ISAF1-L2-4*** **Influence of Uniaxial Stress on the Ferroelectric-to-paraelectric Phase Transition in Barium Titanate** **Florian Schader**, Emil Aulbach, Kyle G. Webber, George A. Rossetti, Jr.	***ISAF4-L3-3*** **Flextensional Composite Structure with PZN-PZT Crystals for Energy Harvesting Applications** **Emre Tufekcioglu**, Aydin Dogan
11:30 am	***ISAF4-L1-4*** **Requirements to $(Ba,Ca)(Zr,Ti)O_3$ Electrocaloric Materials** **Gunnar Suchaneck**, Gerald Gerlach	***ISAF1-L2-5*** **Finite Element based Phase Field Simulation on Interaction of Point Defects with Domain Structure in Ferroelectrics** **Baixiang Xu**, Yinan Zuo	***ISAF4-L3-4*** **Effect of Growth Conditions on Performance of $0.67BiFeO_3$-$0.33BaTiO_3$ Bulk Acoustic Wave Resonators** **Andrei Vorobiev**, Spartak Gevorgian, Markus Löffler, Eva Olsson
11:45 am	***ISAF4-L1-5*** **Scaling Laws for the Electrocaloric Effect in Alkaline Earth Titanates** **Andrey Berenov**, Florian Le Goupil, Neil Alford	***ISAF1-L2-6*** **Piezoelectric Response of Twinned $BaTiO_3$** **Petr Ondrejkovic**, Jiri Hlinka, Pavel Marton, Mael Guennou, Alexander Tagantsev, Nava Setter	***ISAF4-L3-5*** **Hysteresis-Free High-Temperature Bimorph Lithium Niobate Actuators Produced by Direct Bonding** **Dmitry Zorikhin**, Ivan Baturin, Eugene Mingaliev, Artur Udalov, Andrey Akhmatkhanov, Pavel Zelenovskiy, Vladimir Shur

12:00 pm – 01:00 pm	Lunch Break		
01:00 pm – 02:00 pm	Poster Session and Student Paper Competition (SPC)		
02:00 pm -03:30 pm	Oral --- Thursday, July 25 2013		
	Session ISAF1-M1. $LiTaO_3$ and $LiNbO_3$ *Chair:* **Hong Wang**	***Session ISAF2-M2. Piezoelectrics*** *Chair:* **Hajime Nagata and Makiko Kobayashi**	***Session ISAF4-M3. Smart Materials and Devices*** *Chair:* **Susan Trolier-McKinstry**
	CLUB E	**CLUB (C+D)**	**CLUB B**
02:00 pm	***ISAF1-M1-1 (Invited)*** **Nano-Domains and Their Related Phenomena in $LiTaO_3$ Single Crystal Studied by Using Scanning Nonlinear Dielectric Microscopy** **Yasuo Cho**	***ISAF2-M2-1*** **Dielectric & Piezoelectric Enhancement of Potassium Niobate/Barium Titanate Nano-complex Ceramics with Parallel Configuration of Structure-gradient Regions** **Satoshi Wada**	***ISAF4-M3-1*** **Ferroelectric Tunnel Junctions Based on Pseudotetragonal $BiFeO_3$** **Flavio Bruno**, Vincent Garcia, Stéphane Fusil, Cécile Carrétéro, Cyrile Deranlot, Eric Jacquet, Karim Bouzehouane, Stéphane Xavier, Manuel Bibes, Agnès Barthélémy
02:15 pm		***ISAF2-M2-2*** **Chemically Modified Solution-Derived $Na_{0.5}K_{0.5}NbO_3$ Thin Films: From Macro- to Nanoscale Response** **Sebastjan Glinsek**, Seung-Hyun Kim, Lindsay Kuhn, Alice Leung, Angus Kingon	***ISAF4-M3-2*** **Performance Investigation and Optimization of Si:HfO_2-FeFETs on a 28 nm Bulk Technology** **Stefan Mueller**, Johannes Müller, Alban Zaka, Tom Herrmann, Ekaterina Yurchuk, Uwe Schröder, Thomas Mikolajick
02:30 pm	***ISAF1-M1-2*** **Stabilizing Mechanisms of Strongly Polar Oxide Surfaces: The $LiNbO_3$ Z-cut** **Simone Sanna**	***ISAF2-M2-3*** **$CaBi_4Ti_4O_{15}$/PZT Sol-Gel Composite for High Temperature Ultrasonic Transducers** **Makiko Kobayashi**, Takuo Inoue, Hajime Nagata, Tadashi Takenaka	***ISAF4-M3-3*** **A 3.8 GHz Tunable Filter Based on Ferroelectric Interdigitated Capacitors** **Areski Ghalem**, Denis REMIENS
02:45 pm	***ISAF1-M1-3*** **Strain and Chemical Engineering in $LiNbO_3$ and $LiTaO_3$ thin films** **Ausrine Bartasyte**, Valentina Plausinaitiene, Adulfas Abrutis, Samuel Margueron, Tomas Murauskas, Pascal Boulet, Virgaudas Kubilius, Zita Saltyte	***ISAF2-M2-4*** **Processing ceramic (Bi,RE)FeO3: comparing two methods by phase evolution, high field electromechanical and ferroelectric behavior** Julian Walker, Peter Bryant, Valsala Kurusingal, Danjela Kuscer, Charles C. Sorrell, Tadej Rojac and Nagarajan Valanoor	***ISAF4-M3-4*** **Fabrication and Evaluation of Bimorph Comprising of Double $Pb[Zr,Ti]O_3$ Thick Films** **Jun-ichi Inoue**, Kensuke Kanda, Takayuki Fujita, Kazusuke Maenaka
03:00 pm	***ISAF1-M1-4*** **Study of $LiNb_{1-x}Ta_xO_3$ Mixed Crystals by Raman and IR Spectroscopy** Ausrine Bartasyte, **Samuel Margueron**, A.M. Glazer, E. Simon, J. Hlinka, I. Gregora, P.A. Thomas	***ISAF2-M2-5*** **Growth, Properties and Structure of High Performance PIN-PMN-PT Single Crystals** **Zhuo Xu**, Zhenrong Li, Fei Li, Shiji Fan, Xi Yao	***ISAF4-M3-5*** **PZT Piezoelectric Films on Glass for Adjustable X-ray Optics** **Rudeger Wilke**, Raegan Johnson-Wilke, Susan Trolier-McKinstry, Vincenzo Cotroneo, Stuart McMuldroch, Paul Reid, Daniel Schwartz

Thursday, July 25 2013 – ISAF-PFM

03:15 pm	***ISAF1-M1-5*** **Charged Domain Wall Conductivity in Lithium Niobate and Lithium Tantalate Single Crystals** **Ivan Baturin**, Dmitry Chezganov, Alexander Esin, Vladimir Shur, Andrey Akhmatkhanov, Danila Ksenofontov	***ISAF2-M2-6*** **Dielectric Relaxation in Lead-Free (1-x)$Bi_{0.5}K_{0.5}TiO_3$ – x$BiFeO_3$ Ceramics with High Electromechanical Properties** **Maxim Morozov**, Mari-Ann Einarsrud, Tor Grande	***ISAF4-M3-6*** **Giant Piezoelectric Response in Nanostructured Ferroelectric Thin Film Membranes** **Nazanin Bassiri-Gharb**, Yaser Bastani, Amit Kumar, Sergei Kalinin
03:30 pm – 04:30 pm	**Poster Session and Student Paper Competition (SPC) and Refreshments**		
04:30 pm – 06:00 pm	**Plenary Session IV and Roundtable Discussion** **Session Chair; Ahmad Safari, *Rutgers University*** **IFCS-EFTF Plenary talk: Patrick Gill, National Physical Laboratory, UK, Optical Clocks - Way ahead of their Time?** **ISAF-PFM Plenary talk: Andreas Schoenecker, *Fraunhofer IKTS, Germany,* Smart solutions for a sustainable future – advances in smart materials, production technologies and applications** **IUS: Roman Maev, *University of Windsor, Ontario, Canad*a, New Generation of High Resolution Ultrasonic Imaging Technology for Material Characterization and NDT in Advanced Automotive Manufacturing** **Congress Hall**		

1:00 pm - 2:00 pm and 3:30 pm - 4:30 pm	Poster --- Thursday, July 25 2013			Forum Hall
Session ISAF-P4D. ISAF Group 4 Posters *Chair:* **Baixiang Xu**	***ISAF-P4D-9*** **Enhanced Electrocaloric Effect in Novel Lead-Free Relaxor Ferroelectrics.** **Florian Le Goupil**, Andrey Berenov, Anna-Karin Axelsson, Matjaz Valant, Neil Alford	***ISAF-P4D-17*** **Flexible Piezoelectric Energy Harvesters Fabricated by KNbO3 Nanowires** **Mi-Ri Joung**, Haibo Xu, Jin-Seong Kim, In-Tae Seo, Sahn Nahm, Seok-Jin Yoon, Chong-Yun Kang	***ISAF-P4D-25*** **Experimental and numerical characterization of a hearing aid prototype microphone with piezoelectric membrane** Israel Pereira, Gustavo Martins, **Júlio Cordioli**	***ISAF-P4D-33*** **BiFeO3 Thin Films for Photocatalytic Water Splitting** **Wei Ji**, Kui Yao
ISAF-P4D-1 **Electrical Conductivity in Heavily Reduced Ferroelectrics near the Mott Metal-Insulator Transition** **Jonathan Bock**, Soonil Lee, Susan Trolier-McKinstry, Clive Randall	***ISAF-P4D-10*** **Enhanced dielectric properties of BaTiO3/poly(vinylidene flu-oride) nanocomposites for energy storage applications** **Ke Yu**, Hong Wang, Yongcun Zhou, Yuanyuan Bai, Yujuan Niu	***ISAF-P4D-18*** **Polymer Matrix-Based Piezoelectric Composite for Structural Health Monitoring** **Walter Sakamoto**, Ricardo Higuti, Evelyn Crivelini, Haroldo Nagashima	***ISAF-P4D-26*** **A Flexible Piezoelectric Power Generator Based on Self-assembled, Highly <001> Oriented BaTiO3 Micro Platelet Thin Layer by an Interfacial Strategy** Hao Xue, **Qing-Ming Wang**	***ISAF-P4D-34*** **Actuator for precision positioning based on single crystalline lithium niobate** **Ilya Kubasov**, Mikhail Malinkovich, Aleksander Bykov, Sedrak Grigoryan
ISAF-P4D-2 **Photochemical Deposited Metal Nanoparticles on Polarized LiNbO3 Surface for SERS Applications** **Xiaoyan Liu**	***ISAF-P4D-11*** **New microfabrication method to reverse micrometric ferroelectric domains on lithium niobate wafers for RF applications** **Florent Bassignot**, Emilie Courjon, Fabien Henrot, Thomas Baron, Sylvain Ballandras	***ISAF-P4D-19*** **Piezoelectricity of New Peptide-Based Materials** Maciej Wojtas, **Andrei Kholkin**	***ISAF-P4D-27*** **Photocurrent Characteristics of PbTiO3/TiO2 Heterostructure Nanotubes using Anodic TiO2 Nanotubes** **Sung Sik Won**, Chang Won Ahn, Ill Won Kim	
ISAF-P4D-3 **Microwave Dielectric Constant Measurements of Strontium Titanate Using Five Mixture Equations** **Jyh Sheen**, Yong-Lin Wang	***ISAF-P4D-12*** **BZN Thin-Film Multilayer Capacitors Fabricated at Low Temperature by Radio Frequency Magnetron Sputtering** Fan He, Saeed Khan, **Wei Ren**, Peng Shi, Xiaoqing Wu	***ISAF-P4D-20*** **Evaluation of the performance of a piezoelectric nanowire-based composite microgenerator** **Olivier Graton**, Guylaine Poulin-Vittrant, Louis-Pascal Tran Huu Hue, Marc Lethiecq	***ISAF-P4D-28*** **Planar acoustic metamaterials with the active control of acoustic impedance using a piezoelectric composite actuator** **Katerina Novakova**, Pavel Mokry, Jan Vaclavik, Pavel Marton, Martin Cernik, Pavel Psota, Roman Dolecek, Vit Ledl	***ISAF-P4D-36*** **Using d14 FOR A New Wedge-Type Piezoelectric Motor** **Yung Ting**, Yun Jui Shieh, Bing Kuan Hou, Chin Chih Yeh, Chih Hao Lin

ISAF-P4D-4 **UV direct-write domain inversion on 128&[deg] YX-cut LiNbO₃: towards novel SAW applications** **Andreas Boes**, Didit Yudistira, Amgad Rezk, Tristan Crasto, Hendrik Steigerwald, Elisabeth Soergel, Scott Wade, James Friend, Arnan Mitchell	***ISAF-P4D-13*** **Piezoelectric thick film sensors: Fabrication and characterization** **Florian VERY**, Philippe Combette, Jean Yves Ferrandis, Denis COUDOUEL, Alain GIANI, Damien FOURMENTEL, Eric Rosenkrantz	***ISAF-P4D-21*** **Piezoelectric PZT Fiber Composite as a Low Frequency Vibration Sensor** Qian Chen, **Qing-Ming Wang**	***ISAF-P4D-29*** **Stress and Temperature Dependent Properties of Single Crystal Piezoelectric Materials and Devices** **Richard Meyer**, Douglas Markley, Zackary Lowe, Nevin Sherlock, Pascal Mosbah	***ISAF-P4D-37*** **Electrocaloric properties in relaxor ferroelectric PMN-PT system** **Jani Peräntie**, Hamel Tailor, Juha Hagberg, Heli Jantunen, Zuo-Guang Ye
ISAF-P4D-5 **PLD Elaboration of Piezoelectric ZnO Thin Film for 540 MHz Al/ZnO/Pt Bulk Acoustic Wave Resonator** **SERHANE Rafik**, BOUTKEDJIRT Tarek, ABDELLI-MESSACI Samira, LAFANE Slimane, KHALES Hammouche, AOUIMEUR Walid, HASSEIN BEY Abdelkader	***ISAF-P4D-14*** **Multi-physical numerical modeling of a piezoelectric loudspeaker for hearing aid applications and experimental validation** **Gustavo Martins**, Leonardo Seki, Julio Cordioli	***ISAF-P4D-22*** **3D Sensor Based on Polyvinylidene Fluoride (PVDF)** **Yung Ting**, Hariyanto Gunawan, Jain Zhi Zhong, Kai Jian Zheng	***ISAF-P4D-30*** **Piezoelectric polymer multilayers on flexible substrate for energy harvesting** **Lei Zhang**, Sharon Su Yin Oh, Ting Chong Wong, Chin Yaw Tan, Kui Yao	***ISAF-P4D-38*** **Design of Wall-plug Efficiency Optimized Semi-active Piezoelectric Shunt Damping Systems** Jan Vaclavik, **Pavel Mokry**, Pavel Marton
	ISAF-P4D-15 **Barium-Strontium-Titanate Thin Film Varactors Integrated on Low-resistivity Silicon and Sapphire Substrates** **Hailing Yue**, Dustin Brown, Guru Subramanyam, Kevin Leedy, Charles Cerny	***ISAF-P4D-23*** **Bi2(Zn2/3Nb4/3)O7/Epoxy composites with enhanced dielectric properties for embedded capacitor applications** **Yuanyuan Bai**, Hong Wang	***ISAF-P4D-31*** **Photovoltaic effect of Bi-layered (Na0.82K0.18)0.5Bi4.5Ti4O15 thin films with different Pt and ITO top electrodes** **Won Seok Woo**, Sung Sik Won, Chang Won Ahn, Song A Chae, Ill Won Kim	***ISAF-P4D-39*** **Efficiency measurement in piezoelectric vibration energy harvesters** **Paul Weaver,** P. Woolliams, M.G. Cain, M. Stewart
ISAF-P4D-8 **Piezoelectric Transducer Applications on Basis of Free-formed PZT Components** **Kai Hohlfeld**, Sylvia Gebhardt, Alexander Michaelis	***ISAF-P4D-16*** **High Energy Density composites Based on Poly (vinylidene fluoride-chlorotrifluoroethylene) and lanthanum doped lead zirconate titanate stannate antiferroelectric ceramic** **Fei Wen**	***ISAF-P4D-24*** **Electrocaloric properties of 0.7Pb(Mg1/3Nb2/3)O3-0.3PbTiO3 ceramics** **Marko Vrabelj**, Hana Ursic, Brigita Rozic, Zdravko Kutnjak, Silvo Drnovsek, Barbara Malic	***ISAF-P4D-32*** **Lead free piezoelectric AD layer for micro actuator** **Jun Akedo**, Jaehyuk Park, Muneyasu Suzuki	***ISAF-P4D-40*** **SiO2/SiN Infrared Absorbing Films for Uncooled Pyroelectric Sensor and its Fabrication and Evaluation** **Koji Oishi**, Daisuke Akai, Makoto Ishida

1:00 pm - 2:00 pm and 3:30 pm - 4:30 pm	Poster --- Thursday, July 25 2013			Forum Hall
ISAF-P4D-41 **Effect of Dome-shaped Asymmetric Piezoelectric Multimorph Ceramic on Frequency Response Characteristics of Piezoelectric Acoustic Actuator** **Hye Jin Kim**, Woo Seok Yang	***ISAF-P4D-49*** **Switchable bandpass filters using acoustically coupled ferroelectric FBARs** **Spartak Gevorgian**	***ISAF-P4D-57*** **Temperature-Dependent Strain Properties of Nb-doped Bi1/2(Na0.84K0.16)1/2TiO3 – SrTiO3 Lead-free Piezoelectrics** Malik Rizwan, Thi Hinh Dinh, **Changhyo Hong**, Hyuong-Su Han, Wook Jo, Hussain Ali, Jae-Shin Lee		
ISAF-P4D-42 **AlN cantilever for differential pressure sensor** **Yutaka Tomimatsu**, Hidetoshi Takahashi, Takeshi Kobayashi, Kiyoshi Matsumoto, Isao Shimoyama, Toshihiro Itoh, Ryutaro Maeda	***ISAF-P4D-50*** **Piezoelectric energy harvesting device using PZT nanorods with single crystal structure** **Seok-Jin Yoon**, Woo-Suk Jung, Chong-Yun Kang	***ISAF-P4D-58*** **Comparative study of electrical properties of PbLaZrTiOx capacitors with Al-doped ZnO and ITO top electrodes.** **Yoko Takada**, Toru Tsuji, Naoki Okamoto, Takeyasu Saito, Kazuo Kondo, Takeshi Yoshimura, Norifumi Fujimura, Koji Higuchi, Akira Kitajima, Akihiro Oshima		
ISAF-P4D-43 **Application driven design, fabrication and characterization of piezoelectric energy scavenger for cardiac pacemakers** **Mikael Colin**, Libor Rufer, Skandar Basrour	***ISAF-P4D-51*** **Remanent polarization and electromechanical properties of LTCC-PZT monomorphs** **Maciej Sobocinski**, Jari Juuti, Heli Jantunen	***ISAF-P4D-59*** **Leakage Currents in Sol-Gel PZT Films** **Alexander Sigov**, Yury Podgorny, Konstantin Vorotilov, Alexey Vishnevskiy		
ISAF-P4D-44 **Impact of domain depth on SAW generation by acoustic superlattice transducers in 128deg YX-cut lithium niobate** **Didit Yudistira**, Andreas Boes, Amgad Rezk, Tristan Crasto, Hendrik Steigerwald, Elisabeth Soergel, James Friend, Arnan Mitchell	***ISAF-P4D-52*** **Stress-modified phase transitions in polarized PMN-PIN-PT, KN and KNL-NTS single crystals/textured ceramics: thermal expansion and Raman scattering studies** Aneta Slodczyk, Gwenael Gouadec, **Philippe Colomban**, Mai Pham Thi	***ISAF-P4D-60*** **Simultaneous piezoelectric and ferroelectric characterization of thin films for MEMS actuators** **Andrea Mazzalai**, Davide Balma, Nachiappan Chidambaram, Paul Muralt		

ISAF-P4D-45 **Improved Microwave Dielectric Properties of Nd(Mg0.5Sn0.5)O3 Ceramics with Ba Substitution** **Yih-Chien CHEN**	***ISAF-P4D-53*** **Investigation of poling behavior under complex loading conditions** **Sophia Eßlinger**, Andreas Schönecker, Rostislav Svidler, Peter Neumeister	***ISAF-P4D-61*** **Effect of Polarization on Mechanical Properties of PZT Ceramics** **Yao Yu**		
ISAF-P4D-46 **Analysis of guided wave propagation in (1-x)Pb(In1/2Nb1/2) (Mg2/3Nb1/3)O3 –xPbTiO3 piezoelectric media** **Haixia Wang**	***ISAF-P4D-54*** **Stability study of [011] ternary PIN-PMN-PT relaxor ferroelec-tric single crystals under high electric field and compressive stress** **Thomas PASTUREAUD**, Martine DOISY			
ISAF-P4D-47 **Measurement of Radiant Energy using Pyroelectric Polymer/Ceramic Composite** **Edinilton Cavalcante**, Darcy Fujii-Kanda, Washington Melo, Gilberto Fuzari Jr., Walter Sakamoto	***ISAF-P4D-55*** **Structural description of the macroscopic properties and the ferroelectric fatigue of lead zirconate titanate** **Manuel Hinterstein**, Jérôme Rouquette, Julia Glaum, Markus Hölzel, Hans Kungl, Michael Knapp, Helmut Ehrenberg			
ISAF-P4D-48 **Tunability and Sensitivity Modification by Poling on PZT Film of Frequency-Tunable Ultrasonic Microsensors** **Kaoru Yamashita**, Hikaru Tanaka, Atsushi Morimoto, Yi Yang, Minoru Noda	***ISAF-P4D-56*** **Study on Electric-field induced Strain and Dielectric Properties of PMN-PT Ceramics** Wei Zhao, Wei Ruan, Lizhu Huang, **Jiangtao Zeng**, Liaoying Zheng, Huarong Zeng, Guorong Li			

Monday, July 22 2013 - IFCS-EFTF

08:30 am – 10:00 am	**Plenary Session I: Opening, Achievement Award, IUS Fellows and Awards** **IUS Plenary talk: Session Chair; Stanislav Emelianov *University of Texas at Austin*** **Plenary speaker: Peter Burns, *University of Toronto*, *Canada*, Cancer and the Acoustic Bubble** **Congress Hall**
10:00 am – 10:30 am	**Refreshments**
10:30 am -12:00 pm	**Oral --- Monday, July 22 2013**

	Session IFCS-EFTF3-A1. Fountain Clocks *Chair:* **Krzysztof Szymaniec**	***Session IFCS-EFTF2-A2. Opto-Electronic Oscillators*** *Chair:* **Gilles Cibiel**	***Session IFCS-EFTF4-A3. Micro- Nano- Devices*** *Chair:* **Ashwin Seshia**
	SMALL HALL	**CLUB H**	**CLUB A**
10:30 am	***IFCS-EFTF3-A1-1 (Invited)* Contributing to the International Atomic Time Using an Atomic 87Rb Fountain Clock** **Jocelyne Guéna**, Michel Abgrall, Sébastien Bize	***IFCS-EFTF2-A2-1* Widely Tunable Opto-Electronic Oscillator** Danny Eliyahu, Wei Liang, Elijah Dale, Anatoliy Savchenkov, Vladimir Ilchenko, Andrey Matsko, David Seidel, **Lute Maleki**	***IFCS-EFTF4-A3-1 (Invited)* Nanoscale Resonant Sensors and Transducers with 1D and 2D Carbon Nanostructures** **Zenghui Wang**
10:45 am		***IFCS-EFTF2-A2-2* Kerr Frequency Comb-Based Ka-band RF Photonic Oscillator** Vladimir Ilchenko, Jerry Byrd, Anatoliy Savchenkov, Danny Eliyahu, Wei Liang, Andrey Matsko, David Seidel, **Lute Maleki**	
11:00 am	***IFCS-EFTF3-A1-2* Ramsey pulling in fountain clocks** Vladislav Gerginov, Nils Nemitz, **Stefan Weyers**	***IFCS-EFTF2-A2-3* Fiber ring resonators with Q factors in excess of 10^10 for Time and Frequency Applications** **Olivier Llopis**, Khaldoun Saleh, Arnaud Fernandez, Gilles Cibiel	***IFCS-EFTF4-A3-2* Nanomechanical mass spectrometry for the characterization of high mass nanoparticles** **Eric Sage**, Ariel Brenac, Robert Morel, Cécilia Dupré, Carine Marcoux, Henri Blanc, Mehmet Selim Hanay, Scott Kelber, Michael Roukes, Eric Colinet, Laurent Duraffourg, Sébastien Hentz

Monday, July 22 2013 - IFCS-EFTF

11:15 am	***IFCS-EFTF3-A1-3*** **Scattering of Cold Atom Coherences by Hot Atoms: Background Gas Collision Shifts of Primary Fountain Clocks** **Kurt Gibble**	***IFCS-EFTF2-A2-4*** **Experimental characterization of optoelectronic oscillators based on optical mini-resonators** Rémi Henriet, Aurélien Coillet,**Patrice Salzenstein**, Khaldoun Saleh, Laurent Larger, Yanne Chembo	***IFCS-EFTF4-A3-3*** **Micro-electro-mechanical resonant tilt sensor with 250 nano-radian resolution** **Xudong Zou**, Pradyumna Thiruvenkatanathan, Ashwin Seshia
11:30 am	***IFCS-EFTF3-A1-4*** **Accuracy evaluation of IT CsF2** **Filippo Levi**, Giovanni A. Costanzo, Claudio E. Calosso, Davide Calonico, Steven R. Jefferts, Thomas P. Heavner	***IFCS-EFTF2-A2-5*** **High spectral purity microwave and terahertz oscillator** **Gwennaël Danion**, François Bondu, Goulch'en Loas, Ludovic Frein, Cyril Hamel, Anthony Carré, Steve Bouhier, Marc Vallet, Marc Brunel, Antoine Rolland, Mehdi Alouini, Alain Brillet, Jean-Pierre Coulon, Frédéric Cleva, Mourad Merzougui, Guillaume Ducourneau, Jean-François Lampin, Alexandre Beck, Mohamed Zaknoune, Christophe Coinon, Xavier Wallart, Emilien Peytavit, Tashin Akalin, Grégoire Pillet, Loïc Morvan, Ghaya Baili, Jérôme Bourderionnet	***IFCS-EFTF4-A3-4*** **Two-Dimensional (2D) Semiconducting Crystal Nanomechanical Resonators with Frequency Scaling** **Jaesung Lee**, Zenghui Wang, Keliang He, Jie Shan, Philip Feng
11:45 am	***IFCS-EFTF3-A1-5*** **Preliminary Results on the KRISS-F1 Primary Atomic Fountain Frequency Standard** **Sang Eon Park**, Myoung-Sun Heo, Sang-Bum Lee, Kurt Gibble, Dai-Hyuk Yu, Chang Yong Park, Won-Kyu Lee, Taeg Yong Kwon	***IFCS-EFTF2-A2-6*** **Inverse Relationship between OEO Q-factor and g-sensitivity** **James P. Cahill**, Justin Pritchett, Ryan Sorensen, Morris Berman, Olukayode Okusaga, Weimin Zhou, Gary M. Carter, Curtis R. Menyuk	***IFCS-EFTF4-A3-5*** **Aluminum Nitride Nano-Plate Resonant Infrared Sensor with Self-Sustained CMOS Oscillator for Nano-Watts Range Power Detection** **Yu Hui**, Matteo Rinaldi

Monday, July 22 2013 - IFCS-EFTF

12:00 pm – 01:00 pm	**Lunch Break**		
01:00 pm – 02:00 pm	**Poster Session and Student Paper Competition (SPC)**		
02:00 pm -03:30 pm	**Oral --- Monday, July 22 2013**		
	Session IFCS-EFTF5-B1. Optical Fiber T+F Transfer I *Chair:* **Ronald Holzwarth**	***Session IFCS-EFTF6-B3. Lattice Clocks I*** *Chair:* **Tetsuya Ido**	***Session IFCS-EFTF1-B2. Micro-Scale Oscillators*** *Chair:* **Dan Stevens**
	SMALL HALL	**CLUB H**	**CLUB A**
02:00 pm	***IFCS-EFTF5-B1-1*** **White Rabbit for Time Transfer** **Erik van der Bij**, Maciej Lipiński, Maciej Lipiński	***IFCS-EFTF6-B3-1*** **Strontium lattice clocks with reduced BBR uncertainty** **Stephan Falke**, Nathan Lemke, Stefan Vogt, Uwe Sterr, Christian Lisdat	***IFCS-EFTF1-B2-1*** **UHF Quartz MEMS Oscillators for Dynamics-Based System Enhancements** **Randall Kubena**, Debbie Kirby, Yook-Kong Yong, David Chang, Fred Stratton, Hung Nguyen, Richard Joyce, Raviv Perahia, Chip Moyer, Robert Nagele
02:30 pm	***IFCS-EFTF5-B1-2*** **Towards a Large-Scale, Optical Timing Distribution System with Sub-Femtosecond Residual Timing Jitter** **Michael Y. Peng**, Patrick T. Callahan, Amir H. Nejadmalayeri, Stefano Valente, Kemal Ahmed, Ming Xin, Eric Monberg, Man Yan, Lars Grüner-Nielsen, John M. Fini, Tony D. Roberts, Philip Battle, Franz X. Kärtner	***IFCS-EFTF6-B3-2 (Invited)*** **Characterizing the blackbody shift in a lattice clock to 1x10^-18** **Andrew Ludlow**, Kyle Beloy, Jeff Sherman, Nathan Hinkley, Nathaniel Phillips, Nathan Lemke, Marco Schioppo, Chris Oates	***IFCS-EFTF1-B2-2*** **Nonlinear Dynamics in Aluminum Nitride Contour-Mode Resonators** **Nicholas Miller**, Gianluca Piazza
02:45 pm	***IFCS-EFTF5-B1-3*** **Local ties control in application of laser time transfer** **Jan Kodet**, Ulrich Schreiber, Johann Eckl, Ivan Prochazka, Petr Panek		***IFCS-EFTF1-B2-3*** **Close-in Phase Noise Reduction in an Oscillator based on 222 MHz Non-Linear Contour Mode AlN Resonators** **Jeronimo Segovia-Fernandez**, Cristian Cassella, Gianluca Piazza
03:00 pm	***IFCS-EFTF5-B1-4*** **Single Photons Optical Two-Way Time Transfer Providing Picosecond Accuracy** **Ivan Prochazka**, Josef Blazej, Jan Kodet, Petr Panek	***IFCS-EFTF6-B3-3*** **First spectroscopy of the 1S0 – 3P0 transition in Lamb-Dicke confined magnesium atoms** **André Kulosa**, Steffen Rühmann, Dominika Fim, Klaus Zipfel, Wolfgang Ertmer, Ernst M. Rasel	***IFCS-EFTF1-B2-4*** **MEMS-based mechanical AGC for oscillator circuits** **Andreja Erbes**, Xueyong Wei, Ashwin Seshia
03:15 pm	***IFCS-EFTF5-B1-5*** **Implementing a nationwide robust time- and frequency** **Per Olof Hedekvist**, Sven-Christian Ebenhag, Carsten Rieck, Kenneth Jaldehag, Jonatan Walck, Patrik Fältström, Peter Löthberg, Ove Landberg, Håkan Swedenborg	***IFCS-EFTF6-B3-4*** **Mercury optical lattice clock at LNE-SYRTE** Sebastien Bize, **Rinat Tyumenev**	***IFCS-EFTF1-B2-5*** **A 1 GHz SAW oscillator on epitaxial GaN/Si semi-conductor substrate: toward integrated frequency sources** Marc Faucher, Gilles Martin, Jean-Michel Friedt, **Sylvain Ballandras**

Monday, July 22 2013 - IFCS-EFTF

03:30 pm – 04:30 pm	Poster Session and Student Paper Competition (SPC)and Refreshments		
04:30 pm -06:00 pm	**Oral --- Monday, July 22 2013**		
	Session IFCS-EFTF5-C1. GNSS and Services *Chair:* **Alexander Kuna**	***Session IFCS-EFTF6-C3. Optical Combs I*** *Chair:* **Jason Jones**	***Session IFCS-EFTF4-C2. Emerging Sensors*** *Chair:* **Mauricio Pereira da Cunha**
	SMALL HALL	**CLUB H**	**CLUB A**
04:30 pm	***IFCS-EFTF5-C1-1*** **Technical Status of Galileo Development** **Alexander Mudrak**	***IFCS-EFTF6-C3-1*** **Soliton Mode Locking in Microresonator Frequency Combs** **Tobias Kippenberg**	***IFCS-EFTF4-C2-1*** **Silicon MEMS resonators: a story from signal processing devices to Atomic Force Microscopy sensors** **Bernard Legrand**, Marc Faucher, Lionel Buchaillot, Estelle Mairiaux, Benjamin Walter, Zhuang Xiong
05:00 pm	***IFCS-EFTF5-C1-2*** **Absolute Timing Calibration of a GPS/Galileo Combined Receiver** **Blair Fonville**, Edward Powers, Alexander Mudrak, Rigas Ioannides, Joerg Hahn	***IFCS-EFTF6-C3-2*** **Low-noise 1-micron optical frequency comb based on diode-pumped solid-state laser technology** **Steve Lecomte**, Stefan Kundermann, Erwin Portuondo-Campa, Jonathan Bennès	***IFCS-EFTF4-C2-2*** **The Optoelectronic Oscillator as an Acoustic Sensor** Olukayode Okusaga, James Cahill, Justin Pritchett, Ryan Sorenson, Weimin Zhou, Morris Berman, Gary Carter,**Curtis Menyuk**
05:15 pm	***IFCS-EFTF5-C1-3*** **Research and Compare of Timing Methods for Compass Satellite Navigation System** **Hai Sha**, Gang Ou	***IFCS-EFTF6-C3-3*** **Terahertz activities based on an optical frequency comb** **Motohiro Kumagai**, Shigeo Nagano, Hiroyuki Ito, Masatoshi Kajita, Yuko Hanado	***IFCS-EFTF4-C2-3*** **TOWARDS A SAW BASED PHONONIC CRYSTAL SENSOR PLATFORM** **Ralf Lucklum**, Mikhail Zubtsov, Marc-Peter Schmidt, Alexandr Oseev, Soeren Hirsch, Falk Hagemann
05:30 pm	***IFCS-EFTF5-C1-4*** **Performances of EGNOS Network Time : an update** **Jerome Delporte**, Norbert Suard, Pierre Uhrich	***IFCS-EFTF6-C3-4*** **Robust, frequency-stable and accurate mid-IR laser spectrometer based on frequency comb metrology of quantum cascade lasers up-converted in orientation-patterned GaAs** **Stephan Schiller**	***IFCS-EFTF4-C2-4*** **Absolute phase and amplitude mapping of surface acoustic wave fields** **Damien Teyssieux**, Thomas Baron, Jean-Michel Friedt, Pascal Vairac
05:45 pm	***IFCS-EFTF5-C1-5*** **Exponential Degrading of NTP Synchronization with Number of Network Hops** **Akihiko Machizawa**, Tsukasa Iwama	***IFCS-EFTF6-C3-5*** **Long distance phase-coherent link between near- and mid-infrared frequencies** **Bérengère Argence**, Bruno Chanteau, Olivier Lopez, Daniele Nicolodi, Giorgio Santarelli, Christian Chardonnet, Christophe Daussy, Benoît Darquié, Yann Le Coq, Anne Amy-Klein	***IFCS-EFTF4-C2-5*** **Mapping Thermomechanical Vibrations and Mode Shapes in High Frequency SiC-on-Insulator Nanoscale Resonators** **Jaesung Lee**, Zenghui Wang, Mehran Mehregany, Philip Feng

01:00 pm - 02:00 pm and 3:30 pm – 4:30 pm	Poster --- Monday & Tuesday, July 22 2013			Forum Hall
Session IFCS-EFTF1-PAB1. IFCS-EFTF Group 1 poster session 1 *Chair:* **Derek Puccio**	***IFCS-EFTF1-PAB1-8*** **Mechanically Coupled SOI Lame-Mode Resonator-Arrays: Synchronized Oscillations with High Q Factors of 1 Million** Yuanjie Xu, **Joshua E.-Y. Lee**	***IFCS-EFTF2-PAB2-4*** **Low phase noise microwave analog optical link performance study for high dynamic environment platform** **Jean-Marc LESAGE**, Mathieu LE PIPEC	***IFCS-EFTF2-PAB2-12*** **Phase noises of GaN-based surface acoustic wave oscillator** **Rimantas Miðkinis**, Emilis Urba, Dmitrij Smirnov, Albertas Sereika, Romualdas Rimeika, Daumantas Èiplys	***IFCS-EFTF2-PAB2-20*** **All-Digital Frequency Synthesis based on Single-Bit Nyquist-Rate Sinewave Quantization with IID Random Dithering** Paul Sotiriadis, **Natalia Miliou**
IFCS-EFTF1-PAB1-1 **Improving frequency Control of Temperature Compensated Surface Acoustic Wave Devices** Michael Gutkin, **Sergey Mishin**	***IFCS-EFTF1-PAB1-9*** **A Parallel-Class Thermally-Actuated Micromechanical Filter with Tunable Center Frequency and Bandwidth** Cheng Tu, **Joshua E.-Y. Lee**	***IFCS-EFTF2-PAB2-5*** **Evaluation of the accuracy of the method for measuring state-of-the-art ultra-high stability quartz crystal oscillators** **Patrice Salzenstein**, Alexander Kuna, Frédéric Lefebvre	***IFCS-EFTF2-PAB2-13*** **Balanced SAW Oscillator in Composite Configuration with Colpitts and Cross-Coupled Pair** **Yao Huang Kao**	***Session IFCS-EFTF3-PAB3. IFCS-EFTF Group 3 poster session 1*** *Chair:* **Elizabeth Donley**
IFCS-EFTF1-PAB1-2 **Investigation of the electrode coating influence on the frequency temperature characteristics of the resonators operating at the rotated Y-cut Ca3TaGa3Si2O14 single crystals** Andrey MEDVEDEV, **Sergey Sakharov**	***IFCS-EFTF1-PAB1-10*** **Anomalous DC-Current-Induced Attenuation of Q Factor in a Silicon Contour Mode Micromechanical Resonator** **Haoshen Zhu**, Cheng Tu, Joshua Lee	***IFCS-EFTF2-PAB2-6*** **Measurements of Intrinsic Phase Fluctuations in a Cryogenic Microwave Amplifier** **Romain Bara-Maillet**, Stephen R. Parker, Eugene N. Ivanov, Jean-Michel Le Floch, Michael E. Tobar	***IFCS-EFTF2-PAB2-14*** **Integrating performance and production oriented design of satellite oscillators** Harri Eskelinen, Pekka Eskelinen, **Kim Blomqvist**	***IFCS-EFTF3-PAB3-1*** **Comparative Performance of Compact Schemes of Atomic Beam Longitudinal Deceleration Designed for Space Based Frequency Standards** **Vadim Zholnerov**, Anton Vershovskii, Yuri Rozhdestvenskiy
IFCS-EFTF1-PAB1-3 **IR-reflectance assessment of the tilt angle of AlN-wurtzite films for shear mode resonators** **Jimena Olivares**, Mario de Miguel-Ramos, Enrique Iborra, Marta Clement, Milena Moreira, Ilia Katardjiev	***IFCS-EFTF1-PAB1-11*** **Multimode Characteristics in Mechanically-Coupled Silicon Carbide (SiC) Nanowire Array Resonators** **Rui Yang**, Jaesung Lee, Zenghui Wang, Philip Feng	***IFCS-EFTF2-PAB2-7*** **VERY LOW POWER CONSUMPTION, ULTRA LOW PHASE MOISE, MINIATURE CONVENTIONAL OCXO** Roman Boroditsky, **jorge Gomez**	***IFCS-EFTF2-PAB2-15*** **Redundant Frequency Source with Seamless Switchover** **Shaohua Shi**, Xiaohui Li, Sheng Tang	***IFCS-EFTF3-PAB3-2*** **Medium- to Long-Term Frequency Stability of High-Performance CW Double-Resonance Rb standard** **Thejesh Bandi**, Christoph Affolderbach, Camillo Stefanucci, Francesco Merli, Anja Skrivervik, Gaetano Mileti

IFCS-EFTF1-PAB1-4 **Measurement of independent piezoelectric constants of a lanthanumgallium silicate family crystals by x-ray diffraction method** Oleg Buzanov, **Dmitrii Irzhak**, Dmitry Roshchupkin	***Session IFCS-EFTF2-PAB2. IFCS-EFTF Group 2 poster session 1*** *Chair:* **Fabrice Sthal**	***IFCS-EFTF2-PAB2-8*** **Phase Group Characteristic Based Frequency Measurement Method with Wide Band and Fast Response** **Shaofeng Dong**, Wei Zhou, Wei Hu, Jinsong Zhan	***IFCS-EFTF2-PAB2-16*** **Programmable Delay Controller Allowing Frequency Synthesis and Arbitrary Binary Waveform Generation** **Marek Peca**, Michael Vacek, Vojtěch Michálek	***IFCS-EFTF3-PAB3-3*** **Dynamic Stark Effect in the Rubidium End Resonance with Laser Pumping** Alexey Baranov, Sergey Ermak, **Vladimir Semenov**
IFCS-EFTF1-PAB1-5 **Method of controlling coupling coefficient in sputtered Aluminum Scandium Nitride for high volume production** Michael Gutkin, **Sergey Mishin**	***IFCS-EFTF2-PAB2-1*** **Study of Phase Noise in VCXO with Inversion-Mode Varac-tors** **Yao Huang Kao**	***IFCS-EFTF2-PAB2-9*** **Event Timing Device Providing Subpicosecond Precision** Petr Panek, **Jan Kodet**, Ivan Prochazka	***IFCS-EFTF2-PAB2-17*** **An Efficient Room Temperature Only (RTO) Trimming Solution for an Accurate Self-Compensated Oscillator (SCO)** Ahmed El-Kholy, Ayman Ahmed, Mostafa Shadoufa, Mostafa Sakr, Ahmed El-Sayed, Mahmoud Yousef, **Ahmed Helmy**, Mohamed Essam, Nabil Sinoussi	***IFCS-EFTF3-PAB3-4*** **2nd-Harmonic Signals in Vapor-Cell Clocks as a Measure of Error-Signal Quality** **James Camparo**, Gilda Fathi
IFCS-EFTF1-PAB1-6 **High temperature perovskite-structured BiFeO3-PbTiO3-Bi(Zn1/2Ti1/2)O3 piezoelectric ceramics** **Jian Yu**, Xianbo Hou	***IFCS-EFTF2-PAB2-2*** **A low-phase-noise 4.72-5.58-GHz LC-VCO design** **Yung-Hsiang Ho**, Chia-Yu Yao	***IFCS-EFTF2-PAB2-10*** **Sub – 10 fs Jitter S-Band Oscillators and VCOs in a 1 X 1 X 0.23 mm3 Chip Scale Package** **Steve Gilbert**, Fan Zhang, Reed Parker, Martha Small, Lori Callighan, Steve Ortiz, Rich Ruby	***IFCS-EFTF2-PAB2-18*** **GRAIL USOs; Another In-Flight Quartz Radiation Experiment** **Gregory Weaver**, Sami Asmar, Kamal Oudrhiri	***IFCS-EFTF3-PAB3-5*** **Higher-order Sideband Excitation for Pulsed CPT Atomic Clocks** **Shigeyoshi Goka**, Yuichiro Yano
IFCS-EFTF1-PAB1-7 **Optimization of tether geometry to achieve low anchor loss in Lamé mode resonators** **Vikram Thakar**, Mina Rais-Zadeh	***IFCS-EFTF2-PAB2-3*** **Using 2-Bit Counter to Predict the Starting SAR Bit for a Fast-Locking Wide-Range All-Digital DLL** **Yung-Hsiang Ho**, Chia-Yu Yao	***IFCS-EFTF2-PAB2-11*** **The Measurement of Transient Stability With High Resolution** **Lina Bai**, Wei Zhou	***IFCS-EFTF2-PAB2-19*** **Long-Term Stability of a MEMS Disk Oscillator** **Tristan Rocheleau**, Thura Lin Naing, Clark Nguyen	***IFCS-EFTF3-PAB3-6*** **The NPL Primary Frequency Standard System** **Krzysztof Szymaniec**, Stephen Lea, Kun Liu, Peter Whibberley

01:00 pm - 02:00 pm and 3:30 pm – 4:30 pm	Poster --- Monday & Tuesday, July 22 2013			Forum Hall
IFCS-EFTF3-PAB3-7 **Reducing the Blackbody Radiation Shift in the NIM new fountain design** **Fang Fang**	***IFCS-EFTF3-PAB3-15*** **A waveguide cavity fot miniature Rb atomic clock** **Thomas Cao**, Leiji Liu, Lin Yang, xingshi zheng	***IFCS-EFTF4-PAB4-5*** **Software Defined Radio for Passive Sensor Interrogation** **James Humphries**, Donald Malocha	***IFCS-EFTF5-PAB5-3*** **An FPGA implementation of the Distributed RF over White Rabbit** **Pedro Moreira**, Javier Serrano, Pablo Sanchez, Tomasz Wlostowski, Izzat Darwazeh	***IFCS-EFTF5-PAB5-11*** **Interpolating time counter with a multi-edge coding** **Ryszard Szplet**, Dominik Sondej, Grzegorz Grzêda
IFCS-EFTF3-PAB3-8 **Improvements of the atomic fountain clock at SIOM** Yuanbo Du, **Rong Wei**, Richang Dong, Yuzhu Wang	***IFCS-EFTF3-PAB3-16*** **Experimental study on mutual injection locked VCSELs** **Bozhong Tan**, Jiehua Chen, Sihong Gu	***IFCS-EFTF4-PAB4-6*** **Induced surface roughness to promote the growth of tilted AlN films for shear mode resonators** **Mario de Miguel-Ramos**, Marta Clement, Jimena Olivares, Jose Capilla, Jesus Sangrador, Enrique Iborra	***IFCS-EFTF5-PAB5-4*** **Calibration System For Stopwatches** **Ahmad Sahar Omar**, Erik Dierikx, Roland van Bemmelen, Peter van Otterloo, Mohd Fauzi Othman, Mohd Nasir Zainal Abidin	***IFCS-EFTF5-PAB5-12*** **Managment and monitoring layer of optical network for time and frequency transfer** **Jacek Kolodziej**
IFCS-EFTF3-PAB3-9 **Design and realization of a low phase gradient microwave cavity for a continuous atomic fountain clock** Laurent Devenoges, Gianni Di Domenico, André Stefanov, Pierre Thomann, Laurent-Guy Bernier, **Jacques Morel**	***IFCS-EFTF3-PAB3-17*** **Effect of the coherent population trapping on saturated absorption resonances in Cs vapor** **Ersoy Þahin**, Ramiz Hamid, Azad Ch.Izmailov	***IFCS-EFTF4-PAB4-7*** **GNURadio as a digital signal processing environment: application to acoustic wireless sensor measurement and time & frequency analysis of periodic signals** **Jean-Michel Friedt**	***IFCS-EFTF5-PAB5-5*** **Analysis of the Sagnac Effect on the Accuracy of the Long Haul Optical Fiber Time Transfer System** Yu Longqiang, **Lu Lin**, Wang Rong, Jing Jisong, Wu Chuanxin, Zhu Yong, Zhang Baofu	***IFCS-EFTF5-PAB5-13*** **Precision Time-Transfer over Optical Fiber Using an FPGA-based Time-Transfer Modem** **Michael Wouters**, Magnus Hsu
IFCS-EFTF3-PAB3-10 **Preliminary results of the microwave frequency standard based on 113Cd+ ions** **Jianwei Zhang**, Shiguang Wang, Kai Miao, Zhengbo Wang, Lijun Wang	***Session IFCS-EFTF4-PAB4. IFCS-EFTF Group 4 poster session 1*** *Chair:* **Paul Muralt**	***IFCS-EFTF4-PAB4-8*** **Modeling and Analysis of a Liquid-Level Sensor Utilizing an Evanescent Field of a Trapped-Energy Vibrator** **Ken Yamada**, Tatsuya Ishioka, Naoki Aita	***IFCS-EFTF5-PAB5-6*** **Interlaboratory Comparisons for Frequency Calibration: A First Two-Year Campaign in Italy** Franco Cordara, **Diego Orgiazzi**, Valerio Pettiti	***IFCS-EFTF5-PAB5-14*** **Fiber-optic Time and Frequency Transfer based on RF Carrier Phase and Pseudorandom Noise Code** Wenke Yang, Hang Gong, Long Huang, Xiangwei Zhu,**Guangfu Sun**

IFCS-EFTF3-PAB3-11 **Sub-mm scale optical fiber guided deep ultra-violet optical source for trapped mercury ion clocks** Lin Yi, Eric Burt, Shouhua Huang, **Robert Tjoelker**	***IFCS-EFTF4-PAB4-1*** **Wireless temperature sensing of fast rotating objects** **René Fachberger**	***IFCS-EFTF4-PAB4-9*** **The GaPO4 biosensor's affinity and its electronic evaluation** **Jaroslav Nosek**, Milan Koláø	***FCS-EFTF5-PAB5-7*** **Dual-Mixer Time-Difference Measurment system using Discrete Fourier Transformation** **Shinya Yanagimachi**	***IFCS-EFTF5-PAB5-15*** **Study on the Method of Measuring and Estimating the Time Synchronization Accuracy under Constellations Autonomous Operation based on the Ground Testing System** **Ren Xiaoqian**, Qin Weijin, Wu Haitao, Hua Yu, Yuan Haibo
IFCS-EFTF3-PAB3-12 **Real Time Monitoring of the LNE-SYRTE Clock and Oscillator Ensemble and Applications** **Michel Abgrall**, Baptiste Chupin, Daniele Rovera, Jocelyne Guéna, Sébastien Bize, Peter Rosenbusch, Michel Lours, Philippe Laurent	***IFCS-EFTF4-PAB4-2*** **Packageless temperature sensor based on AlN/IDT/ZnO/Silicon layered structure** **Ouarda legrani**, Omar Elmazria, Meriem Elhosni, Sergei Zhgoon, Ausrine Bartasyte, Philippe Pigeat	***Session IFCS-EFTF5-PAB5. IFCS-EFTF Group 5 poster session 1*** *Chair:* **Philip Tuckey**	***IFCS-EFTF5-PAB5-8*** **Frequency reference transfer via optical fiber based on RF photonic phase shifter** **Jianguo Shen**, Guiling Wu	***IFCS-EFTF5-PAB5-16*** **Ultra-Short Term Clock Offset Prediction for Two-Way Satellite Time Synchronization** **Zhang Shengkang**, Zhang li, Yang Yujie
IFCS-EFTF3-PAB3-13 **Physics of systematic frequency drift of active hydrogen masers with autonomous cavity auto tuning** **Vladimir Vasilyev**	***IFCS-EFTF4-PAB4-3*** **Piezoelectric and electroacoustic properties of V-doped and Ta-doped AlN** **Enrique Iborra**, Valeriy Feldmestger, Mikhail Mikhov, Jose Capilla, Jimena Olivares, Marta Clement	***IFCS-EFTF5-PAB5-1*** **Frequency Stability Estimation of Compass On-Board Clock Based on Smoothed Broadcast Ephemeris** **Hang Gong**, Wenke Yang, Zengjun Liu, Xiangwei Zhu, Feixue Wang	***IFCS-EFTF5-PAB5-9*** **Evaluation of a High Performance Continuous Time Interval Analyzer for Measuring Phase Stability** **Glenn Bideberg**, Sven-Christian Ebenhag, Per Olof Hedekvist, Freddy Ben-Zeev, Ron Sigura	***IFCS-EFTF5-PAB5-17*** **A Measurement Method of the GEO Satellite Local Oscillator Error** **jing wenfang**, lu xiaochun, wang danni, zhang fuchen
IFCS-EFTF3-PAB3-14 **Active H-maser with increase power of the output signal** **Mikhail Aleynikov**, Alexander Boyko	***IFCS-EFTF4-PAB4-4*** **Evaluation of the acoustical properties of adhesive-free dual layer piezoelectric PVDF copolymer Transducer** **Adit Decharat**, Sanat Wagle, Frank Melandso	***IFCS-EFTF5-PAB5-2*** **The Test and Evaluation of GPS On-board Clock** Yongliang XU, **Wei LI**	***IFCS-EFTF5-PAB5-10*** **OPTIME – time and frequency dissemination system based on fiber optical network – PIONIER** **Marcin Lipiñski**, Jerzy Nawrocki, Albin Czubla, Janusz Pieczerak, Wojbor Bogacki, Waldemar Adamowicz, Artur Binczewski, Piotr Dunst, Jacek Igalson, Jacek Ko³odziej, Przemys³aw Krehlik, Dariusz	***IFCS-EFTF5-PAB5-18*** **Research on Calibration of TWSTFT Link by GPS** **Zhiqiang Yang**, Kun Liang, Qinghua Xu, Aimin Zhang

01:00 pm - 02:00 pm and 3:30 pm – 4:30 pm	Poster --- Monday & Tuesday, July 22 2013			Forum Hall
IFCS-EFTF5-PAB5-19 **Precision Analysis of Non-continuous Two-way Satellite Time Comparison** Pei Wei, Xuhai Yang, Ji Guo, Zhigang Li,**Weijin Qin**	***IFCS-EFTF5-PAB5-27*** **Combination of T2L2 and GPS-CP data : Towards an improvement of Time Transfer Accuracy** **Philippe Guillemot**, Pierre Exertier, Etienne Samain, Myrtille Laas-Bourez, Jerome Delporte	***IFCS-EFTF6-PAB6-5*** **A transportable optical lattice clock using 171Yb** **Gregor Mura**, Axel Görlitz, Charbel Abou Jaoudeh, Tobias Franzen, Heiko Luckmann, Alexander Nevsky, Ingo Ernsting, Stefan Schiller	***IFCS-EFTF6-PAB6-13*** **Compact and Dual Ti: Sapphire Comb Lasers Pumped by Single Fiber Laser** Tze-Wei Liu, **Shinn Yan Lin**, Chien-Ming Wu, Wang-Yau Cheng	
IFCS-EFTF5-PAB5-20 **The building algorithm of system time of auto-navigation constellation** **Qin Weijin**, Sun Baoqi, Yang Xuhai, Guo Ji, Wei Pei	***IFCS-EFTF5-PAB5-28*** **The STE-QUEST Mission: Objectives and Mission Design, Spacecraft, Science Payload and Time & Frequency Links** **Marc Peter Heß**, Gerald Hechenblaikner	***IFCS-EFTF6-PAB6-6*** **Improved set-up for the Ytterbium Optical Clock at INRiM** **Marco Pizzocaro**, Luca Lorini, Davide Calonico, Giovanni A. Costanzo, Filippo Levi	***IFCS-EFTF6-PAB6-14*** **Optical Frequency Measurement Comparison Using Fiber Laser Combs between CMS and NMIJ** **Jin-Long Peng**, Ren-Huei Shu, Tze-An Liu, Hajimei Inaba, Kazumoto Hosaka, Masami Yasuda, Daisuke Akamatsu, Atsushi Onae, Feng-Lei Hong	
IFCS-EFTF5-PAB5-21 **Research On Technology of Pseudo-range measurement for CMMB** Changjiang Huang, Yu Hua, Yonghui Hu, **Yu Xiang**, Daopeng Dong	***IFCS-EFTF5-PAB5-29*** **BDS Satellite Orbit Determination Based on Inter-satellite and Satellite-to-station Ranging** **Donghui Wang**	***IFCS-EFTF6-PAB6-7*** **An Improved Single-Ion End-Cap Trap for Optical Clocks** **Peter Nisbet-Jones**	***IFCS-EFTF6-PAB6-15*** **Experimental Setup of Cs Active Optical Clock** **Zhichao Xu**, Yanfei Wang, Dongying Wang, Xiaogang Zhang, Xiaobo Xue, Duo Pan, Wei Zhuang, Jingbiao CHEN	
IFCS-EFTF5-PAB5-22 **Satellite Clock Modelling and Multi-GNSS Solutions** **Etienne Orliac**, Rolf Dach, Kan Wang, Markus Rothacher, Urs Hugentobler, Drazen Svehla	***Session IFCS-EFTF6-PAB6. IFCS-EFTF Group 6 poster session 1*** *Chair:* **Sébastien Bize**	***IFCS-EFTF6-PAB6-8*** **Progress report of an 27Al+ ion optical clock** Ke Deng, Zetian Xu, Wenhao Yuan, Jie Zhang,**Zehuang Lu**, Jun Luo	***IFCS-EFTF6-PAB6-16*** **Dispersion Detection of Optical Clock Transition in Thermal Atomic Beam** **Xiaogang Zhang**, Xiaobo Xue, Duo Pan, Wei Zhuang, Jingbiao CHEN	

IFCS-EFTF5-PAB5-23 **Real-Time Remote Calibration (RTRC) System for Time and Frequency** **Kun Liang**, Fei Zuo, Chao Pei, Side Zhang	***IFCS-EFTF6-PAB6-1*** **Optically trapping of magnesium for a lattice based frequency standard** **Klaus Zipfel**, André Kulosa, Dominika Fim, Steffen Rühmann, Wolfang Ertmer, Rasel Ernst	***IFCS-EFTF6-PAB6-9*** **Progress Report on the Development of Ultra-stable Lasers for Al+ Optical Clocks** **Yingxin Luo**, Bing Ouyang, Xiaoyi Zeng, Jie Zhang, Zehuang Lu, Jun Luo	***IFCS-EFTF6-PAB6-17*** **Testing Optical Clock Calibration Procedures: Absolute Frequency Measurement of Rubidium 5S-7S Two-Photon Transitions** **Michal Zawada**, Piotr Ablewski, Wojciech Gawlik, Rafal Gartman, Piotr Maslowski, Piotr Morzynski, Bartlomiej Nagorny, Filip Ozimek, Czeslaw Radzewicz, Piotr Wcislo, Marcin Witkowski, Roman Ciurylo	
IFCS-EFTF5-PAB5-24 **The Application of VRS in Common-View Based One-Way Timing Method** **Xu Longxia**, Guo Meijun	***IFCS-EFTF6-PAB6-2*** **Towards one single highly stable master laser for the interro-gation of SYRTE's Sr and Hg optical lattice clocks** **Katharina Predehl**, Daniele Nicolodi, Ulrich Eismann, Rodolphe Le Targat, Jérôme Lodewyck, Chunyan Shi, Rinat Tyumenev, Sebastien Bize, Yann Le Coq	***IFCS-EFTF6-PAB6-10*** **An ultrastable optical oscillator for a magnesium lattice clock** **Dominika Fim**, André Kulosa, Steffen Rühmann, Klaus Zipfel, Wolfgang Ertmer, Ernst M. Rasel	***IFCS-EFTF6-PAB6-18*** **Compact Methane Based OFS with 3•10-15 short term stability** **Mikhail Gubin**	
IFCS-EFTF5-PAB5-25 **Precise Point Positioning with integer ambiguities in the Atomium software** **Mari Carmen Martinez Belda**, Pascale Defraigne	***IFCS-EFTF6-PAB6-3*** **Transportable Strontium optical lattice clock** Nicola Poli, Soroosh Alighanbari, Geoffrey Barwood, Qun-Feng Chen, Ingo Ernsting, Patrick Gill, Alexander Nevsky, Stephan Schiller, Marco Schioppo, Lyndsie Smith, Denis Sutyrin, **Guglielmo Tino**, Stephan Vogt	***IFCS-EFTF6-PAB6-11*** **External Cavity Diode Laser at 420 nm Wavelength for Atomic Spectroscopy** **Xi Zeng**, Dmitri Boiko	***IFCS-EFTF6-PAB6-19*** **Iodine stabilized IR laser sources** **Nicola Chiodo**, Natascia Castagna, Michel Lours, David Holleville, Yann Le Coq, Frédéric Du-Burck, Ouali Acef	
IFCS-EFTF5-PAB5-26 **A Detection Algorithm of Frequency Jumps for GNSS Satellite Clocks** **Xinming Huang**	***IFCS-EFTF6-PAB6-4*** **Comparison of Sr optical lattice clocks** **Chuyan Shi**, Ulrich Eismann, Mikhail Gurov, Rodolphe Le Targat, Jérôme Lodewyck	***IFCS-EFTF6-PAB6-12*** **Stable frequency comparison of different optical clocks** **Christian Grebing**, Burghard Lipphardt, Stephan Falke, Nils Huntemann, Nathan Lemke, Thomas Legero, Christian Hagemann, Uwe Sterr, Christian Tamm, Ekkehard Peik, Christian Lisdat, Harald Schnatz		

01:00 pm - 02:00 pm and 3:30 pm – 4:30 pm	The 24 student poster finalist--- Monday & Tuesday, July 22 2013			Forum Hall
Session IFCS-EFTF-SPC. IFCS-EFTF Student Poster Competition *Chair:* **Leonhard Reindl**	***IFCS-EFTF-SPC-8*** **Resonantly enhanced Fe3+ spin-spin interaction in cryogenic sapphire** **Jeremy Bourhill**, Karim Benmessai, Maxim Goryachev, Daniel Creedon, Warrick Farr, Michael Tobar	***IFCS-EFTF-SPC-16*** **Microwaves generation from mode-locked Er-fiber lasers with sub-fs-level absolute timing jitter** **Kwangyun Jung**, Junho Shin, Jungwon Kim	***IFCS-EFTF-SPC-24*** **Micromechanical Disk Array-Composite for Enhanced Frequency Stability Against Bias Voltage Fluctuations** **Lingqi Wu**, Mehmet Akgul, Zeying Ren, Clark Nguyen	
IFCS-EFTF-SPC-1 **An Integrated SAW Sensor with Direct Write Antenna** **Mark Gallagher**, William Smith, Donald Malocha	***IFCS-EFTF-SPC-9*** **Short term noise investigation on compact CPT clocks** **Jean-Marie Danet**, Peter Yun, Stephane Guerandel, Emeric de Clercq	***IFCS-EFTF-SPC-17*** **Optical lattice clocks with 87Sr in a cryogenic environment** **Ichiro Ushijima**, Takuya Ohkubo, Manoj Das, Masao Takamoto, Hidetoshi Katori		
IFCS-EFTF-SPC-2 **Nanomechanical mass spectrometry for the characterization of high mass nanoparticles** **Eric Sage**, Ariel Brenac, Robert Morel, Cécilia Dupré, Carine Marcoux, Henri Blanc, Mehmet Selim Hanay, Scott Kelber, Michael Roukes, Eric Colinet, Laurent Duraffourg, Sébastien Hentz	***IFCS-EFTF-SPC-10*** **MiniAtom: realization of a compact atomic gravimeter** **Jean Lautier**, Baptiste Battelier, Arnaud Landragin, Philippe Bouyer	***IFCS-EFTF-SPC-18*** **First spectroscopy of the 1S0 – 3P0 transition in Lamb-Dicke confined magnesium atoms** **André Kulosa**, Steffen Rühmann, Dominika Fim, Klaus Zipfel, Wolfgang Ertmer, Ernst M. Rasel		
IFCS-EFTF-SPC-3 **Micro-electro-mechanical resonant tilt sensor with 250 nano-radian resolution** **Xudong Zou**, Pradyumna Thiruvenkatanathan, Ashwin Seshia	***IFCS-EFTF-SPC-11*** **Spatially Resolved Measurement of Relaxation Times in a Microfabricated Vapor Cell** **Andrew Horsley**, Guan-Xiang Du, Philipp Treutlein, Matthieu Pellaton, Christoph Affolderbach, Gaetano Mileti	***IFCS-EFTF-SPC-19*** **Optical lattice clocks near the QPN limit: A tenfold improvement in optical clock stability** **Travis Nicholson**, Michael Martin, Jason Williams, Benjamin Bloom, Michael Bishof, Matthew Swallows, Sara Campbell, Jun Ye		

IFCS-EFTF-SPC-4 **Mapping Thermomechanical Vibrations and Mode Shapes in High Frequency SiC-on-Insulator Nanoscale Resonators** **Jaesung Lee**, Zenghui Wang, Mehran Mehregany, Philip Feng	***IFCS-EFTF-SPC-12*** **Towards a Large-Scale, Optical Timing Distribution System with Sub-Femtosecond Residual Timing Jitter** **Michael Y. Peng**, Patrick T. Callahan, Amir H. Nejadmalayeri, Stefano Valente, Kemal Ahmed, Ming Xin, Eric Monberg, Man Yan, Lars Grüner-Nielsen, John M. Fini, Tony D. Roberts, Philip Battle, Franz X.	***IFCS-EFTF-SPC-20*** **A 120-µW GSM Phase Noise-Compliant Pierce Oscillator Referenced to a 61-MHz Wine-Glass Disk Resonator** **Thura Lin Naing**, Tristan Rocheleau, Elad Alon, Clark Nguyen		
IFCS-EFTF-SPC-5 **Design of Ultra-Low-Power (2.5µW) 1GHz Low Phase Noise Pierce Oscillator with Nanowire NEMS Resonator** **Hamidreza Zamani**, Philip Feng	***IFCS-EFTF-SPC-13*** **Optical Frequency Transfer over a single-span 1840 km Fiber Link** **Stefan Droste**, Filip Ozimek, Sebastian Raupach, Harald Schnatz, Gesine Grosche, Theodor W. Hänsch, Thomas Udem, Ronald Holzwarth	***IFCS-EFTF-SPC-21*** **A 2.8 GHz Combined Mode of Vibration Aluminum Nitride MEMS Resonator with High Figure of Merit Exceeding 45** **Yu Hui**, Zhenyun Qian, Matteo Rinaldi		
IFCS-EFTF-SPC-6 **High spectral purity microwave and terahertz oscillator** **Gwennaël Danion**, François Bondu, Goulch'en Loas, Ludovic Frein, Cyril Hamel, Anthony Carré, Steve Bouhier, Marc Vallet, Marc Brunel, Antoine Rolland, Mehdi Alouini, Alain Brillet, Jean-Pierre Coulon, Frédéric Cleva, Mourad Merzougui, Guillaume Ducourneau, Jean-François Lampin,	***IFCS-EFTF-SPC-14*** **A Fiber Optic Gyroscope on multiplexed telecommunication network with a large enclosed area** **Cecilia Clivati**, Davide Calonico, Giovanni Costanzo, Alberto Mura, Marco Pizzocaro, Filippo Levi	***IFCS-EFTF-SPC-22*** **Close-in Phase Noise Reduction in an Oscillator based on 222 MHz Non-Linear Contour Mode AlN Resonators** **Jeronimo Segovia-Fernandez**, Cristian Cassella, Gianluca Piazza		
IFCS-EFTF-SPC-7 **Inverse Relationship between OEO Q-factor and g-sensitivity** **James P. Cahill**, Justin Pritchett, Ryan Sorensen, Morris Berman, Olukayode Okusaga, Weimin Zhou, Gary M. Carter, Curtis R. Menyuk	***IFCS-EFTF-SPC-15*** **Towards large scale metrological fibre network** **Anthony Bercy**, Fabio Stefani, Olivier Lopez, Paul-Eric Pottie, Christian Chardonnet, Anne Amy-Klein, Giorgio Santarelli	***IFCS-EFTF-SPC-23*** **Ion-Sliced Lithium Niobate on Silicon Dioxide for Engineering the Temperature Coefficient of Frequency of Laterally Vibrating Resonators** **Lisha Shi**, Gianluca Piazza		

Tuesday. July 23 2013 - IFCS-EFTF

08:30 am – 10:00 am	**Plenary Session II: UFFC Distinguished Lecturer Award, Ferroelectrics Awards and New Fellows** **ISAF-PFM Plenary talk: Session Chair; Susan Trolier-McKinstry, *the Pennsylvania State University*** **Plenary speaker: Kenji Uchino, *ONR Global-Asia & the Pennsylvania State University, USA,* Piezoelectric Actuator Renaissance** **Congress Hall**
10:00 am – 10:30 am	**Refreshments**
10:30 am -12:00 pm	**Oral --- Tuesday, July 23 2013**

	Session IFCS-EFTF5-D2. Optical Fiber T+F Transfer II *Chair:* **Helen Margolis** **SMALL HALL**	***Session IFCS-EFTF3-D1. Compact High-Performance Clocks and Sensors*** *Chair:* **John Kitching** **CLUB H**	***Session IFCS-EFTF2-D3. Phase Noise & Performances*** *Chair:* **Jeremy Everard** **CLUB A**
10:30 am	***IFCS-EFTF5-D2-1*** **Controlling distant pulsed laser timing via interferometry** **Russell Wilcox**, Ronald Holzwarth, Giuseppe Rizzelli Martella, Klaus Hartinger	***IFCS-EFTF3-D1-1*** **Miniature trapped-ion frequency standard with 171Yb+** **Peter Schwindt**, Yuan-Yu Jau, Heather Partner, Darwin Serkland, Adrian Casias, Ronald Manginell, Matthew Moorman, Robert Boye, John Prestage, James Kellogg, Nan Yu, Taye Gebrewold, Sheng Chang, Igor Kosvin, Dan Boschen	***IFCS-EFTF2-D3-1*** **Generalized phase measurement and processing with application in the time-frequency measurement control and link** **Wei Zhou**, Zhiqi Li
11:00 am	***IFCS-EFTF5-D2-2*** **Simultaneous remote transfer of accurate timing and optical frequency over a public fiber network** Olivier Lopez, Amale Kanj, **Paul-Eric Pottie**, Daniele Rovera, Joseph Achkar, Christian Chardonnet, Anne Amy-Klein, Giorgio Santarelli	***IFCS-EFTF3-D1-2*** **Absolute frequency of a trapped atom clock** Christian Deutsch, Wilfried Maineult, Vincent Dugrain, Ramon Szmuk, Jakob Reichel,**Peter Rosenbusch**	***IFCS-EFTF2-D3-2*** **Source Impedance Influence on Cross-Correlation Phase Noise Measurements** **Jason Breitbarth**
11:15 am	***IFCS-EFTF5-D2-3*** **Remote synchronization via phase-stabilized chirped continuous-wave frequency transfer** **Sebastian M. F. Raupach**, Gesine Grosche	***IFCS-EFTF3-D1-3*** **Cancellation of Doppler Shifts in a Cold-Atom CPT Clock** **Elizabeth Donley**, Francois-Xavier Esnault, Eric Blanshan, John Kitching	***IFCS-EFTF2-D3-3*** **Phase Noise Measurement Techniques, Associated Uncertainty and Limitations** **Ajay Poddar**, Ulrich Rohde
11:30 am	***IFCS-EFTF5-D2-4*** **LIFT: The Italian Fiber Network For Frequency and Time Distribution** **Filippo Levi**, Roberto Ambrosini, Davide Calonico, Claudio E. Calosso, Cecilia Clivati, Giovanni A. Costanzo, Paolo Denatale, Gianluca Galzerano, Davide Mazzotto, Alberto Mura, Nicola Poli, Guglielmo M. Tino, Massimo Zucco	***IFCS-EFTF3-D1-4*** **Rubiclock: towards the first industry-ready cold-atom clock** **Luigi De Sarlo**, Baptiste Battelier, Natascia Castagna, Michel Lours, David Holleville, Noël Dimarcq	***IFCS-EFTF2-D3-4*** **Phase noise of optomechanical oscillators** **King Yan Fong**, Menno Poot, Xu Han, Hong Tang

Tuesday. July 23 2013 - IFCS-EFTF

11:45 am	***IFCS-EFTF5-D2-5*** **Time and Frequency Optical Transfer Infrastructure** **Vladimir Smotlacha**, Alexander Kuna, Josef Vojtech	***IFCS-EFTF3-D1-5*** **MiniAtom: realization of a compact atomic gravimeter** **Jean Lautier**, Baptiste Battelier, Arnaud Landragin, Philippe Bouyer	***IFCS-EFTF2-D3-5*** **ULISS project : 2013 progress report** **Vincent Giordano**, Serge Grop, Benoît Dubois, Jean-Louis Masson, Gregory Haye, Enrico Rubiola
12:00 pm – 01:00 pm	**Lunch Break**		
01:00 pm – 02:00 pm	**Poster Session and Student Paper Competition (SPC)**		
02:00 pm -03:30 pm	**Oral --- Tuesday, July 23 2013**		
	Session IFCS-EFTF5-E2. ***Two-Way Satellite Time and Frequency Transfer*** *Chair:* **Victor Zhang**	***Session IFCS-EFTF6-E1.*** ***Ultra-stable lasers and resonators*** *Chair:* **Longsheng Ma**	***Session IFCS-EFTF1-E3.*** ***Temperature Stabilization for MEMS*** *Chair:* **Jan H Kuypers**
	SMALL HALL	**CLUB H**	**CLUB A**
02:00 pm	***IFCS-EFTF5-E2-1*** **Development of Carrier Phase Two-Way Satellite Frequency Transfer at NICT** **Miho Fujieda**, Tadahiro Gotoh, Masanori Aida, Jun Amagai, Fumimaru Nakagawa, Hideo Maeno, Ryo Tabuchi, Yuko Hanado	***IFCS-EFTF6-E1-1*** **Tenfold reduction in Brownian noise with crystalline coatings** **Garrett Cole**, Wei Zhang, Michael Martin, Jun Ye, Markus Aspelmeyer	***IFCS-EFTF1-E3-1*** **We Know That MEMS is Replacing Quartz. But Why? And Why Now?** **Aaron Partridge**
02:30 pm	***IFCS-EFTF5-E2-2*** **TWSTFT Calibration Involving Four Sites Using a Mobile Station on a Trailer** **Thorsten Feldmann**, Arvind Balu, Shuo Liu, Wolfgang Schäfer, Andreas Bauch, Jürgen Becker, Dirk Piester, Joseph Achkar, Amale Kanj, Christian Schlunegger	***IFCS-EFTF6-E1-2*** **Ultra-stable laser with fractional long-term drift below 10^-20/s** **Christian Hagemann**, Thomas Legero, Thomas Kessler, Christian Grebing, Uwe Sterr, Fritz Riehle, Michael Martin, Lisheng Chen, Jun Ye	***IFCS-EFTF1-E3-2*** **Ion-Sliced Lithium Niobate on Silicon Dioxide for Engineering the Temperature Coefficient of Frequency of Laterally Vibrating Resonators** **Lisha Shi**, Gianluca Piazza
02:45 pm	***IFCS-EFTF5-E2-3*** **Simulation Study for Commercial Time Transfer Service over Geostationary Satellite** **Jacqueline Walker**, Marco Genova	***IFCS-EFTF6-E1-3*** **Ultra-Stable Cryogenic Optical Resonators -- Towards a Thermal Noise Limited Frequency Stability < 3x10^-17** **Moritz Nagel**, Katharina Möhle, Klaus Döringshoff, Sylvia Schikora, Evgeny V. Kovalchuk, Achim Peters	***IFCS-EFTF1-E3-3*** **Experimental determination of the temperature dependency of elastic constants of degenerately n-doped silicon** **Antti Jaakkola**, Mika Prunnila, Tuomas Pensala, Panu Pekko, James Dekkker
03:00 pm	***IFCS-EFTF5-E2-4*** **Time Service through BD GEO Satellites** **Haibo Yuan**, Fan Yang, Wei Guang	***IFCS-EFTF6-E1-4*** **Laser Frequency Stabilization Using Micro Resonators** **Nan Yu**, Lukas Baumgartel	***IFCS-EFTF1-E3-4*** **Temperature Dependence of the Elastic Constants of Degenerately Doped Single Crystal Silicon** **Eldwin Ng**, Chae Hyuck Ahn, Yushi Yang, Vu Hong, Thomas Kenny

Tuesday. July 23 2013 - IFCS-EFTF

03:15 pm	***IFCS-EFTF5-E2-5*** **Review of Two-way Satellite Time and Frequency Transfer for UTC and TAI generations** **Zhiheng Jiang**	***IFCS-EFTF6-E1-5*** **Laser local oscillators for optical atomic clocks** **David Leibrandt**, Shon Cook, Michael Thorpe, Chin-Wen Chou, Tara Fortier, Scott Diddams, James Bergquist, Till Rosenband	***IFCS-EFTF1-E3-5*** **A Piezoresistive CMOS-MEMS Resonator with High Q and Low TCf** **Cheng-Syun Li**, Ming-Huang Li, Chi-Hang Chin, Chao-Yu Chen, Philip X.-L. Feng, Sheng-Shian Li
03:30 pm – 04:30 pm	**Poster Session and Student Paper Competition (SPC) and Refreshments**		
04:30 pm -06:00 pm	**Oral --- Tuesday, July 23 2013**		
	Session IFCS-EFTF5-F2. ***Global Navigation Satellite Systems*** *Chair:* **Patrizia Tavella**	***Session IFCS-EFTF6-F1.*** ***Ion Clocks*** *Chair:* **Scott Diddams**	***Session IFCS-EFTF4-F3.*** ***Wireless Sensors*** *Chair:* **Leonhard Reindl**
	SMALL HALL	**CLUB H**	**CLUB A**
04:30 pm	***IFCS-EFTF5-F2-1*** **Exploring the performance of GNSS frequency transfer** **Gérard Petit**, Amale Kanj, Aurélie Harmegnies, Jérôme Delporte, Flavien Mercier, Félix Perosanz	***IFCS-EFTF6-F1-1 (Invited)*** **Yb+ single-ion optical frequency standard with systematic uncertainty at the 10^-17 level** Nils Huntemann, Burghard Lipphardt, Christian Sanner, Maxim Okhapkin, Christian Tamm,**Ekkehard Peik**	***IFCS-EFTF4-F3-1*** **An Integrated SAW Sensor with Direct Write Antenna** **Mark Gallagher**, William Smith, Donald Malocha
04:45 pm	***IFCS-EFTF5-F2-2*** **Dual-Frequency Time Transfer Unit for Comparisons of the Remote Clocks Using GLONASS and GPS Signals** **Peter Bogdanov**		***IFCS-EFTF4-F3-2*** **Ultra-Wide-Band SAW sensors and tags** **Marc Lamothe**, Victor Plessky, Thomas Ostertag, Jean-Michel Friedt
05:00 pm	***IFCS-EFTF5-F2-3*** **Advances in multi-GNSS time transfer** **Pascale Defraigne**, Aurélie Harmegnies, Gérard Petit	***IFCS-EFTF6-F1-2*** **Control of the systematic shifts of the 88Sr+ single-ion optical frequency standard at 2 parts in 10^17** **Pierre Dubé**, Alan A. Madej, John E. Bernard	***IFCS-EFTF4-F3-3*** **A Wireless Langasite Resonant Electrical Field/Voltage Sensor** Haifeng Zhang,**Tinghui Fan**
05:15 pm	***IFCS-EFTF5-F2-4*** **Stability of GPS PPP link on the baseline of 270 km com-pared to glass fiber measurements** **Jerzy Nawrocki**, Albin Czubla, Pawe³ Noga¶, Pawe³ Lejba, Dariusz Lemanski, Piotr Dunst, Roman Osmyk, Piotr Szterek	***IFCS-EFTF6-F1-3*** **Measurement of the optical frequency ratio between two clock transitions in a single ion of 171Yb+** **Steven King**, Rachel Godun, Peter Nisbet-Jones, Helen Margolis, Luke Johnson, Patrick Gill	***IFCS-EFTF4-F3-4*** **Resonant SAW Torque Sensor for Wind Turbines** **Victor Kalinin**, Arthur Leigh, Alexander Stopps, Estefania Artigao
05:30 pm	***IFCS-EFTF5-F2-5*** **Time and Frequency Transfer Using Satellite Based Augmentation System GAGAN** Petr Panek,**Alexander Kuna**	***IFCS-EFTF6-F1-4*** **The Optical Frequency Standard of Trapped and Cold 40Ca+** **Hua Guan**, Kelin Gao	***IFCS-EFTF4-F3-5*** **High-overtone Bulk Acoustic Resonator as passive sensor acting a buried cooperative target interrogated by Ground Penetrating RADAR** **Jean-Michel Friedt**, Albane Saintenoy, Thomas Baron, Eric Lebrasseur, Thierry Laroche, Sylvain Ballandras, Madeleine Griselin

05:45 pm	***IFCS-EFTF5-F2-6*** **Preliminary Implementation of Time and Frequency Transfer by BDS** **Kun Liang**, Zhaofeng Jin	***IFCS-EFTF6-F1-5*** **Direct frequency comparison between a single Ca+ clock and a Sr lattice clock** **Kensuke Matsubara**, Hidekazu Hachisu, Shigeo Nagano, Ying Li, Asahiko Nogami, Clayton Locke, Kazuhiro Hayasaka, Mizuhiko Hosokawa, Tetsuya Ido	***IFCS-EFTF4-F3-6*** **Passive Wireless Surface Acoustic Wave CO2 Sensor for Ge-ological Sequestration Sites Monitoring** Yizhong Wang, Minking Chyu, **Qing-Ming Wang**

Wednesday, July 24 2013 -IFCS-EFTF

08:30 am – 10:00 am	**Plenary Session III: Distinguished Service Award, IFCS and EFTF Awards** **IFCS-EFTF Plenary talk: Session Chair; Warren Walls*, US Naval Observatory, USA*** **Plenary speaker: Daniel Kleppner, *MIT-Harvard Centre for Ultracold Atoms*, USA, In Praise of the Useless and the Useful: the Creation of Atomic Clocks** **Congress Hall**
10:00 am – 10:30 am	**Refreshments**
10:30 am -12:00 pm	**Oral --- Wednesday, July 24 2013**

	Session IFCS-EFTF3-G1. Chip-scale atomic clocks *Chair:* **Miao Zhu**	***Session IFCS-EFTF5-G2. Space Missions and Clocks I*** *Chair:* **Pierre Waller**	***Session IFCS-EFTF2-G3. MEMS Oscillators*** *Chair:* **Wan-Thai Hsu**
	SMALL HALL	**CLUB H**	**CLUB A**
10:30 am	***IFCS-EFTF3-G1-1*** **Spatially Resolved Measurement of Relaxation Times in a Microfabricated Vapor Cell** **Andrew Horsley**, Guan-Xiang Du, Philipp Treutlein, Matthieu Pellaton, Christoph Affolderbach, Gaetano Mileti	***IFCS-EFTF5-G2-1*** **T2L2: five years in space** **Pierre Exertier**, Etienne Samain, Philippe Guillemot	***IFCS-EFTF2-G3-1*** **Exploiting Dynamics to Achieve Tiny High-Performance Frequency Sources** **Jeffrey Rogers**
10:45 am	***IFCS-EFTF3-G1-2*** **The Integrated Swiss Miniature Atomic Clock** **Jacques Haesler**, Laurent Balet, Thomas Overstolz, Jörg Pierer, Rony Jose James, David Ruffieux, Steve Lecomte	***IFCS-EFTF5-G2-2*** **ACES MicroWave Link and Ground Segment** **Marc Peter Heß**, Achim Helm, Johannes Kehrer, Wolfgang Schäfer, Luigi Cacciapuoti, Rudolf Much, Lina de Parolis	***IFCS-EFTF2-G3-2*** **Dynamics of Microscale Thin Film AlN Piezoelectric Resonators Enables Low Phase Noise UHF Frequency Sources** **Gianluca Piazza**
11:00 am	***IFCS-EFTF3-G1-3*** **Double resonance spectroscopic studies using a new generation of microfabricated microwave cavity** **Matthieu Pellaton**, Maddalena Violetti, Christoph Affolderbach, Jean-François Zürcher, Anja Skrivervik, Gaetano Mileti	***IFCS-EFTF5-G2-3*** **Towards a free space satellite to ground coherent optical link** **Peter Wolf**	***IFCS-EFTF2-G3-3*** **Single Transistor Oscillator Based on a Graphene-Aluminum Nitride Nano Plate Resonator** **Zhenyun Qian**, Yu Hui, Fangze Liu, Swastik Kar, Matteo Rinaldi
11:15 am	***IFCS-EFTF3-G1-4*** **Short term noise investigation on compact CPT clocks** **Jean-Marie Danet**, Peter Yun, Stephane Guerandel, Emeric de Clercq	***IFCS-EFTF5-G2-4*** **Design of the F&T Subsystem for ESA's Deep Space Antenna 3** **Ainhoa Solana**, Wolfgang Schaefer, Theo Schwall, Maria Ramos, Javier deVicente, Sylvère Froidevaux, Vincent Giordano	***IFCS-EFTF2-G3-4*** **A 120-µW GSM Phase Noise-Compliant Pierce Oscillator Referenced to a 61-MHz Wine-Glass Disk Resonator** **Thura Lin Naing**, Tristan Rocheleau, Elad Alon, Clark Nguyen
11:30 am	***IFCS-EFTF3-G1-5*** **Continuous and Ramsey spectroscopy of CPT resonances in Cs vapor cells with push-pull optical pumping** **Xiaochi Liu**, Jean-Marc Merolla, Stéphane Guérandel, Christophe Gorecki, Emeric De Clercq, Rodolphe Boudot	***IFCS-EFTF5-G2-5*** **Clock Composition by Wiener Filtering Illustrated on Two Atomic Clocks** **Marek Peca**, Vojtech Michalek, Michael Vacek	***IFCS-EFTF2-G3-5*** **A 995MHz Fundamental Nonlinear Quartz MEMS Oscillator** **Robert Nagele**

Wednesday, July 24 2013 -IFCS-EFTF

11:45 am	***IFCS-EFTF3-G1-6*** **A Digitized Atomic Clock Based on Transient Oscillation of Detuned Coherent Population Trapping** **Zhong Wang**	***IFCS-EFTF5-G2-6*** **Characterization of atomic clock anomalies in the dynamic Allan variance domain** **Lorenzo Galleani**, Patrizia Tavella	***IFCS-EFTF2-G3-6*** **Special Considerations for Specifying Oscillator Components with Resonators on the Micro/Nanoscale** **Jon Lovseth**, Ted Hoffmann, Sai Kalyanaraman, Vadim Olen, Jennet Volden, Paul Opsahl
12:00 pm – 01:00 pm	**Lunch Break**		
01:00 pm – 02:00 pm	**Poster Session and Student Paper Competition (SPC)**		
02:00 pm -03:30 pm	**Oral --- Wednesday, July 24 2013**		
	Session IFCS-EFTF3-H2. ***Atom-based sensors and fundamental physics*** *Chair:* **Peter Wolf**	***Session IFCS-EFTF6-H1.*** ***Frequency Combs II*** *Chair:* **Andre Luiten**	***Session IFCS-EFTF5-H3.*** ***Time Scales*** *Chair:* **Dirk Piester**
	SMALL HALL	**CLUB H**	**CLUB A**
02:00 pm	***IFCS-EFTF3-H2-1 (Invited)*** **Precision gravity measurements with atom interferometry** **Guglielmo M. Tino**	***IFCS-EFTF6-H1-1*** **An Optical-Microwave Phase Detector for Generation of Low-Noise Microwave Signals from a Frequency Comb** **Maurice Lessing**, Giuseppe Marra, Helen Margolis, Tom Brown, Patrick Gill	***IFCS-EFTF5-H3-1 (Invited)*** **The new national time and frequency standard of Russian Federation** Nikolay Koshelyaevsky,**Nikolay Koshelyaevsky**, Yury Blinov, Sergey Donchenko, Sergey Revnivykh, Vitaly Palchikov
02:15 pm		***IFCS-EFTF6-H1-2*** **Spectral purity transfer between optical wavelengths at the 10^-18 level** **Daniele Nicolodi**, Bérengère Argence, Wei Zhang, Rodolphe Le Targat, Giorgio Santarelli, Yann Le Coq	
02:30 pm	***IFCS-EFTF3-H2-2 (Invited)*** **Atomic Magnetometry for Biomedical and Fundamental Research** **Antoine Weis**	***IFCS-EFTF6-H1-3*** **Optical frequency comb with an absolute linewidth of 1 Hz** **Longsheng Ma**	***IFCS-EFTF5-H3-2*** **The New UTC(OP) based on the LNE-SYRTE Atomic Fountains** **Daniele Rovera**, Michel Abgrall, Sebastien Bize, Baptiste Chupin, Joceline Guena, Philippe Laurent, Peter Rosenbusch, Pierre Uhrich
02:45 pm		***IFCS-EFTF6-H1-4*** **Microwaves generation from mode-locked Er-fiber lasers with sub-fs-level absolute timing jitter** **Kwangyun Jung**, Junho Shin, Jungwon Kim	***IFCS-EFTF5-H3-3*** **A new weighting procedure for UTC** **Aurélie Harmegnies**, Gianna Panfilo
03:00 pm	***IFCS-EFTF3-H2-3*** **Testing Fundamental Physics with Microwave Cavities** **Stephen Parker**, Mortiz Nagel, Paul Stanwix, Evgeny Kovalchuk, John Hartnett, Eugene Ivanov, Achim Peters, Michael Tobar	***IFCS-EFTF6-H1-5*** **Broadband cavities for noise analysis and filtering in optical frequency combs relative to the quantum limit.** **Roman Schmeissner**, Valerian Thiel, Claude Fabre, Nicolas Treps	***IFCS-EFTF5-H3-4*** **Reconstruction of UTC(NIM)** Aimin Zhang, Yuan Gao, Kun Liang, Weibo Wang, Zhiqiang Yang, Dayu Ning, **Zhanjun Fang**

Wednesday, July 24 2013 -IFCS-EFTF

03:15 pm	***IFCS-EFTF3-H2-4*** **Cold Atom Test Masses and Their Applications In Space** **Nan Yu**, James Kellogg, James Kohel, Robert Thompson	***IFCS-EFTF6-H1-6*** **Optical lattice clocks with 87Sr in a cryogenic environment** **Ichiro Ushijima**, Takuya Ohkubo, Manoj Das, Masao Takamoto, Hidetoshi Katori	***IFCS-EFTF5-H3-5*** **Predicting The Polish Timescale UTC(PL) Based On The Corrections Designated By The UTC And UTCr Scale** **Łukasz Sobolewski**
03:30 pm – 04:30 pm	**Poster Session and Student Paper Competition (SPC) and Refreshments**		
04:30 pm -06:00 pm	**Oral --- Wednesday, July 24 2013**		
	Session IFCS-EFTF3-I1. ***Vapor Cell Clocks and Magnetometers*** *Chair:* **Christoph Affolderbach**	***Session IFCS-EFTF1-I3.*** ***Integrated MEMS Circuits*** *Chair:* **Gianluca Piazza**	***Session IFCS-EFTF4-I2.*** ***Liquid Sensing*** *Chair:* **Sylvain Ballandras**
	SMALL HALL	**CLUB H**	**CLUB A**
04:30 pm	***IFCS-EFTF3-I1-1*** **Pulsed Optically Pumped Rb Standard: a high stability vapor cell clock.** **Filippo Levi**, Claudio Calosso, Aldo Godone, Salvatore Micalizio	***IFCS-EFTF1-I3-1*** **RF Solid-State Vibrating Transistors** Wentao Wang, Radhika Marathe, Bichoy Bahr, Laura C. Popa, **Dana Weinstein**	***IFCS-EFTF4-I2-1*** **Probing colloid-substratum contact stiffness by acoustic sensing in a liquid phase** **Diethelm Johannsmann**, Adam Olsson, Henny C. van der Mei, Henk J Busscher, Prashant K. Sharma
05:00 pm	***IFCS-EFTF3-I1-2*** **Study of an observation method based on Crossed Polarizers for High-contrast Coherent Population Trapping** **Yuichiro Yano**, Shigeyoshi Goka	***IFCS-EFTF1-I3-2*** **Enhanced Temperature Sensitivity of a Single CMOS-MEMS Resonator via Resonant Modes in Orthogonal Axes** **Ming-Huang Li**, Chao-Yu Chen, Cheng-Syun Li, Chi-Hang Chin, Sheng-Shian Li	***IFCS-EFTF4-I2-2*** **Sensor Design and Characterization Method for New Multimode Downhole Sonic Measurements** **Hiroshi Hori**, Yuichiro Wada, Hiroshi Nomura, Atsushi Oshima, Tadashi Tajima, Junko Fujikawa, Takeshi Fukushima
05:15 pm	***IFCS-EFTF3-I1-3*** **Frequency Stability Performance of a Laser Pumped Rubidium Vapor Cell Atomic Frequency Standard** **Miao Zhu**	***IFCS-EFTF1-I3-3*** **Stress-enhanced chemical vapor deposited graphene NEMS RF resonators** **Michael Lekas**, Sunwoo Lee, Changyao Chen, James Hone, Kenneth Shepard	***IFCS-EFTF4-I2-3*** **Analysis of the Detection of Organophosphate Pesticides in Aqueous Solutions Using Polymer-Coated SH-SAW Sensor Arrays** **Tian Newman**, Arnold Mensah-Brown, Florian Bender, Fabien Josse
05:30 pm	***IFCS-EFTF3-I1-4*** **The Influence of Laser Polarization Noise on the Short-Term Stability of CPT Atomic Clocks** **James Camparo**, Michael Huang, Travis Driskell	***IFCS-EFTF1-I3-4*** **Micromechanical Disk Array-Composite for Enhanced Frequency Stability Against Bias Voltage Fluctuations** **Lingqi Wu**, Mehmet Akgul, Zeying Ren, Clark Nguyen	***IFCS-EFTF4-I2-4*** **Resonant Characteristics of Rectangular Hammerhead Microcantilevers Vibrating Laterally in Viscous Liquid Media** **Jinjin Zhang**, Fabien Josse, Stephen Heinrich, Oliver Brand, Isabelle Dufour, Nicholas Nigro
05:45 pm	***IFCS-EFTF3-I1-5*** **A push-pull magnetometer** **Evelina Breschi**, Zoran Grujic, Paul Knowles, Antoine Weis	***IFCS-EFTF1-I3-5*** **Exploiting Structural Nonidealities in MoS2 NEMS Resonators for Mode Shape Engineering and Frequency Control** **Zenghui Wang**, Jaesung Lee, Philip Feng	***IFCS-EFTF4-I2-5*** **Design of SH-Surface Acoustic Wave Sensors for Detection of ppb Concentrations of BTEX in Water** **Florian Bender**, Rachel Mohler, Antonio J. Ricco, Fabien Josse

01:00 pm - 02:00 pm and 3:30 pm – 4:30 pm	Poster --- Wednesday & Thursday, July 24 2013			Forum Hall
Session IFCS-EFTF1-PCD1. IFCS-EFTF Group 1 poster session 2 *Chair:* **Derek Puccio**	***IFCS-EFTF1-PCD1-8*** **Investigation of surface and pseudo-surface acoustic waves excitation and propagation in La3Ga5SiO14, La3Ga5.5Ta0.5O14, and Ca3TaGa3Si2O14 crystals** **Dmitrii Roshchupkin**, Dmitrii Irzhak, Olga Ploticyna, Evgeny Emelin, Luc Ortega, Sergey Sakharov, Oleg Buzanov	***IFCS-EFTF2-PCD2-3*** **A 15 mW, 4.6 GHz frequency synthesizer ASIC with -84 dBc/Hz at 2 kHz for miniature CPT clocks** **Yazhou Zhao**, Steve Tanner, Luc Schneller, Florian Gruet, Christoph Affolderbach, Gaetano Mileti, Pierre-André Farine	***IFCS-EFTF2-PCD2-11*** **433 MHz Wide-tunable High Q SAW Oscillator** **Tsubasa Yasuda**, Shasika Senanayaka, Shoji Izumiya, Takehiko Adachi	***IFCS-EFTF3-PCD3-2*** **Outlook of Developing the Absorption Cells with Double Anti-Relaxation Components (Coating + Buffer gas) for Improving a Long-Time Stability of Atomic Frequency Standards and Quantum Magnetometers** **Pestov Evgeny**
IFCS-EFTF1-PCD1-1 **Experimental and theoretical results on SC-cut quartz resonators collectively realized on 4" wafers** **Alexandre Clairet**, Thierry Laroche, Laurent Couteleau, Jean-Jacques Boy	***IFCS-EFTF1-PCD1-9*** **Investigation of optimal electrode structure of SC-cut resonators** Alexandr Lepetaev,**Anatoly Kosykh**	***IFCS-EFTF2-PCD2-4*** **Reducing the time transfer uncertainty in the fiber optic time and frequency dissemination system** **Wojciech S³owik**	***IFCS-EFTF2-PCD2-12*** **Tracking DDS in Time and Frequency Metrology** **Claudio Calosso**	***IFCS-EFTF3-PCD3-3*** **Measurements of optical frequency shift in sealed Cs vapor cells filled with He, Xe buffer gases** **Eric Kroemer**, Vincent Giordano, Rodolphe Boudot
IFCS-EFTF1-PCD1-2 **Vector Network Analyzer Measurements of Frequency Fluctuations in Aluminum Nitride Contour-Mode Resonators** **Nicholas Miller**, Gianluca Piazza	***IFCS-EFTF1-PCD1-10*** **Correction Factors for the Mindlin Plate Equations for Thick-ness Vibrations of Crystal Plates with Thicker Electrodes** Dejin Huang, Guijia Chen, Wenjun Wang, Tingfeng Ma, Jianke Du, **Ji Wang**	***IFCS-EFTF2-PCD2-5*** **Research on Hybrid-compensation technology for reducing acceleration sensitivity of TCXO** **Liangpeng Chen**, Qingxiao Shan	***IFCS-EFTF2-PCD2-13*** **A miniature timing microsystem using two silicon resonators** **David Ruffieux**, Jacek Baborowski, Nicola Scolari, Thanh C. Le, Antti Jaakkola, Tuomas Pensala, James Dekker, Charles-Alix Manier, Kai Zoschke, Hermann Oppermann	***IFCS-EFTF3-PCD3-4*** **An Accurate Measuring Method for the Transient Oscillation Frequency of Detuned Coherent Population Trapping Atomic Clock** **Daiting Shi**, Zhong Wang
IFCS-EFTF1-PCD1-3 **New Calibration Method for Experimental Study of the Non-linear Behavior of a Bulk Acoustic Wave Resonator Subject to a High-Power Signal** Lise Catherinot, Stéphane Bila, **Matthieu Chatras**, Dominique Cros	***IFCS-EFTF1-PCD1-11*** **Optimizing UHF Quartz MEMs Resonators for High Thermal Stability** **Deborah Kirby**, Yook-Kong Yong, Randall Kubena, Raviv Perahia, David Chang, Hung Nguyen, Stratton Frederic, Joyce Richard, Harris Moyer, Robert Nagele, Peter Brewer	***IFCS-EFTF2-PCD2-6*** **Demonstration of doubly rotated X-cut quartz plate oscillators with a slot vibrating in length extensional modet quartz plate oscillator with a slot vibrating in length extensional mode** **Tomiharu Yamaguchi**, Kiyoto Katakura, Yusuke Todo, Hisashi Kanie	***IFCS-EFTF2-PCD2-14*** **A Comparison of FBAR Oscillators with Standard Resonators and Stress Relieved Resonators** **Rich Ruby**, Suresh Sridaran, Steve Ortiz	***IFCS-EFTF3-PCD3-5*** **Microwave Cavity Design for an Optically-pumped Rubidium Atomic Beam Clock** **Chang Liu**, Yanhui Wang

IFCS-EFTF1-PCD1-4 **Numerical Study of the Impact of Process Variations on the Motional Resistance of Weakly Coupled MEMS Resonators** **Andreja Erbes**, Pradyumna Thiruvenkatanathan, Ashwin A. Seshia	***IFCS-EFTF1-PCD1-12*** **Modeling Approach to Analyze Bonding Stress in UHF Quartz Resonators** **Yook-Kong Yong**, Randall Kubena, Deborah Kirby, Raviv Perahia, David Chang	***IFCS-EFTF2-PCD2-7*** **Investigation into Spectrum Shape Fluctuations of Oscillators and Signal Sources** **Michael Underhill**	***IFCS-EFTF2-PCD2-15*** **New thermal design to develop excellent stability and ultra low power compact OCXO.** **Kamal Kumar S**, Mariyappa Chandrashekar, M Brahmananda Reddy, Varaprasad Rayudu, Nalini C V	***IFCS-EFTF3-PCD3-6*** **Extreme Resolution of the Laser Optical Pumped Alkaline Vapor Quantum Generator** Roman Smolin, Sergey Ermak,**Vladimir Semenov**, Pavel Zimnitsky
IFCS-EFTF1-PCD1-5 **Unwanted Transverse Modes in SAW Resonators Caused by Stitching Errors And Stripe Nonlinearities** **Pierre Dufilie**, Raymond Zeitler, Merle Yoder	***Session IFCS-EFTF2-PCD2. IFCS-EFTF Group 2 poster session 2*** *Chair:* **Fabrice Sthal**	***IFCS-EFTF2-PCD2-8*** **All-Digital Video RF Transmitter with Embedded Direct Digital Frequency Synthesizer** **Konstantinos Vasiliou**, Kostas Galanopoulos, Paul Sotiriadis	***IFCS-EFTF2-PCD2-16*** **Electronic Signal Transduction in Collectively-Sensed Arrays of Parallel Piezoresistive NEMS Resonators** **Hamidreza Zamani**, Philip Feng	***IFCS-EFTF3-PCD3-7*** **Wafer-level integration of getters in cesium-neon cells for miniature atomic clocks** Madoka Hasegawa, Ravinder Chutani, Rodolphe Boudot, **Vincent Maurice**, Luca Mauri, Christophe Gorecki, Nicolas Passilly
IFCS-EFTF1-PCD1-6 **Imaging surface acoustic waves propagating on ST-quartz using stroboscopic synchrotron radiation X-ray topography.** **Bernard Capelle**, Alain Soyer, Yves Epelboin, Jacques Detaint	***IFCS-EFTF2-PCD2-1*** **Dynamic Range Vs Spectral Clarity Trade-off in All-Digital Frequency Synthesis via Single-Bit Sinewave Quantization** Paul Sotiriadis, **Natalia Miliou**	***IFCS-EFTF2-PCD2-9*** **Theoretical and Experimental Investigations on 1/f Noise of Quartz Crystal Resonators** **Santunu Ghosh**, Fabrice Sthal, Joel Imbaud, Michel Devel, Roger Bourquin, Cedric Vuillemin, Ahmed Bakir, Nathalie Cholley, Philippe Abbe, David Vernier, Gilles Cibiel	***Session IFCS-EFTF3-PCD3. IFCS-EFTF Group 3 poster session 2*** *Chair:* **John Kitching**	***IFCS-EFTF3-PCD3-8*** **Improved frequency instability of PTB's fountain clocks** Vladislav Gerginov, Burghard Lipphardt, Michael Kazda, Nils Nemitz, **Stefan Weyers**
IFCS-EFTF1-PCD1-7 **X-ray imaging of the surface acoustic wave propagation in La3Ga5SiO14 crystal** **Dmitrii Roshchupkin**, Luc Ortega, Anatolii Snigirev, Iraida Snigireva	***IFCS-EFTF2-PCD2-2*** **Measuring an optical frequency difference of semiconductor lasers based on coherent detection and frequency dividers** **Lukasz Buczek**	***IFCS-EFTF2-PCD2-10*** **Switching Down-Converting RF Mixer with Embedded Single-Bit-Output All-Digital Frequency Synthesizer** **Nikos Stamatopoulos**, Kostas Galanopoulos, Paul Sotiriadis	***IFCS-EFTF3-PCD3-1*** **Estimates Of Achievable Frequency Stability Values In Atomic Gas Cell Frequency Standards With Coherent Population Trapping** **Vadim Zholnerov**, Konstantin Barantsev, Igor Sokolov, Andrey Litvinov	***IFCS-EFTF3-PCD3-9*** **NPL Rb fountain: upgrade and new frequency measurements** **Yuri Ovchinnikov**, Krzysztof Szymaniec, Soliman Edris

01:00 pm - 02:00 pm and 3:30 pm – 4:30 pm	Poster --- Wednesday & Thursday, July 24 2013			Forum Hall
IFCS-EFTF3-PCD3-10 **Current status of NICT atomic fountains** **Motohiro Kumagai**, Clayton Locke, Hiroyuki Ito, Kohta Kido, Nobuyasu Shiga, Masatoshi Kajita, Yuko Hanado, Mizuhiko Hosokawa	***Session IFCS-EFTF4-PCD4. IFCS-EFTF Group 4 poster session 2*** *Chair:* **Fabien Josse**	***IFCS-EFTF4-PCD4-8*** **A heterodyne frequency-stabilization method for large ring laser gyroscopes with sub-nW output power** **Fabio Stefani**, Jacopo Belfi, Enrico Maccioni	***IFCS-EFTF5-PCD5-6*** **Precise Point Positioning technique for short and long baselines time transfer** **Pawel Lejba**	***IFCS-EFTF5-PCD5-14*** **Experimental Tests of the Real-Time MTIE Assessment Methods for Multi-Channel Time Error Measurement** Andrzej Dobrogowski,**Michal Kasznia**
IFCS-EFTF3-PCD3-11 **Distributed cavity phase calculation for a rectangular Ramsey cavity in NRC-FCs1** **Louis Marmet**, Nicolás A. Shtin, Pierre Dubé, J. Mauricio López R.	***IFCS-EFTF4-PCD4-1*** **A stroboscopic approach to surface acoustic wave delay lines interrogation** **Nicolas Chrétien**, J.-M. Friedt, Sylvain Ballandras, Gilles Martin	***IFCS-EFTF4-PCD4-9*** **Finite Element Simulation of Piezoelectric Ultrasonic Devices with Elements from Porous Piezoceramics** **Andrey Nasedkin**, Maria Shevtsov	***IFCS-EFTF5-PCD5-7*** **The study of GPS Time Transfer Based on Extended Kalman Filter** **Wu Jianfeng**	***IFCS-EFTF5-PCD5-15*** **Application of three-cornered-hat method** Svetlana Bol'ginova,**Nikolay Koshelyaevsky**, Sergey Pesterev, Nikolay Pol'nikov, Ekaterina Popkova
IFCS-EFTF3-PCD3-12 **An atomic gravimeter at KRISS: Current status** **Sang-Bum Lee**	***IFCS-EFTF4-PCD4-2*** **SAW sensor exploiting palladium layer properties for selective detection of hydrogen** **Meddy Vanotti**, Jean-Yves Rauch, Sylvain Ballandras, Virginie Blondeau-Patissier	***Session IFCS-EFTF5-PCD5. IFCS-EFTF Group 5 poster session 2*** *Chair:* **Wolfgang Schaefer**	***IFCS-EFTF5-PCD5-8*** **A method of High precision time transfer based on DVB-S** **Yu Xiang**, Yu Hua, Linshen Xu, Daopeng Dong, Changjiang Huang	***IFCS-EFTF5-PCD5-16*** **A Novel Timing-Delay Measuring Method Based On PN Code in Telephone Time Service** Daopeng Dong, Ting Zeng, **Yu Xiang**
IFCS-EFTF3-PCD3-13 **A trapped atom interferometer for the measurement of short range forces** **Minkang ZHOU**	***IFCS-EFTF4-PCD4-3*** **Large Capacity SAW Tag** **Xin Huang**, Zhijun Chen, Hailin Xu, Mengyang Wang, Peng Ruan, Peidi Chen	***IFCS-EFTF5-PCD5-1*** **High stability composite clock performances** **Francois Vernotte**, Cedric Plantard, Papa Mamadou Mbaye	***IFCS-EFTF5-PCD5-9*** **A simple computation technique for improving the short term stability and robustness of GPS TAIP3 Common-Views** Pierre Uhrich, **G. Daniele Rovera**	***IFCS-EFTF5-PCD5-17*** **VLBI receiver chain monitoring** **Vojtìch Michálek**, Jan Kodet, Ulrich Schreiber, Christian Plötz, Ivan Procházka, Petr Pánek

IFCS-EFTF3-PCD3-14 **Large Area Cold Atom Gyroscope** **Arnaud Landragin**, Matthieu Meunier, Indranil Dutta, Christine Guerlin, Carlos Garrido Alzar	***IFCS-EFTF4-PCD4-4*** **A micro-machined Tonpilz hydrophone for audible frequency sounds** **Min Sung**, Hak Sue Lee, Won Kyu Moon	***IFCS-EFTF5-PCD5-2*** **Research on timescale algorithms in Database for TA(PL)** **Micha³ Marszalec**, Albin Czubla, W³odzimierz Lewandowski, Marzenna Lusawa	***IFCS-EFTF5-PCD5-10*** **Design and Implementation of Dual One-way Precise Ranging and Time Synchronization System** **Hong-Jiao Ma**, HuaBing Wu, Meng Li	***IFCS-EFTF5-PCD5-18*** **An Algorithm with Periodic Item for Steering UTC(NTSC) to UTC** Ye Ren, Li Xiao-hui, Hue Yan-rong, **Li Yu-we**
IFCS-EFTF3-PCD3-15 **Figure of merit and limit of short-term stability in passive hydrogen maser** Sergey Kozlov,**Vladimir Vasilyev**	***IFCS-EFTF4-PCD4-5*** **Characterization of Parylene-C Using Quartz Thickness Shear Mode (TSM) Resonators** Huiyan Wu, **Qing-Ming Wang**	***IFCS-EFTF5-PCD5-3*** **Iterative Method for Signal Path Delay Difference Estimation of Two-way Satellite Time and Frequency Transfer** Wenke Yang, **Jianwei Zhan**, Hang Gong, Xiangwei Zhu, Guangfu Sun	***IFCS-EFTF5-PCD5-11*** **Analysis on GNSS space clocks performances** **Alice Cernigliaro**, Stefano Valloreia, Lorenzi Galleani, Patrizia Tavella	***IFCS-EFTF5-PCD5-19*** **Progress in the link calibration for UTC time transfer** **Zhiheng JIANG**
IFCS-EFTF3-PCD3-16 **A new laser frequency locking method based on the normal and abnormal saturated absorption spectroscopy of 87Rb** Jian Guo, Jianhong Wan,**Yanhui Wang**	***IFCS-EFTF4-PCD4-6*** **A SH-APM liquid viscosity sensor based on PZT-5H** **Zhijun Chen**, Mengyang Wang, Jingyong Liu, Peng Ruan, Xin Huang	***IFCS-EFTF5-PCD5-4*** **Study and Application of Real-Time Frequency Deviation Adjustment Algorithm in Establishing a Time Scale** **Yiwei Wu**	***IFCS-EFTF5-PCD5-12*** **A Method of GNSS System Time Offset Monitoring** **Huijun Zhang**, Lin Zhu, Xue Zhang, XiaoHui Li	***IFCS-EFTF5-PCD5-20*** **Research on precision measurement of phase difference between different frequency signals** **Miao Miao**, Wei Zhou, Xueping Zhang, Zhiqi Li, Changsheng Liu
IFCS-EFTF3-PCD3-17 **Electron Spin Resonance Spectroscopy of Macroscopic Crystals** **Warrick Farr**, Karim Benmessai, Daniel Creedon, Yarema Reshitnyk, Nitin Nand, Maxim Goryachev, Jean-Michel Le Floch, Timothy Duty, Michael Tobar	***IFCS-EFTF4-PCD4-7*** **Absolute control of the scale factor in the GP2 laser gyro-scope: toward a ground based detector of the Lense-Thirring effect** **Nicolò Beverini**, Jacopo Belfi, Massimo Calamai, Giorgio Carelli, Davide Cuccato, Angela Di Virgilio, Enrico Maccioni, Antonello Ortolan, Rosa Santagata	***IFCS-EFTF5-PCD5-5*** **An Adaptive Filtering Algorithm With Packet Delay Variation For IEEE 1588 Servo System** Chen Lei, **Zhu Tianlin**	***IFCS-EFTF5-PCD5-13*** **Implementation of the Real-Time Multi-Channel ADEV, TDEV, and HDEV Computation Methods** **Michal Kasznia**	***IFCS-EFTF5-PCD5-21*** **NTP Accuracy in Practice** **Demetrios Matsakis**

01:00 pm - 02:00 pm and 3:30 pm – 4:30 pm	Poster --- Wednesday & Thursday, July 24 2013			Forum Hall
IFCS-EFTF5-PCD5-22 **Time and frequency distribution improving in Calern/Geoazur laboratory for T2L2 campaign** **Myrtille Laas-Bourez**, Daniele Rovera, Michel Abgrall, Etienne Samain, Jean-Louis Oneto, Philippe Guillemot	***IFCS-EFTF5-PCD5-30*** **Compass Receiver Positioning Algorithm under Bad conditions Based on Unequal Interval Clock Prediction** Jianwei Zhan, Hang Gong, **Bo Xu**, Guozhu Zhang, Gang Ou	***IFCS-EFTF6-PCD6-7*** **Ion trap heating – measurement and model** **Petr Balling**, Miroslav Doležal, Hugh Klein, Steven King, Patrick Gill, Thomas Lindvall, Anders Wallin, Mikko Merimaa, Christian Tamm, Piet O. Schmidt, Tanja E. Mehlstäubler, Ekkehard Peik	***IFCS-EFTF6-PCD6-15*** **Long-term Miniaturized Stabilization of Ultrafast Laser based on Rubidium Coherent Population Trapping Atomic Resonator** **Jiutao Wu**, Dong Hou, Zhong Wang, Jianye Zhao	
IFCS-EFTF5-PCD5-23 **Synchronization of Ultrafast Lasers** **Huan Zhao**, Jun Ge, Nuanrang Wang	***Session IFCS-EFTF6-PCD6. IFCS-EFTF Group 6 poster session 2*** *Chair:* **Sébastien Bize**	***IFCS-EFTF6-PCD6-8*** **Design and construction of helical resonators for ion traps** **Ke Deng**, Yunlong Sun, Jie Zhang, Zehuang Lu, Jun Luo	***IFCS-EFTF6-PCD6-16*** **Assessing the accuracy of the NPL femtosecond combs for a frequency ratio measurement with 171Yb+** **Luke Johnson**, Helen Margolis, Steven King, Peter Nisbet-Jones, Rachel Godun, Patrick Gill	
IFCS-EFTF5-PCD5-24 **Multipoint dissemination of RF frequency in delay-stabilized fiber optic link in a side-branch configuration** Lukasz Sliwczynski,**Przemyslaw Krehlik**, Lukasz Buczek, Marcin Lipinski	***IFCS-EFTF6-PCD6-1*** **Development of Optical Frequency Standard based on 87 Sr** **Vitaly Palchikov**, Vitaly Palchikov, Sergey Slusarev, Ksenia Khabarova, Alexey Kostin, Sergey Strelkin, Gleb Belotelov	***IFCS-EFTF6-PCD6-9*** **Incoherent Repumper and Clearout Light Sources for Sr+ Ion Traps** **Thomas Fordell**, Thomas Lindvall, Tuomas Hieta, Mikko Merimaa	***IFCS-EFTF6-PCD6-17*** **International Timescales with Optical Clocks** **Helen Margolis**, Davide Calonico, Pacome Delva, Heiner Denker, Stephan Falke, Rachel Godun, Dirk Piester, Sebastien Bize, Jan Gersl, Patrick Gill, Thomas Lindvall, Christian Lisdat, Luca Lorini, Mikko Merimaa, Marco Pizzocaro, Setnam Shemar, Uwe Sterr, Ludger Timmen,	
IFCS-EFTF5-PCD5-25 **Evaluation of the AGH-designed Time and Frequency trans-fer system on a 149 km PTB-Hannover-PTB fiber link** Przemyslaw Krehlik, Gesine Grosche, Sebastian Raupach, Dirk Piester, Harald Schnatz, **Lukasz Sliwczynski**	***IFCS-EFTF6-PCD6-2*** **Development of a Moving system for cavity-build-up Lattice** **Chang Yong Park**, Dai-Hyuk Yu , Won-Kyu Lee, Sangkyung Lee, Sang Eon Park, Sang-Bum Lee, Jongchul Mun, Myoung-Sun Heo Heo, Taeg Yong Kwon	***IFCS-EFTF6-PCD6-10*** **Dark-State Suppression in a Trapped and Laser-Cooled Alkaline-Earth-Metal Single Ion** **Thomas Lindvall**, Thomas Fordell, Alan A. Madej, Ilkka Tittonen, Mikko Merimaa	***IFCS-EFTF6-PCD6-18*** **JRP-EXL01: A Joint Research Project of the European Metrology Research Program to investigate Quantum Engineered States for Optical Clocks and Atomic Sensors** **Sebastien Bize**, Jerome Lodewyck, Rodolphe Le Targat, Guido Wilpers, Uwe Sterr, Christian Lisdat, Stephan Falke, Filippo Levi, Davide Calonico,	

IFCS-EFTF5-PCD5-26 **Bi-directional optical amplifiers for long-distance fibre links** **Sebastian M. F. Raupach**, Andreas Koczwara, Gesine Grosche, Fabio Stefani, Olivier Lopez, Anne Amy-Klein, Christian Chardonnet, Paul-Eric Pottie, Giorgio Santarelli	***IFCS-EFTF6-PCD6-3*** **Project of photoassociation measurments for determination of the density shift of 1S0-3P0 clock transition in neutral strontium** **Marcin Bober**, Piotr Morzynski, Michal Zawada, Piotr Wcislo, Agata Cygan, Daniel Lisak, Roman Ciurylo, Jerzy Zachorowski, Wojciech Gawlik	***IFCS-EFTF6-PCD6-11*** **On the Interpolation Between Optical Frequency Standards and Primary Clocks by Use of Ultrastable Resonators** Fritz Riehle, **Uwe Sterr**, Christian Hagemann, Christian Grebing	***IFCS-EFTF6-PCD6-19*** **A Space-Based Optical Kennedy-Thorndike Experiment Testing Special Relativity** Thilo Schuldt, Sven Herrmann, Deborah Aguilera, Klaus Doeringshoff, Ruven Spannagel, Claus Laemmerzahl, Achim Peters, Bernd Biering, Hansjoerg Dittus,**Claus Braxmaier**	
IFCS-EFTF5-PCD5-27 **Tracking DDS for Coherent Optical Links** **Claudio E. Calosso**, Elio K. Bertacco, Davide Calonico, Cecilia Clivati, Giovanni A. Costanzo, Filippo Levi, Salvatore Micalizio, Alberto Mura	***IFCS-EFTF6-PCD6-4*** **Strontium Optical Lattice Clock Research at NIM** **Yige Lin**, Zhanjun Fang	***IFCS-EFTF6-PCD6-12*** **Nd:YAG lasers with a most probable linewidth of 0.6 Hz** Zhiyi Bi, **Haiqin Chen**	***IFCS-EFTF6-PCD6-20*** **AOM-RN: an acousto-optic modulator extending the tools employed in laser spectroscopy as optical phase modulators** **Vyacheslav Baryshev**	
IFCS-EFTF5-PCD5-28 **Simultaneous Transmission of Time and Frequency Signals over Optical Fibers** **Fei Yang**, Youzhen Gui, Haiwen Cai, Chunhao Han, Zhiwu Cai	***IFCS-EFTF6-PCD6-5*** **Compact Atomics Package for a Transportable Strontium Lattice Clock** Yeshpal Singh, Lyndsie Smith, Ole Kock, Wei He, Huadong Cheng,**Kai Bongs**	***IFCS-EFTF6-PCD6-13*** **Clock Laser Systems for Yb Optical Lattice Clock at KRISS** **Won-Kyu Lee**, Chang Yong Park, Dai-Hyuk Yu, Sang Eon Park, Sangkyung Lee, Sang-Bum Lee, Jongchul Mun, Myoung-Sun Heo, Taeg Yong Kwon	***IFCS-EFTF6-PCD6-21*** **High performance laser stabilization using a Ramsey Borde spectrometer** **Andrew Ludlow**, Richard Fox, Jeff Sherman, Judith Olson, Eduardo de Carlos-Lopez, William Douglas, Chris Oates	
IFCS-EFTF5-PCD5-29 **Distributed time transfer using optical fiber links** **Liang Hu**, Guiling Wu, Jianguo Shen, Huang Huang, Jianping Chen	***IFCS-EFTF6-PCD6-6*** **A ground based Yb lattice clock to participate in future space-clock missions: commencement** **John McFerran**, Nikita Kostylev, Eugene Ivanov, John Hartnett, Andre Luiten, Michael Tobar	***IFCS-EFTF6-PCD6-14*** **Determination of Mode Number Using Two Laser Combs with Large Difference in Repetition Rate** **Jin-Long Peng**, Tze-An Liu, Ren-Huei Shu		

Thursday. July 25 2013 - IFCS-EFTF

08:30 am -10:00 am	Oral --- Thursday, July 25 2013		
	Session IFCS-EFTF5-K2. Optical fiber T+F Transfer III *Chair:* **Anne Amy-Klein**	***Session IFCS-EFTF3-K1. Space missions and clocks II*** *Chair:* **Kurt Gibble**	***Session IFCS-EFTF2-K3. Novel Frequency Sources*** *Chair:* **Michael Tobar**
	SMALL HALL	**CLUB H**	**CLUB A**
08:30 am	***IFCS-EFTF5-K2-1*** **A 30-km-long optical fiber link for frequency comparison between distant strontium optical lattice clocks** **Tomoya Akatsuka**, Hitomi Ono, Keitaro Hayashida, Kuniya Araki, Masao Takamoto, Tetsushi Takano, Hidetoshi Katori	***IFCS-EFTF3-K1-1 (Invited)*** **Status of the flight model of the cold atoms space clock PHARAO** **Igor Moric**, Philippe Laurent	***IFCS-EFTF2-K3-1*** **Spintronics rf nano-oscillators based on spin transfer induced dynamics of vortex magnetization** **Eva Grimaldi**, Vincent Cros, Paolo Bortolotti, Antoine Dussaux, Julie Grollier, Akio fukushima, Hitochi Kubota, Kay Yakushiji, Shinji Yuasa, Albert Fert
08:45 am	***IFCS-EFTF5-K2-2*** **Optical Frequency Transfer over a single-span 1840 km Fiber Link** **Stefan Droste**, Filip Ozimek, Sebastian Raupach, Harald Schnatz, Gesine Grosche, Theodor W. Hänsch, Thomas Udem, Ronald Holzwarth		
09:00 am	***IFCS-EFTF5-K2-3*** **Distributed Raman Amplification for long-haul optical frequency dissemination** **Cecilia Clivati**, Gabriele Bolognini, Davide Calonico, Giovanni Costanzo, Stefano Faralli, Filippo Levi, Alberto Mura, Nicola Poli	***IFCS-EFTF3-K1-2*** **Lifetime of Space Passive Hydrogen Maser** **Qinghua Wang**, Pierre Mosset, Fabien Droz, Pascal Rochat	***IFCS-EFTF2-K3-2 (Invited)*** **Recent Progress and Perspectives of Extremely Low Loss Acoustic Cavities: From Frequency Sources to Artificial Atoms** **Maxim Goryachev**, Michael Tobar, Serge Galliou
09:15 am	***IFCS-EFTF5-K2-4*** **Two Color One-Way Frequency Transfer in an Urban Optical Fiber Network** **Sven-Christian Ebenhag**, Per Olof Hedekvist	***IFCS-EFTF3-K1-3*** **STE-QUEST: Atomic Sensors in Space for fundamental physics, time and frequency metrology and other applications** **Philip Tuckey**	
09:30 am	***IFCS-EFTF5-K2-5*** **Optical Frequency Transfer on Branching Fibre Networks** Sascha Schediwy, David Gozzard, Guido Aben, Kenneth Baldwin, Brian Orr, R. Bruce Warrington,**Andre Luiten**	***IFCS-EFTF3-K1-4*** **ACES data simulation and data analysis: an update** **Peter Wolf**	***IFCS-EFTF2-K3-3*** **A Novel Evanescent-Mode Mobius-Coupled Resonator Oscillators** **Ajay Poddar**, Ulrich Rohde
09:45 am	***IFCS-EFTF5-K2-6*** **Fiber-based multiple-access ultrastable optical and radio frequency dissemination** Yu Bai, **Bo Wang**, Chao Gao, Weiliang Chen, Jing Miao, Xi Zhu, Lijun Wang	***IFCS-EFTF3-K1-5*** **Compact, High-Performance CW Double-Resonance Rb frequency Standard : present status** **Thejesh Bandi**, Christoph Affolderbach, Matthieu Pellaton, Florian Gruet, Camillo Stefanucci, Francesco Merli, Anja K. Skrivervik, C. E. Calosso, and Gaetano Mileti	***IFCS-EFTF2-K3-4*** **Design of Ultra-Low-Power (2.5µW) 1GHz Low Phase Noise Pierce Oscillator with Nanowire NEMS Resonator** **Hamidreza Zamani**, Philip Feng

Thursday. July 25 2013 - IFCS-EFTF

10:00 am – 10:30 am	Refreshments		
10:30 am -12:00 pm	**Oral --- Thursday, July 25 2013**		
	Session IFCS-EFTF5-L2. Geodesy and Radio Astronomy *Chair:* **Demetrios Matsakis**	***Session IFCS-EFTF6-L1. Lattice Clocks II*** *Chair:* **Patrick Gill**	***Session IFCS-EFTF1-L3. MEMS Resonators*** *Chair:* **Bernard Dulmet**
	SMALL HALL	**CLUB H**	**CLUB A**
10:30 am	***IFCS-EFTF5-L2-1*** **On the Importance of Time and Frequency in Geodesy** **Ulrich Schreiber**	***IFCS-EFTF6-L1-1*** **Optical lattice clocks near the QPN limit: A tenfold improvement in optical clock stability** **Travis Nicholson**, Michael Martin, Jason Williams, Benjamin Bloom, Michael Bishof, Matthew Swallows, Sara Campbell, Jun Ye	***IFCS-EFTF1-L3-1*** **CMOS-MEMS Resonators and Their Applications** **Sheng-Shian Li**
11:00 am	***IFCS-EFTF5-L2-2*** **A Fiber Optic Gyroscope on multiplexed telecommunication network with a large enclosed area** **Cecilia Clivati**, Davide Calonico, Giovanni Costanzo, Alberto Mura, Marco Pizzocaro, Filippo Levi	***IFCS-EFTF6-L1-2*** **Comparison of Sr optical lattice clocks at the 10-16 level** **Jérôme Lodewyck**, Chuyan Shi, Ulrich Eismann, Mikhail Gurov, Rodolphe Le Targat, Yann Le Coq, Jocelyne Guéna, Michel Abgrall, Peter Rosenbusch, Daniele Rovera, Sébastien Bize, Philippe Laurent	***IFCS-EFTF1-L3-2*** **2DEG Electrodes for Piezoelectric Transduction of AlGaN/GaN MEMS Resonators** **Laura Popa**, Dana Weinstein
11:15 am	***IFCS-EFTF5-L2-3*** **Optical fiber-based radio frequency signal transfer** Yabai He, Magnus Hsu, Malcolm Gray, Bruce Warrington, **Michael Wouters**, Brian Orr, Andre Luiten, Ken Baldwin, Tasso Tzioumis, Chris Phillips, Guido Aben, Tim Rayner	***IFCS-EFTF6-L1-3*** **s-Wave Collisional Frequency Shift of a Fermion Clock** Eric L. Hazlett, Yi Zhang, Ronald W. Stites, **Kurt Gibble**, Kenneth M. O'Hara	***IFCS-EFTF1-L3-3*** **Reduction of anchor losses by etched slots in Aluminum nitride contour mode resonators** **Cristian Cassella**, Massimiliano Cremonesi, Jeronimo Segovia, Attilio Frangi, Gianluca Piazza
11:30 am	***IFCS-EFTF5-L2-4*** **Ultra-Stable Oscillator Reference Spacecraft-to-Spacecraft Links For Planetary Exploration** **Sami Asmar**, Kamal Oudrhiri, Gregory Weaver	***IFCS-EFTF6-L1-4*** **An Yb optical lattice clock: Current status at KRISS** **Dai-Hyuk Yu**, Chang Yong Park, Won-Kyu Lee, Snagkyung Lee, Sang Eon Park, Sang-Bum Lee, Jongchul Mun, Myoung-Sun Heo, Taeg Yong Kwon	***IFCS-EFTF1-L3-4*** **A 2.8 GHz Combined Mode of Vibration Aluminum Nitride MEMS Resonator with High Figure of Merit Exceeding 45** **Yu Hui**, Zhenyun Qian, Matteo Rinaldi
11:45 am	***IFCS-EFTF5-L2-5*** **GRACE Kinematic Orbit Determination: the Role of Clocks** **Etienne Orliac**, Adrian Jäggi, Heike Bock, Rolf Dach	***IFCS-EFTF6-L1-5*** **Nonlinear and Anharmonic contributions to Uncertainties of Optical Clocks on Ultracold Alkaline-Earth-Like Atoms** **Vitaly Palchikov**	***IFCS-EFTF1-L3-5*** **Highly coupled resonator based on ridge-shaped periodically poled materials for radio-frequency applications** **Fabien Henrot**, Florent Bassignot, Clément Guyot, Jean-Yves Rauch, Blandine Guichardaz, Sylvain Ballandras

Thursday. July 25 2013 - IFCS-EFTF

12:00 pm – 01:00 pm	**Lunch Break**		
01:00 pm – 02:00 pm	**Poster Session and Student Paper Competition (SPC)**		
02:00 pm -03:30 pm	**Oral --- Thursday, July 25 2013**		
	Session IFCS-EFTF6-M1. Optical Techniques *Chair:* **Steve Lecomte**	***Session IFCS-EFTF2-M2. Modeling and Frequency Synthesis*** *Chair:* **David Howe**	***Session IFCS-EFTF4-M3. Novel Sensing Materials and Devices*** *Chair:* **Fabien Josse**
	SMALL HALL	**CLUB H**	**CLUB A**
02:00 pm	***IFCS-EFTF6-M1-1*** **Optical absolute frequency reference for space applications** **Klaus Döringshoff**, Thilo Schuldt, Johannes Stühler, Evgeny V. Kovalchuk, Matthias Franz, Ulrich Johann, Claus Braxmaier, Achim Peters	***IFCS-EFTF2-M2-1 (Invited)*** **Physical model of phase noise in feedback oscillator** **Xianhe Huang**	***IFCS-EFTF4-M3-1*** **Piezoelectric Acceleration Sensors Based on LGX and ReCOB Crystals for Application above 649 DegC** **Yanqing Zheng**, Xiaoniu Tu, Jianjun Chen, Pan Gao, Erwei Shi
02:15 pm	***IFCS-EFTF6-M1-2*** **A laser frequency stabilization unit for next-generation space atomic clocks** **Alexander Nevsky**		***IFCS-EFTF4-M3-2*** **Thin quartz layer transferred on silicon for SAW applications** **Sebastien Grousset**, Emmanuel Augendre, Thomas Signamarcheix, Thomas Baron, Emilie Courjon, Sylvain Ballandras
02:30 pm	***IFCS-EFTF6-M1-3*** **Laser dynamics effects on the systematics of large size laser gyroscopes** **Jacopo Belfi**, Alessandro Beghi, Nicolò Beverini, Bachir Bouhadef, Davide Cuccato, Angela Di Virgilio, Antonello Ortolan	***IFCS-EFTF2-M2-2*** **Design, Simulation and Test of an Oscillator Suitable for Wafer Level Evaluation of SAW Resonator Phase Noise** **Dan Porga**, Twinkle Shah, Dennis Thoma, Andrew Sawyer, Mike Driscoll	***IFCS-EFTF4-M3-3*** **Acoustic properties of carbon nanotubes as high acoustic impedance electrode in BAW resonators** **Enrique Iborra**, Luis García-Gancedo, Santiago Esconjáuregui, Jesús Sangrador, Marta Clement, Mario de Miguel-Ramos, Jimena Olivares, Jose Capilla, Andrew J. Flewitt, William I. Milne
02:45 pm	***IFCS-EFTF6-M1-4*** **Determination of the Boltzmann Constant using Laser Absorption Spectroscopy** Gar-Wing Truong, James Anstie, Thomas Stace, **Andre Luiten**	***IFCS-EFTF2-M2-3*** **Synthesis of Ultra-Stable Radio Frequency Signals From Independent Microwave Frequency Oscillators** John Hartnett,**Stephen Parker**, Eugene Ivanov, Nitin Nand	***IFCS-EFTF4-M3-4*** **Properties of Piezoelectric Single Crystals Ca3TaGa3Si2O14 at High-Temperature and High-Vacuum Conditions** Hongfei Zhu, Huiyan Wu, Yizhong Wang,**Qing-Ming Wang**

Thursday. July 25 2013 - IFCS-EFTF

03:00 pm	***IFCS-EFTF6-M1-5*** **Hollow-Core Fibre Frequency Standards** Christopher Perrella, James Anstie, Phil Light, Anna Lurie, Tom Stace, Fetah Benabid, **Andre Luiten**	***IFCS-EFTF2-M2-4*** **The sampling theorem in Π and Λ digital frequency dividers** **Enrico Rubiola**, Claudio Eligio Calosso	***IFCS-EFTF4-M3-5*** **High Overtone Bulk Acoustic resonators for high temperature sensing applications** Emilie Courjon, Marc Loschonsky, Jean-Michel Friedt, Brahim Belgacem, Bruno François, Thomas Baron, Gilles Martin, William Daniau, Leonhard Reindl,**Sylvain Ballandras**
03:15 pm	***IFCS-EFTF6-M1-6*** **Towards a new clock laser system using a ceramic cavity and laser linewidth transfer technique** **Kazumoto Hosaka**, Hajime Inaba, Daisuke Akamatsu, Masami Yasuda, Jun Sugawara, Atsushi Onae, Feng-Lei Hong	***IFCS-EFTF2-M2-5*** **Trim Effect Compensation Using an Artificial Neural Network** **John Esterline**	***IFCS-EFTF4-M3-6*** **Langatate Temperature-Compensated BAW Orientations Identified Using High-Temperature Constants** Peter Davulis,**Mauricio Pereira da Cunha**
03:30 pm – 4:30 pm	**Poster Session and Student Paper Competition (SPC) and Refreshments**		
04:30 pm – 06:00 pm	**Plenary Session IV and Roundtable Discussion** **Session Chair; Ahmad Safari, *Rutgers University*** **IFCS-EFTF Plenary talk: Patrick Gill, National Physical Laboratory, UK, Optical Clocks - Way ahead of their Time?** **ISAF-PFM Plenary talk: Andreas Schoenecker, *Fraunhofer IKTS, Germany,* Smart solutions for a sustainable future – advances in smart materials, production technologies and applications** **IUS: Roman Maev, *University of Windsor, Ontario, Canad*a, New Generation of High Resolution Ultrasonic Imaging Technology for Material Characterization and NDT in Advanced Automotive Manufacturing** **Congress Hall**		

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