2013 Microtechnologies

24-26 April 2013

Technical Programme

www.spie.org/mt

Location
Alpexpo
Grenoble, France

Conferences & Courses
24-26 April 2013
Welcome to the meeting which showcases the latest research and technology developments.

SPIE Microtechnologies is the premier European meeting for the latest research, from bio-engineered and bio-inspired systems to developments in photonic materials, devices, and applications.

260+ PRESENTATIONS ON:
- Smart Sensors, Actuators, and MEMS
- VLSI Circuits and Systems
- Nanotechnology
- Bio-MEMS and Medical Microdevices
- Integrated Photonics: Materials, Devices, and Applications
Managed by SPIE Europe

SPIE Europe Ltd., a subsidiary of SPIE, is a not-for-profit UK-registered company serving SPIE constituents throughout Europe as an advocate and liaison to political and industry associations within the European optics and photonics community.

In addition to providing membership services, SPIE Europe Ltd. organises and manages internationally recognised conferences, education programmes, and technical exhibitions featuring emerging technologies in optics and photonics.

SPIE Europe
2 Alexandra Gate
Ffordd Pengam, Cardiff, CF24 2SA
Tel: +44 29 2089 4747
Fax: +44 29 2089 4750
info@spieeurope.org

2013 Symposium Chair

Thomas Becker
EADS Innovation Works
(Germany)

2013 Symposium Co-chairs

Christos Tsamis
National Ctr. for Scientific Research Demokritos (Greece)

Gerhard Krötz
University of Applied Sciences in Kempten (Germany)

2013 Symposium Local Chair

Marc Belleville
CEA-Leti (France)

Contents

Daily Schedule ........................................ 2
Special Events ....................................... 3-4

Technical Conferences

8763 Smart Sensors, Actuators, and MEMS VI ....... 5
8764 VLSI Circuits and Systems VI .................... 10
8765 Bio-MEMS and Medical Microdevices ........... 12
8766 Nanotechnology VI .............................. 14
8767 Integrated Photonics: Materials, Devices, and Applications II ..................... 16
General Information .................................. 27-32
Proceedings of SPIE ................................. 32

Register today: www.spie.org/mt

SPIE would like to express its deepest appreciation to the symposium chairs, conference chairs, programme committees, session chairs, and authors who have so generously given their time and advice to make this symposium possible.

The symposium, like our other conferences and activities, would not be possible without the dedicated contribution of our participants and members. This programme is based on commitments received up to the time of publication and is subject to change without notice.
## Daily Schedule

<table>
<thead>
<tr>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conferences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conf. 8763: Smart Sensors, Actuators, and MEMS VI p. 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conf. 8764: VLSI Circuits and Systems VI p. 10</td>
<td>Conf. 8765: Bio-MEMS and Medical Microdevices p. 12</td>
<td></td>
</tr>
<tr>
<td>Conf. 8766: Nanotechnology VI p. 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conf. 8767: Integrated Photonics: Materials, Devices, and Applications II p. 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Special Events</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plenary Session 1 p. 3</td>
<td>Welcome Reception p. 4</td>
<td>Plenary Session 2 p. 3</td>
</tr>
</tbody>
</table>
An autonomous structural health monitoring solution

Carol Featherston et al.
Cardiff Univ. (United Kingdom)

Abstract: Combining advanced sensor technologies, with optimised data acquisition and diagnostic and prognostic capability, structural health monitoring (SHM) systems provide real-time assessment of the integrity of bridges, buildings, aircraft, wind turbines, oil pipelines and ships, providing improved safety and reliability and reduced inspection and maintenance costs. The implementation of power harvesting, using energy scavenged from ambient sources such as thermal gradients and sources of vibration, alongside wireless transmission enables truly autonomous systems, reducing the need for batteries and associated maintenance in often inaccessible locations, alongside bulky and expensive wiring looms.

The design and implementation of such a system however presents numerous challenges. A suitable energy source or multiple sources capable of meeting the power requirements of the system, over the entire monitoring period, in a location close to the sensor must be identified. Efficient power management techniques must be used to condition the power and deliver it, as required, to enable appropriate measurements to be taken. Energy storage may be necessary, to match a continuously changing supply and demand for a range of different monitoring states including sleep, record and transmit. An appropriate monitoring technique, capable of detecting, locating and characterising damage and delivering reliable information, whilst minimising power consumption, must be selected. Finally a wireless protocol capable of transmitting the levels of information generated at the rate needed in the required operating environment must be chosen.

This paper considers solutions to some of these challenges, and in particular examines SHM in the context of the aircraft environment.

Biography: Dr Carol Featherston is a Reader in Mechanical Engineering at Cardiff School of Engineering. Following time spent in industry, working in the area of structural performance in the aircraft and chemical industries with British Aerospace and ICI, she returned to academia to study the ‘Stability of Lightweight Structures’ at Exeter College Oxford in association with Rolls Royce. She now leads the Aerospace Research Theme at Cardiff concentrating on the design and optimisation, modelling, testing and structural health monitoring of a range of structures, with partners including Airbus, Boeing and EADS.

Biologically inspired large scale chemical sensor arrays and embedded data processing

Santiago Marco
Univ. of Barcelona (Spain), et al.

Abstract: Biological olfaction outperforms chemical instrumentation in specificity, response time, detection limit, coding capacity, time stability, robustness, size, power consumption, and portability. This biological function provides outstanding performance due, to a large extent, to the unique architecture of the olfactory pathway, which combines a high degree of redundancy, an efficient combinatorial coding along with unmatched chemical information processing mechanisms. The last decade has witnessed important advances in the understanding of the computational primitives underlying the functioning of the olfactory system.

EU Funded Project NEUROCHEM (Bio-ICT-FET-216916) has developed novel computing paradigms and biologically motivated artefacts for chemical sensing taking inspiration from the biological olfactory pathway. To demonstrate this approach, a biomimetic demonstrator has been built featuring a large scale sensor array (65K elements) in conducting polymer technology mimicking the olfactory receptor neuron layer, and abstracted biomimetic algorithms have been implemented in an embedded system that interfaces the chemical sensors. The embedded system integrates computational models of the main anatomic building blocks in the olfactory pathway: the olfactory bulb, and olfactory cortex in vertebrates (alternatively, antennal lobe and mushroom bodies in the insect). For implementation in the embedded processor an abstraction phase has been carried out in which their processing capabilities are captured by algorithmic solutions. Finally, the algorithmic models are tested with an odour robot with navigation capabilities in mixed chemical plumes.

Biography: Santiago Marco completed his university degree in Applied Physics in 1988 and received a PhD in Microsystem Technology from the University of Barcelona in 1993. He held a European Human Capital Mobility grant for a postdoctoral position at the Department of Electronic Engineering at the University of Rome “Tor Vergata”. Since 1995, he is Associate Professor of Electronic Instrumentation at the Department of Electronics at the University of Barcelona. In 2004 he had a sabbatical leave at EADS-Corporate Research, Munich, working on Ion Mobility Spectrometry. In 2008 he was appointed leader of the Artificial Olfaction Lab at the Institute of Bioengineering of Catalonia. His research concerns the development of signal/data processing algorithmic solutions for smart chemical sensing based in sensor arrays or microspectrometers integrated typically using Microsystem Technologies.

Plenary presentations will occur throughout the week.

Wednesday 24 April
10:00

An autonomous structural health monitoring solution

Thursday 25 April
13:30

Biologically inspired large scale chemical sensor arrays and embedded data processing
Welcome Reception
Date: Wednesday 24 April
Time: 18:30 to 20:00
All attendees are invited to relax, socialize, and enjoy light refreshments. Please remember to wear your conference registration badges. Dress is casual.

Poster Session
Date: Thursday 25 April
Time: 14:30 to 16:30
Location: Pelvoux Salle de Reception
Setup
Authors are encouraged to display their posters beginning at 10.00 on Wednesday for extended viewing. Each poster author will have a 1m x 1m (39 inches x 39 inches) area in which to display their poster presentation.

Interactive Poster Session
Date: Thursday 25 April
Time: 14:30 to 16:30
Conference attendees are invited to attend the Poster Session on Thursday afternoon. Come view posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.
Wednesday 24 April

Plenary Session
Room: Pelvoux auditorium ............. Wed 9:30 to 11:00

Symposium Opening
Thomas Becker, EADS Deutschland GmbH (Germany) and nta Isny (Germany)

Welcome by Local Co-Chair
Marc Belleville, CEA-Leti (France)

Session Chair: Marc Belleville, CEA-Leti (France)

10:00: An autonomous structural health monitoring solution, Carol A. Featherston, The Univ. of Texas at Austin (United States) and Ulrich Schmid, Technische Univ. Wien (Austria)

11:40: Microfabrication and properties of smFe2-PZT magnetoelectric thin films, Ioanna Giouroudi, Technische Univ. Wien (Austria); Mohammed Al Nassar, Jürgen Kneer, Univ. Freiburg (Germany) and Dominique Martin, CEA-Leti (France)

12:00: Hybrid energy storage system for wireless sensor node powered by aircraft specific thermoelectric energy harvesting, Karthik Thangaraj, Cardiff Univ. (United Kingdom); Alexandros Eleftheriadis, Samad Aslam, Thomas Becker, EADS Deutschland GmbH (Germany); Ulrich Schmid, Technische Univ. Wien (Austria); Carol A. Featherston, Jonathan Lees, Rhys Pullin, Cardiff Univ. (United Kingdom)

12:20: Nanstructured zinc oxide piezoelectric energy generators based on semiconductor P-N junctions, Steve Dunn, Joe Brosic, Queen Mary, Univ. of London (United Kingdom); Mark Stewart, Paul M. Weaver, Marky G. Cain, National Physical Lab. (United Kingdom)

Lunch Break .............................................. Wed 12:40 to 13:40

Session 1
Room: Pelvoux auditorium ............. Wed 11:00 to 12:40

Energy Scavengers
Session Chairs: Jacopo Iannacci, Fondazione Bruno Kessler (Italy); Ulrich Schmid, Technische Univ. Wien (Austria)

11:00: A MEMS vibration energy harvester for automotive applications (Invited Paper), Rob van Schaijk, Interuniversity Microelectronics Ctr. (Netherlands)

11:40: Wearable and flexible thermoelastic generator with enhanced package, Luca Francioso, Chiara De Pascali, Pietro Siciliano, Consiglio Nazionale Delle Ricerche (Italy)

12:00: Ceramic joints for pressure sensors development, Radovan Novotný, Jaroslav Kadlec, Radek Kucha, Radek Vlach, Brno Univ. of Technology (Czech Republic)

14:20: Novel applications of piezoresistive thin film systems based on semiconductor P-N junctions, Steve Dunn, Joe Brosic, Queen Mary, Univ. of London (United Kingdom); Mark Stewart, Paul M. Weaver, Marky G. Cain, National Physical Lab. (United Kingdom)

15:00: Optical properties of copper oxide thin films as selective sensing principle for hydrogen sulfide detection, Janosch Kneer, Univ. Freiburg (Germany); Jürgen Wöllenstein, Technische Univ. Wien (Austria) and Ulrich Schmid, Technische Univ. Wien (Austria)

16:10: Fabrication and properties of SmFe2-PrZT magnetoelectric thin films, Ioanna Giouroudi, Technische Univ. Wien (Austria); Mohammed Al Nassar, Jürgen Kneer, Univ. Freiburg (Germany) and Ulrich Schmid, Technische Univ. Wien (Austria)

Coffee Break ........................................... Wed 15:00 to 15:30

Session 2
Room: Pelvoux auditorium ............. Wed 13:40 to 15:00

Packaging
Session Chairs: Jürgen Wöllenstein, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Robert J. Lad, Univ. of Maine (United States)

13:40: Ceramic joints for pressure sensors development, Radovan Novotný, Jaroslav Kadlec, Radek Kucha, Radek Vlach, Brno Univ. of Technology (Czech Republic)

14:00: CuSn transient liquid phase wafer bonding for MEMS applications, Christoph Floetgen, Marta Pawlak, EV Group (Austria); Eric Pabo, EV Group Inc. (United States); Bart van de Wiel, Greg Hayes, TNO (Netherlands); Viorel Dragoi, EV Group (Austria)

14:20: Analysis of thermal vias in molded interconnect devices, Joerg Reitterer, Franz Fidler, Ferdinand Saint-Julien-Waltee, TriLite Technologies GmbH (Austria); Ulrich Schmid, Technische Univ. Wien (Austria)

14:40: Characterization of a quartz-based chip capping package for RF MEMS, Guido Sordo, Alessandro Faes, Giuseppe Resta, Jacopo Iannacci, Fondazione Bruno Kessler (Italy)

Coffee Break ........................................... Wed 15:00 to 15:30

Session 3
Room: Pelvoux auditorium ............. Wed 15:30 to 16:50

Materials
Session Chairs: Ulrich Schmid, Technische Univ. Wien (Austria); Arno C. Hoogerwerf, Ctr. Suisse d’Electronique et de Microtechnique SA (Switzerland)

15:30: Novel applications of piezoresistive thin film systems based on hydrogenated carbon, Sascha N. Biehl, Christian Rumpusch, Christian Recknagel, Fraunhofer-Institut für Schicht- und Oberflächenotechnik (Germany)

15:50: Optical properties of copper oxide thin films as selective sensing principle for hydrogen sulfide detection, Janosch Kneer, Univ. Freiburg (Germany); Jürgen Wöllenstein, Technische Univ. Freiburg (Germany) and Fraunhofer-Institut für Physikalische Messtechnik (Germany)

16:10: Stable conducting nanocomposite electrodes for sensors used in high temperature harsh environments, Robert J. Lad, Scott C. Moulzolf, David J. Frankel, Mauricio Pereira Da Cunha, Univ. of Maine (United States)

16:30: Fabrication and properties of SmFe2-PrZT magnetoelectric thin films, Ioanna Giouroudi, Technische Univ. Wien (Austria); Mohammed Al Nassar, Jürgen Kneer, King Abdullah Univ. of Science and Technology (Saudi Arabia)
Thursday 25 April

Session 4
Room: Pelvoux auditorium .......................... Thu 9:00 to 10:20

Optical Devices and Systems
Session Chairs: Jürgen Wöllenstein, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Erwin Peiner, Technische Univ. Braunschweig (Germany)
9:00: High-speed ultra-broad tuning MEMS-VGSELS for imaging and spectroscopy (Invited Paper), Vijeaykesh Jayaraman, Pravium Research, Inc. (United States); Benjamin Potsaid, James Y. Jiang, Thorlabs Inc. (United States); Garrett D. Cole, Advanced Optical Microsystems (United States); Martin Robertson, Christopher Burgner, Denis John, Prawium Research, Inc. (United States); Irenueus Grulkowski, Massachusetts Institute of Technology (United States); Scott T. Sanders, Univ. of Wisconsin-Madison (United States); James G. Fujimoto, Massachusetts Institute of Technology (United States); Alex E. Cable, Thorlabs Inc. (United States) .......................... [8763-13]
9:40: High-precision opotelectronic sensor device for monitoring fermentation kinetics and maceration of wine, Francisco Jiménez-Márquez, Javier Vázquez, Juan Ubeda, José Luis Sánchez de Rojas Aldavero, Univ. de Castilla-La Mancha (Spain) .......................... [8763-14]
10:00: Optical position feedback of 2D MOEMS mirrors, Andreas Tartschansohn, Marcus Baumgart, Dominik Holzmann, Martin Lenzhofer, Carinthian Tech Research AG (Austria); Thilo Sandner, Fraunhofer-Institut für Photonische Mikrosysteme (Germany); Andreas Kenda, Carinthian Tech Research AG (Austria) .......................... [8763-15]
Coffee Break .......................... Thu 10:20 to 10:50

Session 5
Room: Pelvoux auditorium .......................... Thu 10:50 to 12:10

Fluidic MEMS
Session Chairs: José Luis Sánchez de Rojas Aldavero, Univ. de Castilla-La Mancha (Spain); Pavel J. Fiala, Brno Univ. of Technology (Czech Republic)
10:50: Influence of fluid-structure interaction on microcantilever vibrations: applications to rheological fluid measurement and chemical detection (Invited Paper), Isabelle Dufour, E. Lemaire, B. Caillard, H. Debéda, C. Lucat, Univ. Bordeaux 1 (France); Stephen M. Heinrich, Fabien J. Josse, Marquette Univ. (United States); Oliver Brand, Université de Lorraine (France) .......................... [8763-16]
11:30: Comparison of quartz tuning forks and AlN-based extensional micromotors for viscosity measurements in oil/fuel mixtures, Javier Toledo Serrano, Tomás Manzanque, Jorge Hernando García, Javier Vázquez, Univ. de Castilla-La Mancha (Spain); Abdallah Abatneh, Yarmouk Univ. (India); Heimut Seidel, Univ. des Saarlandes (Germany); Magin Lapuerta, José Luis Sánchez de Rojas Aldavero, Univ. de Castilla-La Mancha (Spain) .......................... [8763-17]
11:50: The concept of microfluidic microchemomechanical integrated circuits, Andreas Richter, Merle Allerdissen, Rinaldo Greiner, Andreas Voigt, Technische Univ. Dresden (Germany) .......................... [8763-18]
Lunch Break .......................... Thu 12:10 to 13:30

Plenary Session
Room: Pelvoux auditorium .......................... Thu 13:30 to 14:30

Session Chair: Christos Tsamis, National Ctr. for Scientific Research Demokritos (Greece)
13:30: Biologically inspired large scale chemical sensor arrays and embedded data processing, Santiago Marco, A. Gutiérrez-Gámez, Univ. de Barcelona (Spain) and Institute for Bioengineering of Catalonia (Spain); Anders Petersén, Royal Institute of Technology (Sweden); Dominique Martínez, LORIA (France); J. P. Rospars, Institut National de la Recherche Agronomique (France); Romeo Beccherelli, Istituto per la Microelettronica e Microsistemi (Italy); Alexandre Perera, Univ. Politecnica de Catalunya (Spain); Tim O. Pearce, Univ. of Leicester (United Kingdom); Paul Vershure, Univ. Pompeu Fabra (Spain); Krishna Persaud, The Univ. of Manchester (United Kingdom) .......................... [8763-502]

Poster Session
Room: Pelvoux Salle de Reception  ............ Thu 14:30 to 16:30

Conference attendees are invited to attend the Poster Session on Thursday afternoon. Please enjoy refreshments and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.
Poster authors are encouraged to display their posters beginning at 10:00 on Wednesday for extended viewing.

On a high potential variable flexural stiffness device, Markus Henke, Gerald Gerlach, Technische Univ. Dresden (Germany) .......................... [8763-34]
MEMS sensors for microscale piezoelectric metrology, Jenny Wooldridge, Andres Munz-Priemilla, Mark Stewart, Tamaryn A. V. Shean, Paul M. Weaver, Mark G. Cain, National Physical Lab. (United Kingdom) .......................... [8763-35]
Optical device for precision topography of MOEMS by Moiré interferometry, Said Meguellati, Small Djabi, Univ. Ferhat Abbas de Sétif (Algeria) .......................... [8763-36]
A miniaturized linear shaker system for MEMS sensor characterization, Jörg Encke, Wilfried F. Hortschitz, Austrian Academy of Sciences (Austria); Andreas Kainz, Harald Steiner, Franz Keplinger, Technische Univ. Wien (Austria); Thilo Austria GmbH (Austria); Franz Keplinger, Technische Univ. Wien (Austria) .......................... [8763-37]
Controlled fabrication of advanced functional structures on the nanoscale by means of electron beam-induced processing, Johann Foucher, CEA-LETI (France); Sebastian W. Schmidt, Christian Penzkofer, Bernd Immer, nanotools GmbH (Germany) .......................... [8763-38]
Rotational micro actuator for microsurgery, Monika Leeste-Schädle, Jan-Willem Then, Thomas Schubert, Stephanus Bütgenbach, Andreas Dietzel, Technische Univ. Braunschweig (Germany) .......................... [8763-39]
Integrated lenses in polystyrene microfluidic device, Yiqiang Fan, Huawei Li, Ian G. Foulds, King Abdullah Univ. of Science and Technology (Saudi Arabia) .......................... [8763-41]
Miniaturized wireless passive sensor with polymer coated nanowire fabric for hydrocarbon detection, Sheng P. Zhang, Brad Leonhardt, Catherine Shipman, Praveen Pasapathy, Brian A. Korgel, John G. Elsner, Dean P. Neikirk, The Univ. of Texas at Austin (United States) .......................... [8763-42]
Magnetic tunnel junction sensors with pTesa sensitivity for biomedical imaging, Lars Ginnero, Diana C. Lealao, Filipe Caruso, INESC-MN (Portugal); Ricardo Ferreira, Elvira Paz, International Iberian Nanotechnology Lab (Portugal); Paulo P. Freitas, International Iberian Nanotechnology Lab (Portugal) and INESC-MN (Portugal); Susana Cardoso, INESC-MN (Portugal) .......................... [8763-43]
Hydrogel plug for independent sample and buffer handling in continuous microchip capillary electrophoresis, Dietmar Puchberger-Engen, Technische Univ. Wien (Austria); Mireille Bippoun, Univ. Bremen (Germany); Martin Smolka, Technische Univ. Wien (Austria); Christian Krutzier, Integrated Microsystems Austria GmbH (Austria); Franz Keplinger, Technische Univ. Wien (Austria); Michael J. Vellekoop, Univ. Bremen (Germany) .......................... [8763-44]
A new injection method for soil nutrient analysis in capillary electrophoresis, Martin Smolka, Dietmar Puchberger-Engen, Technische Univ. Wien (Austria); Mireille Bippoun, Univ. Bremen (Germany); Georg Fencher, saxon Technik GmbH (Austria); Andrzej Klasa, Univ. of Warmiñsko-Mazurski (Poland); Kaan Ozer, Integrated Microsystems Austria GmbH (Austria); Franz Keplinger, Technische Univ. Wien (Austria); Michael J. Vellekoop, Univ. Bremen (Germany) .......................... [8763-45]
Simulation and optimization of the magnetic field in an electroplated copper microcoils, Mahir Matar, Alkasen Til-Khali, Stephanus Bütgenbach, Andreas H. Dietzel, Technische Univ. Braunschweig (Germany) .......................... [8763-46]
Micro-fluorescent activated cell sorter (FACS) for isolation of genetically modified cells, Hafif Chang, Kyung-A Hyun, Yonsei Univ. (Korea, Republic of); Kwon Soo Ha, Mi-Hye Kwon, Kangwon National Univ. (Korea, Republic of); Suho Ryu, Chulmin Joo, Hyo-II Jung, Yonsei Univ. (Korea, Republic of) .......................... [8763-47]
Development of energy harvester system for avionica, Zdenek Hadas, Vojtech Vetka, Zdenek Ancik, Cestmir Ondrusek, Vladimir Singaloe, Brno Univ. of Technology (Czech Republic) .......................... [8763-48]
Optimized harvesting from mechanical vibrations through piezoelectric actuators, based on a synchronized switching technique, Petros M. Tsamapas, Ioannis Roditis, Vasillis A. Papadimitriou, Panagiotis Chatzakos, Innora Ltd. (Greece); Tat-Hean Gan, TWI Ltd. (United Kingdom) .......................... [8763-49]
Flexible piezoelectric microgenerators based on nanotextured ZnO films, Eleni Makarona, George Niarhos, George Voulazeris, Christos Tasmis, National Ctr. for Scientific Research Demokritos (Greece) .......................... [8763-50]
CMOS compatible low-frequency aluminium nitride MEMS piezoelectric energy harvesting device, Nathan M. Jackson, Rosemary O’Keeffe, Finbarr Waidron, Tyndall National Institute (Ireland); Mike O’Neill, Analog Devices Ireland Ltd. (Ireland); Alan Mathewson, Tyndall National Institute (Ireland) .......................... [8763-51]
Comparison of low-power single-stage boost rectifiers for sub-milliwatt electromagnetic energy harvesters, Gyorgy Szarka, Bernard H. Boag, Andreas Dietzel, G. Burrow, Plamen Pryanov, Univ. of Bristol (United Kingdom) .......................... [8763-52]
Load optimised piezoelectric generator for powering battery-less TPMS, David Blažević, Saša Želenka, Ervin Kamaran, Univ. of Rijeka (Croatia) .......................... [8763-53]
Flat inducers for human motion energy harvesting, Juris Blums, Galina Terlecka, Ilygars Gornev, Asoma Vilumsonė, Riga Technical University (Latvia)  .......................................................... [8763-54]

Modeling, simulation and experimental testing of the MEMS thermoelctric generators in wide range of operational conditions, Zdenek Ancik, Frantisek Vlach, Luked Janak, Brno Univ. of Technology (Czech Republic); Pavel Kopecek, UNIS, spol. s r.o. (Czech Republic); Zdenek Hadas, Brno Univ. of Technology (Czech Republic) .................. [8763-55]

Design and material aspects for thermoelctric energy harvesting devices in aircrafts, Alexandros Eleftheriotis, Nikolaos Kokorakis, Thomas Becker, EADS Deutschland GmbH (Germany); Ulrich Schmid, Technische Univ. Wien (Austria)  .................................................................................. [8763-56]

A nano-power energy harvesting ICE for arrays of piezoelectric transducers, Marco Tartagni, Univ. di Modena e Reggio Emilia, Bologna (Italy); Valeria Bottarel, Giulio Ricotti, STMicroelectronics (Italy); Marco Tartagni, Univ. degli Studi di Bologna (Italy) .................................................................................................................... [8763-57]

Design, fabrication and characterization of a very low frequency piezoelectric energy harvester designed for heart beat vibration scavenging, Matthew Collin, Libor Rufer, Skandar Basrour, TIMA Lab (France) .................................................. [8763-58]

A miniaturised autonomous sensor based on nanowire platforms: the SINAPs mote, Naser Koshoor-Pour, Maher Kayal, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Guobin Jia, Fritz Falk, Institut für Photonische Technologien e.V. (Germany); Erik Fulk, Cees J. M. van Rijn, Nansens B.V. (Netherlands); Adrian Nightingale, John C. de Mello, Imperial College London (United Kingdom); Nikolay Petkov, Yordan M. Georgiev, Tyndall National Institute (Ireland); Justin Donnelly, Darragh Coyle (United Kingdom); Michele Gacic, Giorgios Tafas, Tyndall National Institute (Ireland) ........................................................................................................................ [8763-59]

Optimal combination of bistable piezoelectric plates for maximised broadband energy harvesting performance, David N. Betts, Christopher R. Bowen, Hyunyung A. Kim, Univ. of Bath (United Kingdom); Daniel J. Innan, Univ. of Melbourne (United Kingdom) ........................................................ [8763-60]

Design, fabrication and characterization of a micromachined piezoelectric energy harvester excited by ambient vibrations, Ali Badar M. Alamir Dow, Univ. of Toronto (Canada); Achim Bittner, Ulrich Schmid, Technische Univ. Wien (Austria); Nazir P. Kherani, Univ. of Toronto (Canada) ................................................................................ [8763-61]

Photovoltaic energy harvesting for smart sensor systems, Martin Kasmann, Albert-Ludwigs-Universität Freiburg (Germany); Karola Rühle, Albert-Ludwigs-Universität Freiburg (Germany) and Fraunhofer-Institut für Solare Energiesysteme (Germany); Karim M. Gad, Albert-Ludwigs-Universität Freiburg (Germany); Stefan W. Glanz, Fraunhofer-Institut für Solare Energiesysteme (Germany) ........................................................................................................ [8763-62]

Parameterization of ambient energy harvesters for complementary balanced electronic applications, Yannick Verbelen, Abdellah Touhafi, An Braeken, Erasmus Univ. College Brussels (Belgium) ........................................................................................................................ [8763-63]

Study of hybrid organic-inorganic thin films deposited by PECVD for gas sensors applications, Julien Piccot, Muriel Mathevon, CEA Grenoble (France); Christophe Lichra, Nevine Rochat, Commissariat à l’Energie Atomique (France); Julien El Sahab, CEA Grenoble (France); Vincent Joussaye, CEA-LÉTI (France) .................................................................................................................. [8763-84]

Zero power Humidochromic sensor based on polymer photonic structures, Ioannis Chatzichristidi, Univ. of Athens (Greece); Panagiotis Argitis, Nikolaos Papanikolaou, National Ctr. for Scientific Research (Greece); Silvia Pelegrini, Univ. Federal de Santa Catarina (Brazil); Andrea Adami, Cristian Collin, Paolo Conci, Leandro Lorenzelli, Fondazione Bruno Kessler (Italy); André Pasa, Univ. Federal de Santa Catarina (Brazil) .................................................. [8763-72]

Advanced modeling ofAIN-based micromachined energy harvesters driven by beta-emitting radioisotopes, Ali Badar M. Alamir Dow, Nazir P. Kherani, Univ. of Toronto (Canada); Ulrich Schmid, Technische Univ. Wien (Austria)  ........................................................ [8763-73]

Modeling methods of MEMS microspeaker, with capacitive working principle, David Tumpold, Manfred Kaltenbacher, Technische Univ. Wien (Austria); Christoph Gries, Kasimnaz Nawaz, Alfons Dehé, Infineon Technologies AG (Germany) .......................................................................................... [8763-74]

Experimental methodology to measure damping in microstructures by using the actuation force hysteresis curve, Giorgio De Pasquale, Aurelio Soma, Politecnico di Torino (Italy) .................................................................................. [8763-75]

A large deflection model of silicon membranes for testing intrinsic stress of MEMS microphones based on pull-in voltages, Hiroshi Ikeda, Alexander-Dresden-Hamburg, Alexander-Universität-Erlangen-Nürnberg (Germany); Alfons Dehé, Franz Fink, Harald Infineon Technologies AG (Germany); Robert Weigel, Alexander Köplin, Friedrich-Alexander-Universität-Erlangen-Nürnberg (Germany) .................................................................................. [8763-77]

Analysis of local deformation effects in resistive strain sensing of a submicron-thickness AFM cantilever, Jonathan Adams, Georg E. Fantner, Ecole Polytechnique Fédérale de Lausanne (Switzerland) ................................................................................................................ [8763-78]

Magnetic circuit design for miniaturized magnetic shape memory alloy actuators, Christian Bolzembrger, Commissariat à l’Energie Atomique (France) ........................................................................................................................ [8763-79]

Exploiting infrared transparency of silicon for the construction of advanced MOEMS vibration sensors, Wilfried F. Hortschitz, Jörg Encke, Franz Kohl, Thilo Sauter, Austrian Academy of Sciences (Austria); Franz Keplinger, Harald Steiner, Andreas Kainz, Technische Univ. Wien (Austria) ................................................................................................ [8763-80]

A resonance-based solar element: a numerical model and micro/nano technology application, Pavel J. Fiala, Petr Drexler, Dusan Nesper, Brno Univ. of Technology (Czech Republic) ........................................................................................................ [8763-81]

Biomimetic MEMS sensor array for navigation and water detection, Oliver Futterknecht, Technische Univ. Wien (Austria); Mark O. Macqueen, Aramins Technologies (Malaysia); Salimah B. Karman, Univ. Kebangsaan Malaysia (Malaysia); Ille C. Gebeshuber, Univ. Kebangsaan Malaysia (Malaysia); Ille C. Gebeshuber, Univ. Kebangsaan Malaysia (Malaysia) and Technische Univ. Wien (Austria) and Aramins Technologies (Malaysia) ........................................................................................................ [8763-82]

Simulation and design optimization of transparent heaters for spectroscopic micro cells, Henning Völk, Jonathan Herrmann, Dara Feis, Helmut Seidel, Univ. des Saarlands (Germany); Reinhard Maier, Volkmar Häublen, Friedrich-Alexander-Universität-Erlangen-Nürnberg (Germany); Heiner Ryssef, Fraunhofer-Institut für Integrierte Systeme und Bauelementetechnologie IISB (Germany) and Friedrich-Alexander-Universität-Erlangen-Nürnberg (Germany). ........................................................................................................ [8763-83]

Flip chip packaging of piezoresistive barometric pressure sensors, Tobias Wabo, Hochschule München für Angewandte Wissenschaften (Germany); Wolfgang Pahl, Matthias Schmid, EPCOS AG (Germany); Gregor Feiertag, Hochschule München (Germany); Stefan Stuuffer, EPCOS AG (Germany); Rainer Dudek, Fraunhofer-Institut für Elektronische Nanostrukturtechnologie (Germany); Anton Leidl, EPCOS AG (Germany) ........................................................................................................ [8763-84]

A Lorentz force actuated magnetic field sensor with capacitive read-out, Michael Stifter, Technische Univ. Wien (Austria) and Austrian Academy of Sciences (Austria); Harald Steiner, Andreas Kainz, Technische Univ. Wien (Austria); Wilfried F. Hortschitz, Integrated Microsystems Austria GmbH (Austria); Thilo Sauter, Austrian Academy of Sciences (Austria) ........................................................................................................ [8763-85]

Mid-infrared ribbon waveguide absorption sensors based on Si, Ventislav M. Luchansky, Zeev Kelman, Technische Universität Wien (Austria); Jacobo Grille, Thomas Grille, Infineon Technologies Austria AG (Austria); Bernhard Jakoby, Johannes Kepler Univ. Linz (Austria) ........................................................................................................ [8763-86]

MEMS sensors for mm-range displacement measurements with sub-mm resolution, Vladimir T. Stavrov, AMG Technology Ltd. (Bulgaria); Vencislav M. Iordanov, TechProject Co. (Austria); Allan Shulev, Institute of Mechanics, Bulgarian Academy of Sciences (Bulgaria); Chavdar Hardalov, Technical Univ. of Sofia (Bulgaria). ........................................................................................................ [8763-87]

Detection of bad indoor environment with a miniaturized gas sensor system, Jochen Huber, Fraunhofer-Institut für Physischalmechtestchnik (Germany); Jürgen Wölfeinstein, Albert-Ludwigs-Universität Freiburg (Germany) ........................................................................................................ [8763-88]

Noise as diagnostic tool for quality and reliability of thick-film pressure sensors, Petr Sedlák, Vlasta Sedlacková, Jiří Majzner, Josef Sikula, Brno Univ. of Technology (Czech Republic); Marina Santo Zarnik, Darko Belavč, Jožef Stefan Institute (Slovenia) ........................................................................................................ [8763-89]

A FPGA-based measurement system with QCM for real-time fluctuation-enhanced gas sensing, Petr Sedlák, Marek Vondra, Jirka Sikula, Vlasta Sedlacková, Jiří Majzner, Brno Univ. of Technology (Czech Republic) ........................................................................................................ [8763-90]

Optical-thermal actuation of silicon cantilevers: modelling and experimental investigation, Fei Jiang, Adrian J. Keating, Marıusz Martyuńk, Dilusha K. Silva, Evgeny M. Kravets, Vinzour, Drexler J. Dett, The Univ. of Western Australia (Australia); Julian Drury, Austin (Australia) ........................................................................................................ [8763-91]

MEMS-based silicon cantilevers with integrated electrothermal heaters for airborne ultrafine particle sensing, Hutomo S. Wasisto, Stephan Merzsch, Andreas Waag, Erwin Peiner, Technische Univ. Braunschweig (Germany) ........................................................................................................ [8763-92]

Design and fabrication of a 5 MHz ultrasonic phased array probe with curved transducer, Julia Fischer, Thomas Herzog, Susan Walter, Henning Heuer, Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany) ........................................................................................................ [8763-93]
MEMS pressure sensor with maximum performances by using novel back-side direct-exposure concept featuring through glass vias, Ho-Duong Ngo, Technische Univ. Berlin (Germany); Klaus-Dieter Lang, Technische Univ. Berlin (Germany); Matthias Fritz, Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration (Germany); Biswajit Mukhopadhyay, Technische Univ. Berlin (Germany); Piotr Mackowiak, Technische Univ. Berlin (Germany) .............. [8763-94]

Stacked PZT linear arrays for high intensity ultrasound transducers, Rico Stöckmann, Thomas Herzog, Sarah Wahl, Henning Heuer, Norbert G. Meyendorf, Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany) .............. [8763-97]

From nature to MEMS: towards the detection limit of crickets’ hair sensors, Ahmad Dagasem, Yarmouk Univ. (Jordan) ..................... [8763-96]

Counting line detectors with one monolithically integrated readout circuit: two applications, Thomas Loehse, Peter Krüger, Henning Heuer, Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany); Martin Oppermann, Technische Univ. Dresden (Germany); Hannes Torlée, Fraunhofer Institut für Photonische Mikrosysteme (Germany); Norbert G. Meyendorf, Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany) ....................... [8763-97]

Design strategies of opto-mechanical micro oscillators for the detection of the ponderomotive squeezer, Antonio L. Borrelli, Istituto dei Materiali per l’Elettronica ed il Magnetismo (Italy) and Gruppo Collegato di Trento (Italy); Enrico Serra, Univ. degli Studi di Trento (Italy) and Gruppo Collegato di Trento (Italy); Andrea Sarti, Istituto dei Materiali per l’Elettronica ed il Magnetismo (Italy) and Gruppo Collegato di Trento (Italy); Vincenzo Greco, Istituto dei Materiali per l’Elettronica ed il Magnetismo (Italy) and Gruppo Collegato di Trento (Italy); Michele Bonaldi, Istituto Nazionale di Fisica Nucleare (Italy) and Istituto dei Materiali per l’Elettronica ed il Magnetismo (Italy) ......................... [8763-98]

Measurement of the 1/1 noise of lateral actuated MEMS with sidewall piezoresistors, Vladimir T. Stavrov, AMG Technology Ltd. (Bulgaria); Thilo Sauter, Institute for Integrated Sensor Systems (Austria); Philip Schwerter, Technische Univ. of Sofia (Bulgaria) ......................... [8763-99]

Modular high frequency eddy current sensor system and image preprocessing algorithms for CFRP testing, Martin H. Schulze, Henning Heuer, Norbert G. Meyendorf, Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany) ......................... [8763-100]

MEMS pressure sensor fabricated by advanced bulk micromachining techniques, Gabriel Vanko, Institute of Electrical Engineering (Slovakia); Peter Hudek, Johann Zehetner, Fachhochschule Vorarlberg (Austria); Jaroslav Dzuba, Institute of Electrical Engineering (Slovakia); Pavlina Choleva, Fachhochschule Vorarlberg (Austria); Martin Vallo, Ivan Ryger, Tibor Lăinesky, Institute of Electrical Engineering (Slovakia) ......................... [8763-101]

Industrial use of a cantilever-based probe microfor the characterization of tribological surfaces, Thomas Frank, Lutz Döring, Stefan Vollmecke, CIS Forschungsinstitut für Mikrosystemtechnik GmbH (Germany); Michael Schutze, Robert Weichert, CIS Forschungsinstitut für Mikrosystemtechnik GmbH (Germany); Steffen Reich, CIS Forschungsinstitut für Mikrosystemtechnik GmbH (Germany) ......................... [8763-102]

Chemical microsensors based on hydrogels with adjustable measurement range, Andreas Haas, Johann W. Bartha, Wolfgang Fischer, Andreas Haas, Technische Univ. Dresden (Germany) ......................... [8763-103]

Self-aligned single-mask fabrication process for electro-thermal microactuators using ICP-RIE, Ali Badar M. Alamin Dow, Univ. of Toronto (Canada); Adel B. Gogum, Masdar Institute of Science & Technology (United Arab Emirates); Kuzuz P. Khare, Univ. of Toronto (Canada) ......................... [8763-104]

Fabrication of an array like freeform molding tool for uV-replication using a step and repeat process, Hans-Jürgen Liebscher, ProSys, Inc. (United States); Frank Fournel, CEA-LETI (France); Viorel Dragoi, EV Group (Austria) ......................... [8763-111]

Microgalvanic nickel pulse plating processes for the production of the ultrasonic actuators, Wolfgang Hansal, Happy Plating GmbH (Austria); Harald Steiner, Technische Univ. Dresden (Germany) ......................... [8763-110]

Control of cavitation density through gas and acoustic uniformity in a proximity megasonic pre-bond cleaning system, Donald Dussault, Eric Liebischer, ProSys, Inc. (United States); Frank Fournel, CEA-LETI (France); Vorel Dragoi, EV Group (Austria) ......................... [8763-111]

Surface damage monitoring using electro-magnetic sensors, Seok-Jin Kwon, Korea Railroad Research Institute (Korea, Republic of) ......................... [8763-112]

Formation of a deposit on workpiece surface in polishing nonmetallic materials, Tunky D. Filatov, V. Bakul Institute for Superhard Materials NASU (Ukraine); Guy Montel, Institute FEMTO-ST (France); Volodymyr I. Sidorko, Oleksandr Y. Filatov, V. Bakul Institute for Superhard Materials NASU (Ukraine) ......................... [8763-113]

A closed-loop system for frequency tracking of piezoresistive cantilever sensors, Hufuon S. Wasisto, Qing Zhang, Stephan Merzsch, Andreas Waag, Erwin Peiner, Technische Univ. Braunschweig (Germany) ......................... [8763-114]

Simulation of thick film PZT actuators with interdigitated electrodes, Mohan Mohammed Zaki, Sandy Zähringer, Norbert Schwesinger, Technische Univ. München (Germany) ......................... [8763-115]

Vacuum packaging of MEMS sensors, Jae Hong Park, Tae Hyun Kim, Woo Cheong Kim, Myeongho Song, Eunmi Park, Hee Yeoun Kim, Kiyoung Lee, National Nanofab Ctr. (Korea, Republic of) ......................... [8763-116]

Friday 26 April

Session 6

Room: Pelvoux auditorium ............. Thu 16:30 to 17:50

Session Chairs: Monika Leester-Schädel, Technische Univ. Braunschweig (Germany); Gerald Gerlach, Technische Univ. Dresden (Germany)

16:30: Flexible hot-film anemometer arrays for flow measurements on curved structures, Tobias T. Beutel, Martin Schwerter, Monika Leester-Schädel, Andreas H. Dietzel, Stephanus Büttgenbach, Technische Univ. Braunschweig (Germany) ......................... [8763-19]

16:50: Microthermal sensors for determining fluid composition and flow rate in fluidic systems, Andreas Schütze, Christian Kiefer, Bastian Schmitt, Univ. des Saarlandes (Germany) ......................... [8763-20]

17:10: A high thermal resistance MEMS-based Pirani vacuum sensor chip, Florian Dans, Rupert Schreiner, Fachhochschule Regensburg (Germany) ......................... [8763-21]

17:30: Microfluidic low cost calorimeters for biological and chemical applications, Martin Jaegle, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Jürgen Antes, Fraunhofer-Institut für Chemische Technologie (Germany) ......................... [8763-22]

Session 7

Room: Pelvoux auditorium ............. Fri 9:00 to 10:20

Session Chairs: Jacopo Iannacci, Fondazione Bruno Kessler (Italy); Erwin Peiner, Technische Univ. Braunschweig (Germany)

9:00: Electromagnetic microactuators (Invited Paper), Stephanus Büttgenbach, Alaasleen T. Al-Halhoul, Marco Feldmann, Volker Seidemann, Andreas Waldschik, Technische Univ. Braunschweig (Germany) ......................... [8763-23]

9:40: Thermal design of a tristable electromagnetic linear microactuator with high displacement and low actuation force for mass storage applications, Xin Xu, Ha-Duong Ngo, Piotr Mackowiak, Technische Univ. Berlin (Germany) ......................... [8763-24]

10:00: Highly sensitive thermal actuators for temperature sensing, Harald Steiner, Technische Univ. Wien (Austria); Willfried F. Hortschitz, Austrian Academy of Sciences (Austria); Michael Stief, Austrian Academy of Sciences (Austria) and Technische Univ. Wien (Austria); Franz Keplinger, Technische Univ. Wien (Austria); Thilo Sauter, Austrian Academy of Sciences (Austria) ......................... [8763-25]

Coffee Break ..................... Fri 10:20 to 10:50

Microactuators
Session 8
Room: Pelvoux auditorium ............. Fri 10:50 to 12:10

Resonators
Session Chairs: Andreas Schütze, Univ. des Saarlandes (Germany); Gerald Gerlach, Technische Univ. Dresden (Germany)

10:50: Design of high-efficiency vibration energy harvesters and experimental functional tests for improving bandwidth and tunability, Aurelio Soma, Giorgio De Pasquale, Politecnico di Torino (Italy) ..................... [8763-26]

11:10: Fabrication of vertical nanowire resonators for aerosol exposure assessment, Stephan Merzsch, Hulomo S. Wasisto, Andrej Stranz, Technische Univ. Braunschweig (Germany); Peter Hinze, Thomas Weimann, Physikalisch-Technische Bundesanstalt (Germany); Erwin Peiner, Andreas Waag, Technische Univ. Braunschweig (Germany) ..................... [8763-27]

11:30: Quality factor enhancement for resonant MEMS applying an analogue feedback circuit driven by a lock-in amplifier, Martin Kucera, Technische Univ. Wien (Austria) and AC2T research GmbH (Austria); Franz Hofbauer, Technische Univ. Wien (Austria); Tomás Manzanegrae, Victor Ruiz, Univ. de Castilla-La Mancha (Spain); Achim Bittner, Technische Univ. Wien (Austria); José Luis Sánchez de Rojas Aldavero, Univ. de Castilla-La Mancha (Spain); Ulrich Schmid, Technische Univ. Wien (Austria) ..................... [8763-28]

11:50: Multi-modal vibration based MEMS energy harvesters for ultra low power wireless functional nodes, Jacopo Iannacci, Massimo Gottardi, Enrico Serra, Roberto Di Criscienzo, Fondazione Bruno Kessler (Italy); Antonio L. Borrielli, Istituto Nazionale di Fisica Nucleare (Italy) and Consiglio Nazionale delle Ricerche (Italy); Michele Bonaldi, Istituto Nazionale di Fisica Nucleare (Italy) and Istituto dei Materiali per l’Elettronica ed il Magnetismo (Italy) ..................... [8763-29]

Lunch Break ..................... Fri 12:10 to 13:30

Plenary Session
Room: Pelvoux auditorium ............. Fri 13:30 to 14:30

Session Chair: Marc Belleville, CEA-Leti (France)

13:30: Micro- and nanoscale thermoelectrics: an overview over basic concepts and recent advances, Markus Winkler, Fraunhofer-Institut für Physikalische Messtechnik IPM (Germany); Martin Jaegle, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Xi Liu, Christian-Albrechts Univ. zu Kiel (Germany); Jan Koenig, Harald Boettner, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Lorenz Kienle, Christian-Albrechts-Univ. zu Kiel (Germany) ..................... [8763-30]

Session 9
Room: Pelvoux auditorium ............. Fri 14:30 to 15:50

Bio-MEMS
Session Chairs: Monika Leester-Schädel, Technische Univ. Braunschweig (Germany); Georg E. Fantner, Ecole Polytechnique Fédérale de Lausanne (Switzerland)

14:30: All-silicon micro-force sensor for bio applications, Vladimir T. Stavrov, AMG Technology Ltd. (Bulgaria); Assen Shulev, Institute of Mechanics, Bulgarian Academy of Sciences (Bulgaria); Vencislav M. Todorov, Techproject Co. (Austria); Iliya Roussev, Institute of Mechanics, Bulgarian Academy of Sciences (Bulgaria) ..................... [8763-31]

14:50: Efficient nanoparticle filtering using bioinspired functional surfaces, Sebastian Busch, Manuel Ketterer, Albert-Ludwigs-Universität Freiburg (Germany); Xenia Vinzenz, Christian Hoffmann, Institut für Bioprozess- und Analysenmesstechnik e.V. (Germany); Jürgen Wolkenstein, Albert-Ludwigs-Universität Freiburg (Germany) ..................... [8763-32]

15:10: Hydrogel-based labs-on-a-chip, Merle Allerdissen, Stephan Klett, Andreas Richter, Technische Univ. Dresden (Germany) ..................... [8763-33]

15:30: A low complexity wireless microbial fuel cell monitor using piezoresistive sensors and impulse-radio ultra-wide-band, Marco Crepaldi, Alessandro Chierici, Tonia Tommasi, Diana Hidalgo, Giancarlo Cianavesi, Istituto Italiano di Tecnologia (Italy); Danilo Demarchi, Fabrizio C. Pirri, Istituto Italiano di Tecnologia (Italy) and Politecnico di Torino (Italy) ..................... [8763-34]
Wednesday - Friday 24–26 April 2013 • Proceedings of SPIE Vol. 8764

VLSI Circuits and Systems VI

Conference Chair: Teresa Riesgo, Univ. Politécnica de Madrid (Spain)
Conference Co-Chair: Massimo Conti, Univ. Politecnica delle Marche (Italy)

Programme Committee:
Eduard Alarcón, Univ. Politécnica de Catalunya (Spain); Marco Caidari, Korg (Italy); João Canas Ferreira, Univ. do Porto (Portugal); Marcello Coppola, STMicroelectronics (France); Eduardo de la Torre-Arnanz, Univ. Politécnica de Madrid (Spain); Valerio Frascolla, Intel GmbH (Germany); Mohammed Ismail, Khalifa Univ. of Science, Technology and Research (United Arab Emirates); George Kornaros, Technological Education Institute of Crete (Greece); José Francisco Lopez Feliciano, Univ. de Las Palmas de Gran Canaria (Spain); Celia López-Ongil, Univ. Carlos III de Madrid (Spain); Mar Martinez, Univ. de Cantabria (Spain); Nataly Martinez, Reutlingen Univ. (Germany); Salvador Mir, TIMA Lab. (France); Pere Lluís Miribel-Catalá, Univ. de Barcelona (Spain); Simone Orcioni, Univ. Politecnica delle Marche (Italy); Ioannis Papaefstathiou, Technical Univ. of Crete (Greece); Jorge Portilla, Univ. Politécnica de Madrid (Spain); Franco Ripa, Korg (Italy); Ángel B. Rodríguez-Vázquez, Univ. de Sevilla (Spain); Ruben Salvador, Univ. Politecnica delle Marche (Italy); Sergio Saponara, Univ. di Pisa (Italy); Roberto Sarmiento Rodríguez, Univ. de Las Palmas de Gran Canaria (Spain); Ralf Seepold, Hochschule Konstanz (Germany); Walter Stechle, Technische Univ. München (Germany); Christian Stehno, CoSynth GmbH & Co. KG (Germany); Fabian Vargas, Pontificia Univ. do Rio Grande do Sul (Brazil); Alisson Vasconcelos de Brito, Univ. Federal da Paraíba (Brazil)

Wednesday 24 April

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Room: Chartreuse</th>
<th>Wed 11:00 to 12:40</th>
<th>Analog Circuit Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session Chair: Massimo Conti, Univ. Politecnica delle Marche (Italy)</td>
<td>Welcome by Local Co-Chair</td>
<td>Welcome by Local Co-Chair</td>
<td>Marc Belleville, CEA-Leti (France)</td>
</tr>
<tr>
<td>11:00: A 2.5 Gb/s low-voltage CMOS fully-differential adaptive equalizer. Erick Guerrero Rodriguez, Cecilia Gimeno, Concepcion Aldea, Santiago Celma-Pueyo, Univ. de Zaragoza (Spain)</td>
<td>11:20: Reducing flicker noise up-conversion in a 65-nm CMOS VCO in the 1.6-to-2.6 GHz band. Andrea G. Bonfanti, Federico Pepe, Carlo Samori, Salvatore Levantino, Andrea L. Lacaia, Politecnico di Milano (Italy)</td>
<td>11:40: Rectenna design using DG-MOSFETs. Raúl R. Rodríguez del Rosario, IIUMA (Spain); Benito B. González Pérez, Javier A. García, IUMA (Spain) and Univ. de Las Palmas de Gran Canaria (Spain)</td>
<td>12:00: Energy harvesting with piezoelectric applied on shoes. Enrico Camilloni, Mirko Carloni, Marco Giannarini, Massimo Conti, Univ. Politecnica delle Marche (Italy)</td>
</tr>
<tr>
<td>12:20: A 1.2 V low-power OpAmp for integrated lock-in amplifiers. María Valero, Santiago Celma-Pueyo, Nicolás Medrano-Marques, Univ. de Zaragoza (Spain); Belen Calvo, Cecilia Gimeno, University of Zaragoza (Spain)</td>
<td>Lunch Break</td>
<td>Wed 12:40 to 14:00</td>
<td></td>
</tr>
</tbody>
</table>

Session 2

<table>
<thead>
<tr>
<th>Room: Chartreuse</th>
<th>Wed 14:00 to 15:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome by Local Co-Chair</td>
<td>Welcome by Local Co-Chair</td>
</tr>
<tr>
<td>Coffee Break</td>
<td>Coffee Break</td>
</tr>
</tbody>
</table>

Session 3

<table>
<thead>
<tr>
<th>Room: Chartreuse</th>
<th>Wed 15:30 to 16:50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome by Local Co-Chair</td>
<td>Welcome by Local Co-Chair</td>
</tr>
<tr>
<td>16:30: Effective properties of multi-phase anisotropic systems. Vladimir V. Shchennikov, Institute of Metal Physics (Russian Federation); Sergey V. Ovsyannikov, Univ. Bayreuth (Germany); Natalia V. Morozova, Igor V. Korobeynikov, Institute of Metal Physics (Russian Federation); Vsevolod V. Shchennikov Jr., Institute of Engineering Science (Russian Federation)</td>
<td>Lunch Break</td>
</tr>
</tbody>
</table>
Thursday 25 April

Session 4
Room: Chartreuse  .................  Thu 9:00 to 10:00
Signal Processing
Session Chair: Stefan Bosse, Univ. Bremen (Germany)
9:00: A low-cost pSoC architecture for long FFT, Pietro Angelo Lomolino, Pasquale Consorrotlo, Univ. della Calabria (Italy) .......................... [8764-14]
9:20: High speed Radix-4 soft-decision Viterbi decoder for MB-OFDM UWB system, Guojian Liang, Jorge Portilla, Teresa Riesgo, Univ. Politecnica de Madrid (Spain) ............................................. [8764-15]
9:40: A comparative study of continuous-time analog suitable equalizers, Carlos Sánchez-Azqueta, Santiago Célma-Pueyo, Univ. de Zaragoza (Spain) .................................................. [8764-17]
Coffee Break ..................................... Thu 10:00 to 10:40

Session 5
Room: Chartreuse  .....................  Thu 10:40 to 12:00
Reconfigurability and Virtualization (DREAMS)
Session Chair: Celia López-Ongil, Univ. Carlos III de Madrid (Spain)
10:40: Architectural evaluation of dynamic and partial reconfigurable systems designed with DREAMS tool, Andrés Otero, Angel Gallego, Eduardo de la Torre-Navarrete, Teresa Riesgo, Univ. Politecnica de Madrid (Spain) ........................................ [8764-18]
11:00: Virtual platform for power and security analysis of wireless sensor network, Álvaro Díaz Suárez, Javier González Bayon, Pablo Sánchez Espeso, Univ. de Cantabria (Spain). .......................... [8764-19]
11:20: A hierarchical scheduling and management solution for dynamic reconfiguration in FPGA-based embedded systems, Teresa G. Cervero García, Sebastian López Suárez, Roberto Sarmiento Rodríguez, Univ. de Las Palmas de Gran Canaria (Spain); Julio Daniel Dondo, Fernando Rincón, Juan Carlos López, Univ. de Castilla-La Mancha (Spain); A. Gómez, Univ. de Las Palmas de Gran Canaria (Spain) .............................. [8764-20]
11:40: Efficient and decentralized data transfer architecture for component based embedded systems, Jesus Barba, Univ. de Castilla-La Mancha (Spain). .......................... [8764-21]
Lunch Break ..................................... Thu 12:00 to 13:30

Plenary Session
Room: Pelvoux auditorium  ..........  Thu 13:30 to 14:30
Session Chair: Christos Tsamis, National Ctr. for Scientific Research Demokritos (Greece)
13:30: Biologically inspired large scale chemical sensor arrays and embedded data processing, Santiago Marco, A. Gutiérrez-Gámez, Univ. de Barcelona (Spain) and Institute for Bioengineering of Catalonia (Spain); Anders Lansner, Royal Institute of Technology (Sweden); Dominique Martinez, LORIA (France); J. P. Rospars, Institut National de la Recherche Agronomique (France); Romeo Beccherelli, Istituto per la Microelettronica e Microsistemi (Italy); Alexandre Perera, Univ. Politecnica de Catalunya (Spain); Tim C. Pearce, Univ. of Leicester (United Kingdom); Paul Vershure, Univ. Pompeu Fabra (Spain); Krishna Persaud, The Univ. of Manchester (United Kingdom) .... [8763-502]

Friday 26 April

Session 6
Room: Chartreuse  .....................  Thu 16:30 to 17:50
Test and Technology
Session Chair: Marcello Coppola, STMicroelectronics (France)
16:30: Hardening digital systems with distributed functionality: robust networks, Anna Vaskova, Celia López-Ongil, Marta Portela-Garcia, Mario García Valderas, Univ. Carlos III de Madrid (Spain) .......................... [8764-22]
16:50: Fault tolerant architectures by partial reconfiguration, Luis Andrés Cardona, Univ. Autónoma de Barcelona (Spain); Guo Yi, Ctr. Nacional de Microelectrónica (Spain); Carles Ferrer Ramis, Ctr. Nacional de Microelectrónica (Spain) and Univ. Autònoma de Barcelona (Spain) .......................... [8764-23]
17:30: OPC mask simplification using over-designed timing slack of standard cells, Yifan Qu, Chun Huan Heng, Arthur Tay, Tong Heng Lee, National Univ. of Singapore (Singapore) .......................... [8764-25]

Session 7
Room: Chartreuse  .....................  Fri 9:00 to 10:20
Communication and WSNs
Session Chair: Teresa Riesgo, Univ. Politecnica de Madrid (Spain)
9:00: A micropower supervisor for wireless nodes with a digital pulse frequency modulator battery monitor, Mirko Carloni, Rocco D’Aparo, Pierpaolo Senni, Scorano, Univ. Politecnica delle Marche (Italy); Berardo Naticchia, Smart Space Solutions S.R.l (Italy); Massimo Conti, Univ. Politecnica delle Marche (Italy) .... [8764-26]
9:40: Intelligent microchip networks: an agent-on-chip synthesis framework for the design of smart and robust sensor networks, Stefan Bosse, Univ. Bremen (Germany) .......................... [8764-28]
10:00: STAR: FPGA-based software defined satellite transponder, Daniele Davalle, Riccardo Cassettari, Sergio Saponara, Luca Fanucci, Univ. di Pisa (Italy); Luca Cucci, Intecs S.p.A (Italy); Franco Bigongiari, Intecs S.p.A. (Italy); Walter Errico, Intecs (Italy) .... [8764-29]
10:20: Design and optimization of an RF energy harvesting system from multiple sources, Mai Ali, Lufr Alibasha, Nasir Qaddoumi, American Univ. of Sharjah (United Arab Emirates) .... [8764-35]
Bio-MEMS and Medical Microdevices

Conference Co-Chairs: Manuel Delgado-Restituto, Instituto de Microelectrónica de Sevilla (Spain); Eleni Makarona, National Ctr. for Scientific Research Demokritos (Greece)

Programme Committee:
- Ryan C. Bailey, Univ. of Illinois at Urbana-Champaign (United States)
- Ricardo A. Carmona-Galán, IMSE-CNM (Spain)
- Gert Cauwenberghs, Univ. of California, San Diego (United States)
- Nikos Chronis, Univ. of Michigan (United States)
- Jens Ducree, Dublin City Univ. (Ireland)
- Artur Dybkó, Warsaw Univ. of Technology (Poland)
- Laura Maria Lechuga, Ctr. d’Investigations en Nanosciences et Nanotechnologies (Spain)
- Konstantinos Misiakos, National Ctr. for Scientific Research Demokritos (Greece)
- Ioannis Raptis, National Ctr. for Scientific Research Demokritos (Greece)
- Nicolas Roxhed, Royal Institute of Technology (Sweden)
- Ramón Ruiz-Merino, Univ. Politécnica de Cartagena (Spain)
- Josep Samitier Martí, Univ. de Barcelona (Spain)
- Winne E. Svendsen, Technical Univ. of Denmark (Denmark)
- Sabeth Verpoorte, Univ. of Groningen (Netherlands)
- Fernando Vidal-Verdú, Univ. de Málaga (Spain)
- Jean-Louis Viovy, Institut Curie (France)

Thursday 25 April

Session 1
Room: Meije ............................ Thu 9:00 to 10:20

Neural and Cellular Interfaces I
Session Chair: Manuel Delgado-Restituto, Instituto de Microelectrónica de Sevilla (Spain)
9:00: WIMAGINE: An implantable electronic platform for wireless 64-channel EEG recording, Michael Foerster, Jean Porcherot, Stéphanie Robinet, Raffaele D’Enrico, Vincent Josselin, Corinne Mestais, Guillaume Charvet, CEA-LETI (France) [8765-1]
9:20: A battery-free 64-channel neural spike wireless sensor array, Alberto Rodríguez-Pérez, Jesús Ruiz-Amaya, Jens Masuch, José Antonio Rodriguez-Rodríguez, Manuel Delgado-Restituto, Ángel B. Rodríguez-Vázquez, Ctr. Nacional de Microelectrónica (Spain) [8765-2]
9:40: Low-power techniques in multi-channel cortical recording implants (Invited Paper), Alexandre Schmid, Ecole Polytechnique Fédérale de Lausanne (Switzerland) [8765-3]

Coffee Break ................................ Thu 10:20 to 10:50

Session 2
Room: Meije ............................ Thu 10:50 to 12:10

BioMEMS Technologies I
Session Chair: Yves Fouillet, CEA-LETI (France)
10:50: Design of cell microgripper and actuation strategy, Aurelio Soma, Sonia Iamon, Politecnico di Torino (Italy) [8765-4]
11:10: Thermal actuated micropump for biological and medical application, David Rabaud, Rémy Lefèvre, Arnaud Salette, Loïc Dargent, Hakim Markot, Quentin Le Masne, Christophe Dehan, Panagiota Morfouli, Laurent Montès, IMEP-LAHOC (France) [8765-5]
11:30: Optimization of dielectrophoretic separation and concentration of pathogens in biological samples, Eleonora Bisigello, Commissariat à l’Énergie Atomique (France); Myriam Cubizolles, CEA-LETI (France); Frédéric Mallard, bioMérieux SA (France); Florian Pineda, CEA (France); Olivier Francois, Bruno Le Plouffe, Ecole Normale Supérieure de Cachan (France) [8765-6]
11:50: Modeling of an implantable device for remote arterial pressure measurement, Jose A. Miguel, Yolanda Lechuga, Mar Martinez, Univ. de Cantabria (Spain) [8765-7]

Lunch Break ................................ Thu 12:10 to 13:30

Plenary Session
Room: Pelvoux auditorium ................. Thu 13:30 to 14:30

Session Chair: Christos Tsamis, National Ctr. for Scientific Research Demokritos (Greece)
13:30: Biologically inspired large scale chemical sensor arrays and embedded data processing, Santiago Marco, A. Guichetta-Galvez, Univ. de Barcelona (Spain) and Institute for Bioengineering of Catalonia (Spain); Anders Lansner, Royal Institute of Technology (Sweden); Dominique Martinez, LORIA (France); J. P. Rospars, Institut National de la Recherche Agronomique (France); Romeo Beccherelli, Istituto per la Microelettronica e Microsistemi (Italy); Alexandre Perera, Univ. Politecnica de Catalunya (Spain); Tim C. Pearce, Univ. of Leicester (United Kingdom); Paul Verschure, Univ. Pompeu Fabra (Spain); Krishna Persaud, The Univ. of Manchester (United Kingdom) [8765-502]
Friday 26 April

Session 4
Room: Meije  .......... Fri 9:00 to 10:20
Neural and Cellular Interfaces II
Session Chair: Rafael Navas-González, Univ. de Málaga (Spain)
9:00: Wireless data and power transmission aiming intracranial epilepsy monitoring, Gurkan Yilmaz, Oguz Atasoy, Catherine Denollain, Ecole Polytechnique Fédérale de Lausanne (Switzerland) ................................... [8765-12]
9:20: BIO instrument for parallel impedance spectroscopy of biological cell cultures, Thomas Frank, Ingo Toebenh, Alexander Rössner, CIS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH (Germany) .......................... [8765-13]
9:40: Polymer electronics for in vitro electrophysiology, Michele Sessolo, Dion Khodagholi, Adel Hama, Ecole Nationale Supérieure des Mines de Saint-Étienne (France); Esther Steid, Bruno Buisson, Neuroservice (France); George G. Malliaras, Ecole Nationale Supérieure des Mines de Saint-Étienne (France) .......................................................... [8765-14]
10:00: Zinc oxide nanostuctures as low-cost templates for neuronal circuits, Anna Kritharidou, Zafeiroula Georgoussi, Christos Tsamis, Eleni Makarona, National Ctr. for Scientific Research Demokritos (Greece) ............................ [8765-15]
Coffee Break ........................................ Fri 10:20 to 10:50

Session 5
Room: Meije  .......... Fri 10:50 to 12:10
Biosensors
Session Chair: Eleni Makarona,
National Ctr. for Scientific Research Demokritos (Greece)
10:50: All-silicon monolithic optoelectronic platform for multi-analyte biochemical sensing (Invited Paper), Konstantinos Misiakos, National Ctr. for Scientific Research Demokritos (Greece) ........................................ [8765-16]
11:30: Real-time polarimetric biosensing using macroporous alumina membranes, Jesús Álvarez, Univ. de Valencia (Spain); Laura Sola, Consiglio Nazionale delle Ricerche (Italy); Marina Cretich, Consiglio Nazionale delle Ricerche (Italy); Marcus Swann, Fairfield Group Ltd. (United Kingdom); Marina Chiarini, Consiglio Nazionale delle Ricerche (Italy); Daniel Hill, Juan P. Martinez-Pastor, Univ. de Valencia (Spain) .......... [8765-17]
11:50: Nanobiosensor for HPV vaccine monitoring, Jose A. Saenz, Elisabeth Fernandez, Jordi Suarez, Socorro Vazquez, LEITAT Technological Ctr. (Spain); Marina Cazorla, Maria J. Lopez-Bosque, Alvaro Mata, Parc Cientific de Barcelona (Spain); Marc Massa, Francesc Mitjans, Laurent Aubouy, LEITAT Technological Ctr. (Spain) .................................................. [8765-18]
Lunch Break ........................................ Fri 12:10 to 13:30

Plenary Session
Room: Pelvoux auditorium  .......... Fri 13:30 to 14:30
Session Chair: Marc Belleville, CEA-LETI (France)
13:30: Micro- and nanoscale thermelectrics: an overview over basic concepts and recent advances, Markus Winkler, Fraunhofer-Institut für Physikalische Messtechnik IPM (Germany); Martin Jaegle, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Xi Liu, Christian-Albrechts Univ. zu Kiel (Germany); Jan Koenig, Harald Boettner, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Lorenz Kienle, Christian-Albrechts-Univ. zu Kiel (Germany). . . [8763-503]
Wednesday 24 April

Plenary Session

Room: Pelvoux auditorium .............. Wed 9:30 to 11:00

Symposium Opening

Thomas Becker, EADS Deutschland GmbH (Germany) and Rita Isny (Germany)

Welcome by Local Co-Chair

Marc Belleville, CEA-Leti (France)

Session Chair: Marc Belleville, CEA-Leti (France)

10:00: An autonomous structural health monitoring solution, Carol A. Featherston, Karen Hofford, Rhys Pullin, Jonathan Lees, Mark J. Eaton, Matthew Pearson, Cardiff Univ. (United Kingdom). ... [8763-501]

Opening Remarks

Room: Sept laux .......................... 11:05 to 11:20

Rainer Adelung, Christian-Albrechts-Univ. zu Kiel (Germany); Ion Tiginyanu, Academy of Sciences of Moldova (Republic of Moldova)

Session 1

Room: Sept laux .......................... Wed 11:20 to 12:40

Nanophotonics and Plasmonics I

Session Chair: Rainer Adelung, Christian-Albrechts-Univ. zu Kiel (Germany)

11:20: Nanotechnology for advanced photonic materials and structures (Invited Paper), Robert W. Boyd, Univ. of Ottawa (Canada). ... [8766-1]

12:00: Plasmonic nanorod metamaterials (Invited Paper), Wayne Dickson, Gregory A. Wurtz, Anatoly V. Zayats, King’s College London (United Kingdom). ... [8766-2]

Lunch Break .................................. Wed 12:40 to 14:00

Session 2

Room: Sept laux .......................... Wed 14:00 to 14:40

Nanophotonics and Plasmonics II

Session Chair: Rainer Adelung, Christian-Albrechts-Univ. zu Kiel (Germany)

14:00: Photocathodes using surface plasmon resonance, Hidenori Mimura, Chung-Han Chen, Yoichiro Neo, Takahiro Matsumoto, Shizuoka Univ. (Japan). ... [8766-3]

14:20: Analysis of resolution limit in plasmonic lithography and high-density line patterning for practical applications beyond 2x nm half pitch, Jae W. Hahn, Yonsei Univ. (Korea, Republic of). ... [8766-4]

Session 3

Room: Sept laux .......................... Wed 14:40 to 17:10

Quantum Dots and Nanowires

Session Chair: Ion M. Tiginyanu, Academy of Sciences of Moldova (Republic of Moldova)


Coffee Break .................................. Wed 15:20 to 15:50

15:50: Exciton lifetime measurements on single silicon quantum dots, Fatemeh Sanghahaleh, Royal Institute of Technology (Sweden); Benjamin Bruhn, Torsten Schmidt, Electrum Lab. (Sweden); Jan Linnros, Royal Institute of Technology (Sweden). ... [8766-6]

16:10: Semiconductor nanowire based devices for energy and sensor applications, Laurent Montès, Ronan Hinchet, Gustavo A. Ardidia Rodríguez, Xin Xu, IMEP-LAHC (France); Alexis Potié, IMEP-LAHC (France) and LTM CNRS (France); Thierry Baron, LTM CNRS (France); Mireille Mouis, IMEP-LAHC (France). ... [8766-7]

16:30: Properties of individual GaP/ZnO core-shell nanowires with radial PN junction, Jozef Novak, Agata Laurencikova, Peter Elias, Stanislav Hasenohrl, Roman Stoklas, Institute of Electrical Engineering (Slovakia); Jaroslav Kovac, Ivan Novotny, Slovak Univ. of Technology (Slovakia). ... [8766-8]

16:50: Photoconductivity of catalyst-free grown aluminum nitride nanowires, Kasif Teker, Istanbul Sehir Univ. (Turkey) and Frostburg State Univ. (United States); Andrew Siemann, Frostburg State Univ. (United States). ... [8766-9]

Thursday 25 April

Session 4

Room: Sept laux .......................... Thu 9:00 to 10:20

Carbon Nanotubes, Graphene

Session Chair: Hidenori Mimura, Shizuoka Univ. (Japan)

9:00: Graphene nanoelectronics for high frequency applications, Mircea Dragoman, National Institute for Research and Development in Microtechnologies-IMT Bucharest (Romania). ... [8766-10]

9:20: Aerographite: mechanical, electrical and optical properties of a cellular carbon nanomaterial with densities below 0.2 mg/ccm, Amir Schuchardt, Christian-Albrechts-Univ. zu Kiel (Germany); Matthias Mecklenburg, Technische Univ. Hamburg-Harburg (Germany); Yogendra Kumar Mishra, Sören Kaps, Rainer Adelung, Christian-Albrechts-Univ. zu Kiel (Germany); Karl Schulte, Technische Univ. Hamburg-Harburg (Germany). ... [8766-11]

9:40: Humidity sensing of an epoxy/MWCNT composite by electrical conductivity measurements, Heinz C. Neltertz, Univ. degli Studi di Salerno (Italy); Andrea Sorrentino, Consiglio Nazionale delle Ricerche (Italy); Luigi Vertuccio, Univ. degli Studi di Salerno (Italy). ... [8766-12]

10:00: Amorphous silicon-graphene anodes for lithium ion batteries, Filippos Farmakis, Demokritos Univ. of Thrace (Greece); Kostas Alexandrou, Columbia Univ. (United States); Costas Elmasides, Systems Sunlight S.A. (Greece); Ioannis Kymissis, Columbia Univ. (United States); Nikolaos Georgoulas, Demokritos Univ. of Thrace (Greece). ... [8766-13]

Coffee Break .................................. Thu 10:20 to 10:50
Conference 8766 • Room: Sept laux

Session 5
Room: Sept laux ..................... Thu 10:50 to 12:10

Nanoparticles for Biomedicine
Session Chair: Mircea Dragoman, National Institute for Research and Development in Microtechnologies-IMT Bucharest (Romania)
10:50: A new application of bionanoparticles as drug delivery in breast cancer. Neda Esfandiar, Technical Univ. of Denmark (Denmark) and Univ. of Tehran (Iran, Islamic Republic of); Mohnes Karimi, Karolinska Univ. (Sweden); Mina Kohi Habibi, Univ. of Tehran (Iran, Islamic Republic of); Masoud Solimani, Tabarbat Modares Univ. (Iran, Islamic Republic of);entine E. Soens, Techn Univ. (Denmark). [8766-14]
11:10: Effects of morphology on the emission of photons from GaN membranes fabricated by using surface charge lithography. Marion A. Stevens-Ka cetoff, The Univ. of New South Wales (Australia); Ion M. Tiganescu, Institute of Electronic Engineering and Nanotechnologies (Republic of Moldova) and Academy of Sciences of Moldova (Republic of Moldova); Veaceslav Popa, Technical Univ. of Moldova (Republic of Moldova); Patrice Brenner, Fachhochschule Karlsruhe Technik und Wirtschaft (Germany); Dagmar Gerthsen, Karlsruher Univ. (Germany). [8766-25]
11:50: Complexation of porphyrins with silver nanoparticles. Anna Gyulhykhanyan, Institute of Biochemistry (Armenia); Robert K. Gazaryan, Yerevan State Medical Univ. (Armenia); Vardan Gasparyan, Marina Paronyan, Grigor V. Gyulhykhanyan, Institute of Biochemistry (Armenia). [8766-17]
Lunch Break ............... Thu 12:10 to 13:30

Plenary Session

Room: Pelvoux auditorium ............ Thu 13:30 to 14:30
Session Chair: Christos Tsami, National Ctr. for Scientific Research Demokritos (Greece)
13:30: Biologically inspired large scale chemical sensor arrays and embedded data processing. Santiago Marco, A. Gutierrez-Galvez, Univ. de Barcelona (Spain) and Institute for Bioengineering of Catalonia (Spain); Anders Lanzner, Royal Institute of Technology (Sweden); Dominique Martinez, LORIA (France); J. P. Rospars, Institut National de la Recherche Agronomique (France); Romeo Beccherelli, Istituto per la Microelettrosica e Microsistemi (Italy); Alexandre Perera, Univ. Politecnica de Catalunya (Spain); Tim C. Pearce, Univ. of Leicester (United Kingdom); Paul Vershure, Univ. Pompeu Fabra (Spain); Krishna Persaud, The Univ. of Manchester (United Kingdom). [8763-502]

Poster Session
Room: Pelvoux Salle de Reception ........ Thu 14:30 to 16:30

Conference attendees are invited to attend the Poster Session on Thursday afternoon. Come view posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors are encouraged to display their posters beginning at 10:00 on Wednesday for extended viewing.

Creation of entangled photons by two level atom trapped in one-dimensional nanocavity with weakly decaying resonance mode. Vladislav Chel'tsov, Moscow State Mining Univ. (Russian Federation). [8766-23]
Calculation of nanoparticle surface shape instability development. Tamara Bogosyan, Sergey A. Chivilikhin, National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation). [8766-26]
Bacterial reduction of silver nitrate as the potential mechanism for silver nanoparticles forming. Olga D. Maslovskaya, Oleksandri I. Bilyi, Vasyl B. Getman, Svitlana Hnatysh, Ivan Franko National Univ. of L’viv (Ukraine). [8766-31]

Implementation of all-optical logic gate by adiabatic population transfer. Emil A. Gazazyan, Gayane Grigoryan, Vigen O. Chaltykyan, Olesya Tikhova, Institute for Physical Research (Armenia). [8766-33]
Gold nanoparticles embedded in organic/inorganic hybrid matrix: electrical and electrochemical behavior. Sandra Moreira, Carlos Silva, Maria de Jesus Gomes de Matos Gomes, Manuel Filipe Costa, Univ. do Minho (Portugal). [8766-34]

Session 6
Room: Sept laux ..................... Thu 16:30 to 18:10

Microfabrication
Session Chair: Rainer Adelung, Christian-Albrechts-Univ. zu Kiel (Germany)
16:30: Line width roughness reduction strategies for low energy multibeam lithography. Julien Jussot, Univ. Joseph Fourier (France); Beatrice Icard, CEA-LETI (France); Erwine Fargom, LTM CNRS (France); Claire Sound, CEA-LETI (France); Jassy Bustos, STMicroelectronics (France); Isabelle Servin, Laurent Pain, CEA-LETI (France). [8766-19]
16:50: Role of shape: ZnO tetrapods in fabrication of smart composites. Xin Jin, Univ. of Kiel (Germany); Yegondra Kumar Mishra, Rainer Adelung, Christian-Albrechts-Univ.-Univ. zu Kiel (Germany). [8766-20]
17:10: Diffraction microstructures based on metallic nanowires: a low cost devices for optical focusing. Soraya Zalta, Univ. des Sciences et de la Technologie Houari Boumediene (Algeria); Timothée Kouriba, Univ. Joseph Fourier (France), Omar Ziane, Univ. des Sciences et de la Technologie Houari Boumediene (Algeria); Guy Vitrant, IMEP-LAHC (France); Patrice L. Baldecek, Univ. Joseph Fourier (France). [8766-21]
17:50: Reversible nano-lithography of soft and hard materials. Jae Hong Park, National Nanofab Ctr. (Korea, Republic of); Hyun Ik Kang, National Nanofab Ctr. (Korea, Republic of) and KAIST (Korea, Republic of); Jun Yong Park, KAIST (Korea, Republic of); Dong Eon Lee, Seoul National Univ. (Korea, Republic of); Seok Woo Jeon, Chi Won Ahn, KAIST (Korea, Republic of); Kwang Soo Yoo, Univ. of Seoul (Korea, Republic of). [8766-35]
Integrated Photonics: Materials, Devices, and Applications II

Conference Chair: Jean-Marc Fédéli, CEA-LETI (France)

Session 1

Room: Belle-etoile .......................... Wed 11:00 to 12:20

Micro Cavities and Micro Resonators

Session Chair: Andrea I. Molleni, Politecnico di Milano (Italy)

11:00: Monolithic integration of high-Q wedge resonators with vertically coupled waveguides, Fernando Ramiro Manzano, Univ. degli Studi di Trento (Italy) ................................................................. [8767-1]

11:20: Fano lineshapes of ‘Peak-tracking chip’ spatial profiles analyzed with correlation analysis for bioarray imaging and refractive index sensing, Kristelle Bougot-Rolin, Sharbou Li, Hong Kong Univ. of Science and Technology (Hong Kong, China); Weisheng Yue, Longqing Chen, Xixiang Zhang, King Abdullah Univ. of Science and Technology (Saudi Arabia); Weijia Wei, Hong Kong Univ. of Science and Technology (Hong Kong, China); Henri Benisty, Institut d’Optique Graduate School (France) ................................................................. [8767-2]

11:40: Systematic optimization of the storage capacity of photonic crystal slab waveguides, Panagiotis Kanakis, National and Kapodistrian Univ. of Athens (Greece); Thomas Kamalakis, Harokopio Univ. of Athens (Greece); Thomas Sphicopoulos, Univ. of Athens (Greece) ................................................................. [8767-3]

12:00: Tallbot effect from periodic and quasi-periodic structures: application to 3D quasi-crystalline photonic lattices formation, Rafael Drampyan, Anahit Badalyan, Patsir A. Mantashyan, Vahram Mekhitaryan, Institute for Physical Research (Armenia); Varsenik Nersesyan, Russian-Armenian (Slavonic) State Univ. (Armenia) ................................................................. [8767-5]

Lunch Break ...................................................... Wed 12:20 to 13:40

Session 2

Room: Belle-etoile .......................... Wed 13:40 to 15:00

Photonic Materials

Session Chair: Inigo Molina-Fernandez, Univ. de Málaga (Spain)

13:40: Hydrogenated amorphous silicon nanowires with high nonlinear figure of merit and stable nonlinear optical response, Luca Caletti, Institut des Nanotechnologies de Lyon (France); Christelle Monat, Christian Grillot, Ecole Centrale de Lyon (France); Philippe Grosse, CEA-LETI-Minatec (France); Bahdise Bakir, Yao Peng, Menezz, Jean-Marie Fédéli, CEA-LETI (France); Paul J. Moss, The Univ. of Tokyo (Japan) ................................................................. [8767-6]

14:00: Travelling wave resonators fabricated with low-loss hydrogenated amorphous silicon, Timo Lipka, Julia Amthor, Jörg Müller, Technische Univ. Hamburg-Harburg (Germany) ................................................................. [8767-7]

14:20: High-resolution 3D structural and optical analyses of hybrid or composite materials by means of scanning probe microscopy combined with the ultramicromote technique: an example of application to engineering of liquid crystals doped with fluorescent quantum dots, Konstantin E. Mochalov, Institute of Molecular Medicine (Ireland) and Moscow Engineering Physics Institute (Russian Federation); Anton E. Efimov, V.I. Shumakov Federal Research Ctr. of Transplantology and Artificial Organs (Russian Federation); Alexey Y. Bobrovsky, Lomonosov Moscow State Univ. (Russian Federation); Anton A. Chistyakov, National Research Nuclear Univ. MEPhI (Russian Federation); Vladimir A. Oleinikov, National Research Nuclear Univ. MEPhI (Russian Federation) and Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences (Russian Federation); Valery P. Shibaev, Lomonosov Moscow State Univ. (Russian Federation); Igor R. Nabiev, Univ. de Reims Champagne-Ardenne (France) and Moscow Engineering Physics Institute (Russian Federation) ................................................................. [8767-8]

14:40: Submicron scale germanium selective epitaxial growth at different growth temperatures, Yasutaka Mizuno, The Univ. of Tokyo (Japan); Naoyuki J. Kawai, Univ. of Tokyo (Japan) ................................................................. [8767-9]

Coffee Break ...................................................... Wed 15:00 to 15:30

Session 3

Room: Belle-etoile .......................... Wed 15:30 to 16:50

Ge-Based Devices

Session Chair: Laurent Vivien, Institut d’Electronique Fondamentale (France)

15:30: On Si waveguide-integrated photodiodes for high speed and low power receivers, Leopold Vrot, STMicroelectronics (France) and Institut d’Electronique Fondamentale (France); Laurent Vivien, Institut d’Electronique Fondamentale (France); Jean-Michel Hartmann, Jean-Marie Fédéli, CEA-LETI (France); Delphine Marris-Morini, Institut d’Electronique Fondamentale (France); Stefano Carle Cecchi, Politecnico di Milano (Italy) ................................................................. [8767-10]

15:50: Electro-refractive effect in Ge/SiGe multiple quantum wells, Jacopo Frigerio, Politecnico di Milano (Italy); Papichaya Chasakul, Delphine Marris-Morini, Institut d’Electronique Fondamentale (France); Stefano Carle Cecchi, Politecnico di Milano (Italy) ................................................................. [8767-11]

16:10: Franz-Keldysh effect of Ge-on-Si pin diodes at common chip temperatures, Marc Schmid, Mathias R. Kaschel, Martin Gollohrer, Michael Oehme, Univ. Stuttgart (Germany); Jens Werner, Kai Ulbricht, Univ. of Stuttgart (Germany); Erich Kasper, Jörg Schulze, Univ. Stuttgart (Germany) ................................................................. [8767-12]

16:30: Resistance-capacitance limitation of fast double heterojunction Ge p-i-n photodetectors, Mathias R. Kaschel, Marc Schmid, Martin Gollohrer, Michael Oehme, Erich Kasper, Jörg Schulze, Univ. Stuttgart (Germany) ................................................................. [8767-13]
Thursday 25 April

Session 4
Room: Belle-etoile .......................... Thu 9:00 to 10:20
Photonics Platform I
Session Chair: Meint K. Smit, Technische Univ. Eindhoven (Netherlands)
9:00: TriPlex waveguide platform: low loss technology over a large wavelength range (Invited Paper), Marcel Hoekman, Arne Leineke, Rene G. Heideman, Lioni BX (Netherlands) ........................................... [8767-14]
9:40: Generic process for low-cost InP integrated photonics in industrial foundries (Invited Paper), Luc M. Augustin, Technische Univ Eindhoven (Netherlands); Huub P.M.M. Ambrosius, Technische Univ. Eindhoven (Netherlands); Peter J. A. Thijis, Technische Univ. Eindhoven (Netherlands) and SMARTPhotonics B. V. (Netherlands); Francisco M. Soares, Norbert Grote, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany); Dominik Szymanski, Wrocław Univ. of Technology (Poland); Michael J. Wade, Oclaro, Inc. (United Kingdom) and Technische Univ. Eindhoven (Netherlands); Meint K. Smit, Technische Univ. Eindhoven (Netherlands) .................................................. [8767-15]
Coffee Break .................................. Thu 10:20 to 10:50

Session 5
Room: Belle-etoile .......................... Thu 10:50 to 12:10
Photonics Platform II
Session Chair: Jean-Marc Fedéli, CEA-LETI (France)
10:50: A CMOS-compatible silicon photonics platform for classical and quantum integrated optics (Invited Paper), Christophe Galland, Ran Ding, Yang Liu, Yi Zhang, Li He, Nicholas Harris, Tom W. Baehr-Jones, Michael Hochberg, Univ. of Delaware (United States) .................................................. [8767-16]
11:30: ePIXfab: the silicon photonics platform (Invited Paper), Amit Khanna, IMEC at Ghent Univ. (Belgium); Peter A. O'Brien, Tyndall National Institute (Ireland); Jose M. Pozo, TNO (Netherlands); Maryse Fournier, Lab. d'Électronique de Technologie de l'Information (France); Lars Zimmermann, IHP GmbH (Germany); Timo Aalto, VTT Technical Research Ctr. of Finland (Finland); Pieter Dumon, IMEC (Belgium) .......................................................... [8767-17]
Lunch Break ................................... Thu 12:10 to 13:30

Plenary Session
Room: Pelvoux auditorium ................. Thu 13:30 to 14:30
Session Chair: Christos Tsamis, National Ctr. for Scientific Research Demokritos (Greece)
13:30: Biologically inspired large scale chemical sensor arrays and embedded data processing, Santiago Marco, A. Gutiérrez-Gámez, Univ. de Barcelona (Spain) and Institute for Bioengineering of Catalonia (Spain); Anders Larsner, Royal Institute of Technology (Sweden); Dominique Martinez, LORIA (France); J. P. Rospars, Institut National de la Recherche Agronomique (France); Romeo Beccherei, Istituto per la Microelettronica e Microsistemi (Italy); Alexandre Perera, Univ. Politécnica de Catalunya (Spain); Tim C. Pearce, Univ. of Leicester (United Kingdom); Paul Vershure, Univ. Pompeu Fabra (Spain); Christian Persaud, The Univ. of Manchester (United Kingdom) ........................................ [8763-502]

Poster Session
Room: Pelvoux Salle de Reception ........ Thu 14:30 to 16:30
Conference attendees are invited to attend the Poster Session on Thursday afternoon. Come view posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.
Poster authors are encouraged to display their posters beginning at 10:00 on Wednesday for extended viewing...
Analysis of the Drerer-Pound-Hall technique for the simultaneous detection of the detuning of more cavities on a single channel, Martina De Laurentis, Michele Riccio, Giuseppe De Falco, Luca Maresca, Andrea Irace, Giovanni Breglio, Univ. degli Studi di Napoli Federico II (Italy) ........................................................... [8767-4]
Design fabrication and optimization of LNOB3 based titanium indiffused waveguide polarizer for single mode fiber, Yasemin F. Ozturk, David J. Karabacak, Seval Dörnertas, Ekmel Ozbay, Bilkent Univ. (Turkey) ....................................................... [8767-34]

Friday 26 April

Session 7
Room: Belle-etoile .......................... Fri 9:00 to 10:20
Si and InP Based Devices
Session Chair: Norbert Grote, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany)
9:00: Semi-insulating substrate based generic InP photonic integration platform, Norbert Grote, Francisco M. Soares, Klemens Janiak, Jochen Kreissl, Martin Möhrle, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany) ........... [8767-22]
9:20: Heterogeneously integrated III-V/Si single mode laser based on a MMI-ring combination and triplet-ring reflectors, Shahram Keyanian, Steven Verstuyft, Univ. Gent (Belgium); Francois Lelarge, Guang-Hua Duan, Alcatel-Thales III-V Labs (France); Sonia Messaoudene, Jean-Marc Fedéli, CEA-LETI (France); Tjibbe De Vries, Barry Smalbrugge, Jeroen Bolk, Meint K. Smit, Technische Univ. Eindhoven (Netherlands); Dries Van Thourhout, Gunther Roelkens, Univ. Gent (Belgium) .......................................................... [8767-23]
9:40: Ultra compact switching matrix on InP, Djamilia Cherfi, Univ. des Sciences et Technologies de Lille (France); Etienne Gaufret, Université Montpellier II (France); Sonia Messaoudene, Jean-Marc Fedéli, CEA-LETI (France) ........................................ [8767-24]
10:00: Characterization of spectral optical responsivity of Si-photodiode junction combinations available in a 0.35µm HV-CMOS technology, Andrea Kranzer, austriamicrosystems AG (Austria) and Graz Univ. of Technology (Austria); Ewald Wachmann, Ingrid Jonak-Auer, Jördi Teva, Jong Mun Park, Rainer Kjærhofer, austriamicrosystems AG (Austria) ........................................ [8767-25]
Coffee Break .................................. Fri 10:20 to 10:50

Conference 8767 • Room: Belle-etoile

Narrow line-width microwave source based on bimodal Whispering Gallery Mode laser, Elodie Le Cre, Alphonse R. L. Lasolaino, Vincent Huet, Yannick Dumeige, Patrice Feron, Ecole Nationale Supérieure des Sciences Applicées et de Technologie (France); Michel S. Mortier, Ecole Nationale Supérieure de Chimie de Paris (France) .......................................................... [8767-36]
Si-based light emitter in an integrated photonic circuit for smart biosensor applications, Susette Germer, Lars Rebolie, Wolfgang Skorupa, Manfred Helm, Heilmoltz-Zentrum Dresden-Rossendorf e. V. (Germany) .......................................................... [8767-39]
Dot distribution type of grayscale photomask and color scale photomask for fabrication refractive and reflective microlens arrays, Gingle Tang, Huazhong Institute of Electro-Optics (China) .......................................................... [8767-40]
Liquid-crystal tunable plasmonic stripe directional coupler switches, Dimitrios Z. Zografopoulos, Romeo Beccherei, Istituto per la Microelettronica e Microsistemi (Italy) .......................................................... [8767-40]
Session 8
Room: Belle-etoile ........................ Fri 10:50 to 12:10

Nanostructures and Nanophotonics
Session Chair: Gunther Roelkens, Univ. Gent (Belgium)


11:10: SWG dispersion engineering for ultra-broadband photonic devices, Robert Halir, Univ. de Málaga (Spain) and Andalusian Ctr. for Nanomedicine and Biotechnology (Spain); Alejandro Maese-Novo, Sebastián Romero-García, Diego Pérez-Galacho, Luis Zavago-Pech, Univ. de Málaga (Spain); Alejandro Ortega-Moflux, Ilfico Molina-Fernandez, Univ. de Málaga (Spain) and Andalusian Ctr. for Nanomedicine and Biotechnology (Spain); Juan G. Wangüemert-Pérez, Univ. de Málaga (Spain); Pavel Cheben, National Research Council of Canada (Canada). .................................................. [8767-27]

11:30: Theoretical model of an interleaved-chirped array waveguide grating (IC-AWG), Bernardo Gargallo, Pascual Muñoz, Univ. Politècnica de Valencia (Spain). .......................................................... [8767-28]

11:50: Metamaterial-based sensor for skin disease diagnostics, Luigi La Spada, Renato Iovine, Richard Tarparelli, Lucio Vegni, Univ. degli Studi di Roma Tre (Italy). .................................................. [8767-29]

Lunch Break ........................................ Fri 12:10 to 13:30

Plenary Session
Room: Pelvoux auditorium ............... Fri 13:30 to 14:30

Session Chair: Marc Belleville, CEA-LETI (France)

13:30: Micro- and nanoscale thermoelectrics: an overview over basic concepts and recent advances, Markus Winkler, Fraunhofer-Institut für Physikalische Messtechnik IPM (Germany); Martin Jaegle, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Xi Liu, Christian-Albrechts Univ. zu Kiel (Germany); Jan Koeng, Harald Boettner, Fraunhofer-Institut für Physikalische Messtechnik (Germany); Lorenz Kienle, Christian-Albrechts-Univ. zu Kiel (Germany). . . . . [8763-503]

Session 9
Room: Belle-etoile ........................ Fri 14:30 to 15:50

Organic and Hybrid Devices
Session Chair: Patrice Feron, Ecole Nationale Supérieure des Sciences Appliquées et de Technologie (France)

14:30: Low-loss SiNx waveguides in polymer, Ziyang Zhang, Dongliang Liu, Norbert Keil, Norbert Grote, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany). .......................................................... [8767-30]

14:50: Colloidal PbS nanocrystals integrated to Si-based photonics for applications at telecom wavelengths, Markus Humer, Romain Guider, Wolfgang Jantsch, Thomas Fromherz, Institute of Semiconductor and Solid State Physics (Austria). .................................................. [8767-31]

15:10: Experimental studies of cobalt ferrite nanoparticles doped silica matrix 3D magneto-photonic crystals, Elie Abou Diwan, François Royer, Renata Kekezi, Damien Jamon, Marie-Françoise Blanc-Mignon, Univ. Jean Monnet Saint-Étienne (France); Sophie Neveu, Univ. Pierre et Marie Curie (France); Jean-Jacques Rousseau, Univ. Jean Monnet Saint-Étienne (France) ........................................... [8767-32]

15:30: Direct imprinting on chalcogenide glass and fabrication of infrared wire-grid polarizer, Itsunari Yamada, Univ. of Shiga Prefecture (Japan); Naoto Yamashita, Toshihiko Enishi, Issuzu Glass Co., Ltd. (Japan); Mitsuori Saito, Ryukoku Univ. (Japan); Kouhei Fukumi, National Institute of Advanced Industrial Science and Technology (Japan); Junji Nishii, Hokkaido Univ. (Japan). . . . [8767-33]
Dagamseh, Ahmad [8763-96] SPSThu
D’Agostino, Domenico [8767-26] S8
Dams, Florian [8763-21] S6
D’Aparo, Rocco [8764-26] S7
Dargent, Loïc [8765-5] S2
Davalle, Daniele [8764-29] S7
De Armas, Valentín [8764-27] S7, [8764-9] S2
Gaponenko, Sergey V. [8766-1] SPSThu
Gan, Tat-Hean [8763-49] SPSThu
Gameiro, Luis [8763-43] SPSThu
Gallego, Ángel [8764-18] S5
Galland, Christophe
Gad, Karim M. [8763-62] SPSThu
Getman, Vasyl B. [8766-31] SPSThu
Gerlach, Gerald 8763 Program Committee, 
Gergely, Csilla [8765-9] S3
Georgoussi, Zafeiroula [8765-15] S4
Georgiev, Yordan M. [8763-59] SPSThu
Genovese, Mariangela [8764-34] SPSThu
Gasparyan, Vardan [8766-17] S5
Garrido Fernandez, Blas [8767-18] S6, [8764-34] SPLThu
García-Viera Fernández, Alberto [8764-34] SPSThu
García, Javier A. [8763-33] S1
García-Viera Fernández, Alberto [8764-34] SPSThu
Garcia-Valderas, Mario [8764-22] S6, [8764-6] S2
Gallego, Ángel [8763-18] S5
Gameiro, Luis [8763-43] SPSThu
Gan, Tat-Hean [8763-49] SPSThu
Gaponenko, Sergey V. [8766-1] SPSThu
García, Javier A. [8763-33] S1
García-Viera Fernández, Alberto [8764-34] SPSThu
Gargallo, Bernardo [8767-28] S8
Garrido Fernandez, Blas [8767-18] S6
Gasparyan, Vardan [8766-17] S5
Gaufrès, Etienne [8767-19] S6
Gazayyan, Emil A. [8763-33] S1
Gebeshuber, Ille C. [8763-82] SPSThu
Genovese, Mariangela [8764-31] SPSThu, [8764-8] SPSThu
Georgaki, Isidora [8763-65] SPSThu
Georgiev, Yordan M. [8763-59] SPSThu
Georgoulas, Nikolaos [8766-13] S4
Georgoussi, Zafeiroula [8765-15] S4
Gergely, Csilla [8765-9] S3
Gerlach, Gerald 8763 Program Committee, 8763 S6 Session Chair, 8763 S8 Session Chair, [8763-34] SPSThu
Germer, Susette [8767-38] SPSThu
Gethsen, Dagmar [8766-25] S5
Getman, Vasyl B. [8766-31] SPSThu
Ghazaryan, Robert K. [8766-17] S5
Giammarini, Marco [8764-4] S1
Gimeno, Cecilia [8764-1] S1, [8764-5] S1
Giouroudi, Ioanna [8763-12] S3
Glacer, Christoph [8763-74] SPSThu
Glunz, Stefan W. [8763-62] SPSThu
Gogolides, Evangelos [8765-10] S3
Gökêkavas, Mutlu [8767-34] SPSThu
Goksör, Mattias [8765-19] S6
Gollhofer, Martin [8767-12] S3, [8767-13] S3
Gomes de Matos Gomes, Maria de Jesus [8766-34] SPSThu
Gómez, A. [8764-20] S5
Gonzalez Bayon, Javier [8764-19] S5
González Hernández, Oswaldo B. [8764-34] SPSThu
Gonzalez Perez, Benito B. [8764-33] S1
Gomezv, Igvars [8763-54] SPSThu
Gottardi, Massimo [8763-29] S8
Gougam, Adel B. [8763-104] SPSThu
Grammatikakis, M. D. [8764-12] S3
Greiner, Rinaldo [8763-18] S5
Grenier, Katie M. 8763 Program Committee
Grigoryan, Gayane [8766-33] SPSThu
Grille, Thomas [8763-86] SPSThu
Grillet, Christian [8767-6] S2
Grosse, Philippe [8767-6] S2
Grulkowski, Ireneusz [8763-13] S4
Guerrero Rodriguez, Erick [8764-1] S1
Guider, Romain [8763-31] S9
Gutierrez-Fernandez, Eric [8764-6] S2
Gutierrez-Gálvez, A. [8763-502] SPLThu
Gyulkhandanyan, Anna [8766-17] S5
Gyulkhandanyan, Grigor V. [8766-17] S5
H
Ha, Kwon Soo [8763-47] SPSThu
Haas, Willi [8763-103] SPSThu
Hadás, Zdenek [8763-48] SPSThu, [8763-55] SPSThu
Haefz, Moustapha 8763 Program Committee
Hahn, Jae W. [8766-4] S2
Halir, Robert [8767-27] S8
Halmidnse, Martina [8763-110] SPSThu
Hama, Adel [8765-14] S4
Hansal, Wolfgang [8763-110] SPSThu
Hardalov, Chavdar [8763-87] SPSThu
Harris, Leanne F. [8765-8] S3
Harris, Nicholas [8767-16] S5
Harteros, Kostantinos [8764-12] S3
Hartmann, Jean-Michel [8767-10] S3
Haseendro, Stanislav [8768-6] S3
Häublein, Volker [8763-83] SPSThu
Hayes, Greg [8763-6] S2
He, Li [8767-16] S5
Hedenig, Ursula [8763-86] SPSThu
Heideman, René G. [8767-14] S4
Heinrich, Emilie [8765-23] SPSThu
Heinrich, Stephen M. [8763-16] S5
Helm, Manfred [8767-38] SPSThu
Heng, Chun Huat [8764-25] S6
Henke, Markus [8763-34] SPSThu
Hernández, Pedro [8764-7] S2
Herrmann, Jonathan [8763-83] SPSThu
Herzog, Thomas [8763-93] SPSThu, [8763-95] SPSThu
Heuer, Henning 8763 Program Committee, [8763-100] SPSThu, [8763-93] SPSThu, [8763-95] SPSThu, [8763-97] SPSThu
Hidalgo, Diana [8763-33] S9
Hill, Daniel [8765-17] S5
Hinchet, Ronan [8766-7] S3
Hinz, Peter [8763-27] S8
Hoang, Antoine [8765-23] SPSThu
Hochberg, Michael [8767-16] S5
Hoekman, Marcel [8767-14] S4
Hofbauer, Franz [8763-28] S8
Hoffmann, Christian [8763-31] S9
Holford, Karen [8763-501] SPLWed
Holmes, Justin D. [8763-59] SPSThu
Holzmann, Dominik [8763-15] S4
Hoogerwerf, Arno 8763 Program Committee, 8763 S3 Session Chair
Huang, Kai [8763-71] SPSThu
Huber, Jochen [8763-88] SPSThu
Hudek, Peter [8763-101] SPSThu
Huet, Vincent [8767-36] SPSThu
Humer, Markus [8767-31] S9
Hyun, Kyung-A [8763-47] SPSThu
Hyun, Moon Seop [8766-36] S2

I
Iamoni, Sonia [8765-4] S2
Iannacci, Jacopo 8763 Program Committee, 8763 S1 Session Chair, 8763 S7 Session Chair, [8763-107] SPSThu, [8763-29] S8, [8763-8] S2
Iborra, Enrique 8763 Program Committee
Icard, Béatrice [8766-19] S6
Inman, Daniel J. [8763-60] SPSThu
Iovine, Renato [8767-29] S8
Irmer, Bernd [8763-38] SPSThu
Irisigler, Peter [8763-86] SPSThu
Isella, Giovanni [8767-32] SPSThu
Ismaïl, Mohammed [8764-21] S2
Izard, Nicolas [8767-19] S6

J

Jackson, Nathan M. [8763-51] SPLThu
Jaegle, Martin [8763-22] S6, [8763-503] SPLFri
Jager, Jean-Baptiste [8767-20] S6
Jakoby, Bernhard [8763-84] SPSThu
Jamon, Damien [8767-32] S9
Janak, Ludek [8763-55] SPSThu
Jang, Hyo-il [8763-47] SPSThu
Jansch, Wolfgang [8767-31] S9
Jayaraman, Vijaysekhar [8763-13] S4
Jee, Seok Woo [8766-35] S6, [8766-36] S2
Jia, Guobin [8763-59] SPSThu
Jia, Guobin [8763-59] SPSThu
Jiang, Fei [8763-91] SPSThu
Jiang, James [8763-13] S4
Jiménez-Márquez, Francisco [8763-14] S4
Jin, Xin [8766-20] S6
John, Dennis [8763-13] S4
Jonak-Auer, Ingrid [8767-25] S7
Joo, Chulmin [8763-47] SPSThu
Josselin, Vincent [8767-32] S9
K

Kadlec, Jaroslav [8763-5] S2
Kainz, Andreas [8763-37] SPSThu, [8763-80] SPSThu, [8763-85] SPSThu
Kakabakos, Sotiros E. [8765-10] S3
Kalnusnikhin, Victor P. [8766-5] S3
Kaliteevskaya, Elena N. [8766-28] SPSThu
Kaltenbacher, Manfred [8763-74] SPSThu
Kamalakis, Thomas [8767-63] S1
Kamenar, Ervin [8763-53] SPSThu
Kanislis, Panagiotis [8767-3] S3
Kanli, Yasemin F. [8767-34] SPSThu
Kaps, Sören [8766-11] S4
Kapser, Konrad 8763 Program Committee
Karimi, Mohsen [8766-14] S5
Karman, Salmah B. [8763-82] SPSThu
Kaschel, Mathias R. [8767-12] S3, [8767-13] S3
Kasemann, Martin [8763-62] SPSThu
Kasper, Erich 8763 Program Committee, [8767-12] S2, [8767-13] S3
Kawai, Naoyuki J. [8767-9] S2
Kawai, Naoyuki J. [8767-9] S2
Kawakita, Hiroki [8763-55] SPSThu
Keating, Adrian J. [8763-91] SPSThu
Keil, Norbert [8767-30] S9
Kekesi, Renata [8767-32] S9
Kenda, Andreas [8763-15] S4
Ketterer, Manuel [8763-31] S9
Keyvanshahin, Shahrab [8767-23] S7
Khanna, Amit [8767-17] S5
Kherani, Nazir P. [8763-104] SPSThu, [8763-61] SPSThu, [8763-73] SPSThu
Khodagholy, Dion [8765-14] S4
Kiefer, Christian [8763-20] S6
Kienle, Lorenz [8763-503] SPLFri
Killard, Anthony J. [8765-26] SPSThu, [8763-8] S3
Kim, Hee Yeoung [8763-116] SPSThu, [8763-36] S2
Kim, Hyunsun Alicia [8763-60] SPSThu
Kim, Kwan Ho [8763-116] SPSThu
Kim, Kwon Hyun [8763-60] SPSThu
Kimes, Matthew [8763-503] SPLFri
Kilham, Steven [8763-503] SPLFri
Klinke, Ulf [8763-32] S9
Knechtel, Roy 8763 Program Committee
Kneer, Janosch [8763-10] S3
Koenig, Jan [8763-503] SPLFri
Koeritz, Rene [8767-37] SPSThu
Koh, Harbing, Mina [8766-14] S5
Koh, Kwan H. [8763-80] SPSThu
Kokorakis, Nikolaos [8763-56] SPSThu
Köllpin, Alexander [8763-77] SPSThu
Kontizampasis, Dimitrios [8765-10] S3
Kopecek, Pavel [8763-55] SPSThu
Korgel, Brian A. [8763-42] SPSThu
Kornaros, George 8764 Program Committee, [8764-12] S3
Kosel, Jürgen [8763-12] S3
Kosho-Pour, Naser [8763-59] SPSThu
Kouriba, Timothée [8766-21] S6
Kovác, Jaroslav [8766-8] S3
Kraxner, Andrea [8767-25] S7
Kreissl, Jochen [8767-22] S7
Kritharidou, Anna [8765-15] S4
Körtz, Gerhard Symposium Chair
Krüger, Peter [8763-97] SPSThu
Krutzaus, Christian [8763-44] SPSThu
Kucera, Martin [8763-108] SPSThu, [8763-28] S8
Kuchta, Radek [8763-5] S2
Kugi, Andreas 8763 Program Committee
Kuhn, Harald [8763-77] SPSThu
Kwon, Mi-Hye [8763-47] SPSThu
Kwon, Seok-Jin [8763-112] SPSThu

L

La Spada, Luigi [8767-29] S8
Lacaita, Andrea L. [8764-21] S3, [8764-2] S1
Lad, Robert J. 8763 Program Committee, 8763 S2 Session Chair, [8763-11] S3
Lakshmanan, Ramji S. [8766-26] SPSThu
Lalinsky, Tibor [8763-101] SPSThu
Lang, Klaus-Dieter [8763-94] SPSThu
Lanser, Anders [8763-502] SPLThu
Lapuerta, Magín [8763-17] S5
Laurenciková, Agáta [8766-8] S3
Lavchev, Ventisiav M. [8763-86] SPSThu
Le Cren, Elodie [8767-36] SPSThu
Le Masne, Quentin [8765-5] S2
Le Roux, Xavier [8767-19] S6
Lechuga, Laura Maria 8765 Program Committee
Lechuga, Yolanda [8765-7] S2
Lee, Dong Eon [8766-35] S6
Lee, Jeong-Bong 8763 Program Committee
Lee, Kwyo [8763-116] SPSThu
Lee, Tong Heng [8764-25] S6
Lees, Jonathan [8763-3] S1, [8763-501] SPLWed
Leeser-Schädel, Monika 8763 Conference CoChair, 8763 S6 Session Chair, 8763 S9 Session Chair, [8763-19] S6, [8763-23] S7, [8763-39] SPSThu
Lefèvre, Rémy [8765-5] S2
Leidt, Anton [8763-84] SPSThu
Leinse, Arne [8767-14] S4
Leitao, Diana C. [8763-43] SPSThu
Leitner, Michael 8763 Program Committee
Lelarge, Francois [8767-23] S7
Lemaire, E. [8763-16] S5
Lenzhofener, Martin [8763-15] S4
Leonhardt, Brad [8763-42] SPSThu
Leonov, Nikita B. [8766-28] SPSThu
Leupolz, Bruno [8766-6] S2
Levantino, Salvatore [8764-11] S3, [8764-2] S1
Li, Huawei [8763-41] SPSThu
Li, Shunbo [8767-2] S1
Liang, Guixuan [8764-15] S4
Licitra, Christophe [8763-64] SPSThu
Liebscher, Eric [8763-111] SPSThu
Linnros, Jan 8766 Program Committee, [8766-6] S3
Lipka, Timo [8767-7] S2
Liu, Dongliang [8767-30] S9
Liu, Xi [8763-503] SPLFri
Liu, Yang [8767-16] S5
Index of Authors, Chairs, and Committee Members

Bold = SPIE Member

Lloyd Spetz, Anita 8763 Program Committee
Lloyd-Hughes, James 8766 Program Committee
Lohse, Thomas [8763-97] SPSThu
Lomoio, Pietro Angelo [8764-14] S4
Lopez Feliciano, Jose Francisco 8764 Program Committee
Lopez Suarez, Sebastian [8764-20] S5
Lopez, Giorgio [8764-16] SPSThu
López, Juan Carlos [8764-20] S5
Lopez-Bosque, Maria J. [8765-18] S5
López-Ongil, Celia 8764 Program Committee, 8764 S5 Session Chair, [8764-22] S6, [8764-6] S2
Lorenzelli, Leandro [8763-72] SPSThu
Lucat, C. [8763-16] S5

M
Mackowiak, Piotr [8763-24] S7, [8763-94] SPSThu
Lloyd-Hughes, James 8766 Program Committee
Lloyd Spetz, Anita 8763 Program Committee

Macaluso, Roberto [8767-21] S6
Mackowiak, Piotr [8763-24] S7, [8763-94] SPSThu
Macqueen, Mark O. [8763-82] SPSThu
Maese-Novo, Alejandro [8767-27] S8
Maffezzoni, Paolo [8764-11] S3
Maire, Reinhard [8763-83] SPSThu
Majzner, Jiri [8763-10] SPSThu
Makarona, Eleni [8763-50] SPSThu, 8765 Conference CoChair, 8765 S5 Session Chair, [8765-15] S4
Mallard, Frédéric [8765-6] S2
Malliaras, George G. [8764-14] S4
Mann, Rudi [8763-110] SPSThu

Mantashyan, Paytsar A. [8767-5] S1
Marco Colás, Santiago [8763-502] SPLThu
Margesin, Benno [8763-107] SPSThu
Marin, Francesco [8763-98] SPSThu
Marino, Francesco [8763-98] SPSThu
Marko, Hakim [8764-15] S2
Marschibois, MySa [8763-68] SPSThu
Marti, Richard [8767-19] S6
Martin, Marta [8765-9] S3
Martinez, Dominique [8763-502] SPLThu
Martinez, Mar 8764 Program Committee, [8765-7] S2
Martinez, Natividad 8764 Program Committee
Martinez-Pastor, Juan P. [8765-17] S5
Martyukin, Mariusz [8763-91] SPSThu
Maslovska, Olga D. [8766-31] SPSThu
Massa, Marc [8765-18] S5
Masuch, Jens [8763-2] S1

Mata, Alvaro [8765-18] S5
Matar, Maher [8763-46] SPSThu
Matheron, Muriel [8763-64] SPSThu
Mathewson, Alan [8763-51] SPSThu
Matsumoto, Takahiro [8766-3] S2
Mazar, Eric 8767 Program Committee
Mazza, Eros [8764-10] S3
Mecklenburg, Matthias [8766-11] S4
Medrano-Marques, Nicolas [8764-5] S1
Meguellati, Said [8763-36] SPSThu
Mekhitarian, Vahram [8767-5] S1
Melloni, Andrea I. 8767 Program Committee, 8767 S1 Session Chair
Menez, Sylvie [8767-6] S2
Messiaudène, Sonia [8767-23] S7
Mestais, Corinne [8765-1] S1
Meyendorf, Norbert G. [8767-95] SPSThu, [8763-97] SPSThu
Miguel, Jose A. [8767-5] S2
Mimura, Hidenori [8766-36] SPSThu
Miri, Salvador 8764 Program Committee
Miribel-Catalá, Pere Luis 8764 Program Committee
Misiakos, Konstantinos 8765 Program Committee, [8765-16] S5
Mitjans, Francesc [8765-18] S5
Mizuno, Yasutaka [8767-9] S2
Mochalov, Konstantin Evgenevich [8767-8] S2
Mohammed Zaki, Mohand [8765-113] SPSThu
Möhle, Martin [8762-22] S7
Molina-Fernandez, Itigo 8767 Program Committee, 8767 S2 Session Chair, [8767-27] S8
Monat, Christelle [8767-6] S2
Monteil, Guy [8763-113] SPSThu
Montés, Laurent [8765-5] S2, [8767-7] S3
Moreira, Sandra [8766-34] SPSThu
Morfoüi, Panagiota [8765-5] S2
Morköç, Hadis 8766 Program Committee
Mortier, Michel S. [8767-36] SPSThu
Mosca, Mauro [8767-21] S6
Moschou, Despina [8765-20] S6
Moss, David J. [8767-6] S2
Motakis, Antonios [8764-24] S6
Mous, Mireille [8766-7] S3
Moulid, Scott C. [8763-11] S3
Mukhopadhyay, Biswajit [8764-94] SPSThu
Müller, Jörg [8767-7] S2
Mulet, Alexandre [8767-20] S6
Muniz-Piñeiro, Andres [8763-35] SPSThu
Muñoz, Pascual [8767-28] S8

N
Nabiev, Igor R. [8767-8] S2
Naticchia, Berardo [8764-26] S7
Navas-González, Rafael 8765 S4 Session Chair, [8765-25] SPSThu
Nawaz, Mohsin [8763-74] SPSThu
Neikirk, Dean P. 8763 Program Committee, [8763-42] SPSThu
Neitzert, Heinz Christoph [8766-12] S4
Neo, Yoichiro [8763-6] S2
Neris, Romen [8764-7] S2
Nersesyan, Varsenik [8767-5] S1
Neveu, Sophie [8767-32] S9
Ngo, Ha-Duong [8763-24] S7, [8763-94] SPSThu
Niarchos, George [8763-50] SPSThu
Nielssch, Kornelius 8766 Program Committee
Nightingale, Adrian M. [8763-59] SPSThu
Nishii, Junji [8767-33] S9
Noe, Pierre [8767-20] S6
Nolan, Michael [8763-59] SPSThu
Noury, Adrien [8767-19] S6
Novak, Jozef [8766-8] S3
Novotny, Ivan [8768-8] S3
Novotny, Radovan [8765-7] S2
Nunez, Antonio [8767-4] S2

O
O’Brien, Peter A. [8767-17] S5
O’Donnell, James S. [8765-8] S3
Oehme, Michael [8767-12] S3, [8767-13] S3
Oerke, Alexa [8763-106] SPSThu
Oesterle, Florian [8763-77] SPSThu
Okazaki, Toshiya [8767-19] S6
O’Keeffe, Rosemary [8763-51] SPSThu
Oleinikov, Vladimir Alexandrovich [8767-8] S2
Omelchenko, Alexander Ivanovich [8766-16] S5
Ondrussek, Cestmir [8763-48] SPSThu
O’Neill, Mike [8763-51] SPSThu
Oppermann, Martin [8763-97] SPSThu
Orcioni, Simone 8764 Program Committee
Ortega-Morlux, Alejandro [8767-27] S8
Otero, Andrés [8767-18] S5

Özbay, Ekrem [8767-34] SPSThu
Ozer, Kaan [8763-45] SPSThu
Oztok, Evren [8763-34] SPSThu

P
P. Carballo, Pedro [8767-4] S2
Pabo, Eric [8763-6] S2
Pacheco, Sergio P. 8763 Program Committee

Index of Authors, Chairs, and Committee Members

|   | Waber, Tobias [8763-84] SPSThu
|   | Wachmann, Ewald [8767-25] S7
|   | Wada, Kazumi 8767 Program Committee, [8767-9] S2
|   | Waldron, Finbarr [8763-51] SPSThu
|   | Waldschik, Andreas [8763-23] S7
|   | Wale, Michael J. [8767-15] S4
|   | Walter, Susan [8763-93] SPSThu, [8763-95] SPSThu
|   | Wangüemert-Pérez, Juan Gonzalo [8767-27] S8
|   | Wasisto, Hutomoto Suryo [8763-114] SPSThu, [8763-27] S8, [8763-71] SPSThu, [8763-4] S1
|   | Weigel, Robert [8763-77] SPSThu
|   | Weimann, Thomas [8763-27] S8
|   | Wen, Weijia [8767-2] S1
|   | Werner, Jens [8767-12] S3
|   | Winkler, Markus [8763-503] SPLFri
|   | Wippermann, Frank C. [8763-105] SPSThu
|   | Wölflenstein, Jürgen 8763 Program Committee, 8763 S2 Session Chair, 8763 S4 Session Chair, [8763-10] S3, [8763-31] S9, [8763-88] SPSThu
|   | Wooldridge, Jenny [8763-35] SPSThu
|   | Wurtz, Gregory A. [8766-2] S1

| X | Xu, Xin [8763-24] S7
|   | Xu, Xin [8766-7] S3

| Y | Yamada, Itsunari [8767-33] S9
|   | Yamashita, Naoto [8767-33] S9
|   | Yi, Guo [8764-23] S6
|   | Yilmaz, Gurkan [8765-12] S4
|   | Yoo, Kwang Soo [8766-35] S6
|   | Yue, Weisheng [8767-2] S1
|   | Yuryev, Vladimir A. [8766-22] S6, [8765-5] S3

| Z | Zähringer, Sandy [8763-115] SPSThu
|   | Zaiba, Soraya [8766-21] S6
|   | Zakharov, Viktor V. [8766-28] SPSThu
|   | Zambito, Leandro [8767-21] S6
|   | Zavargo-Peche, Luis [8767-27] S8
|   | Zayats, Anatoly V. 8766 Program Committee, [8766-2] S1
|   | Zehetner, Johann [8763-101] SPSThu
|   | Zelenika, Saša [8763-53] SPSThu
|   | Zergioti, Ioanna [8767-20] S6
|   | Zhang, Qing [8763-114] SPSThu
|   | Zhang, Sheng P. [8763-42] SPSThu
|   | Zhang, Xixiang [8767-2] S1
|   | Zhang, Yi [8767-16] S5
|   | Zhang, Ziyang [8767-30] S9
|   | Ziane, Omar [8766-21] S6
|   | Zimmermann, Lars [8767-17] S5
|   | Zografopoulos, Dimitrios C. [8767-40] SPSThu

Verbelien, Yannick [8763-63] SPSThu
Verpoorte, Sabeth 8765 Program Committee
Vershure, Paul [8763-502] SPLThu
Verstuyft, Steven [8767-23] S7
Vertuccio, Luigi [8766-12] S4
Vetška, Vojtech [8763-48] SPSThu
Viana, Antoine [8765-21] S6
Vidal-Verdú, Fernando 8765 Program Committee, [8765-25] SPSThu
Vilumsone, Ausma [8763-54] SPSThu
Vinzenz, Xenia [8763-31] S9
Viovy, Jean-Louis 8765 Program Committee
Virot, Léopold [8767-10] S3
Vitrant, Guy [8766-21] S6
Vivien, Laurent 8767 Conference CoChair, 8767 S3 Session Chair, [8767-10] S3, [8767-11] S3, [8767-19] S6
Vlach, Radek [8763-5] S2, [8763-55] SPSThu
Voigt, Andreas [8763-18] S5
Völkm, Henning [8763-83] SPSThu
Völlmeke, Stefan [8763-102] SPSThu
Vondra, Marek [8763-90] SPSThu
Vorontsov, Grigoriy V. [8764-32] SPSThu
Voulazeris, George [8763-50] SPSThu
Voudas, Nikolaos [8765-20] S6

W

X

Y

Z

Bold = SPIE Member
Registration

Onsite Registration and Badge Pickup
Espace Pelvoux Salle de Reception
Tuesday 23 April . . . . . . . . . . . . . . . . . . . . . . . 15:00 - 17:00 hrs.
Wednesday 24 April . . . . . . . . . . . . . . . . . . . . . 8:00 - 17:00 hrs.
Thursday 25 April . . . . . . . . . . . . . . . . . . . . . . . 8:00 - 17:30 hrs.
Friday 26 April . . . . . . . . . . . . . . . . . . . . . . . . . . 8:30 - 17:00 hrs.

Conference Registration
Includes admission to all conference sessions, plenaries, panels, poster sessions, Welcome Reception, coffee breaks, and a choice of proceedings. Student pricing does not include proceedings.

Early Bird Pricing and Dates
Conference registration prices increase by €75 (US$100) after 17 April 2013. Student prices increase €20 (US$50).

SPIE Member and Student Member Pricing
• SPIE Members receive conference registration discounts. Discounts are applied at the time of registration.
• Student registration rates are available only to undergraduate and graduate students who are enrolled full time and have not yet received their Ph.D. Post-docs may not register as students. A student ID number or proof of student status is required with your registration.

Press Registration
For credentialed press and media representatives only. Please email contact information, title and organization to media@spie.org

SPIE Cashier
Registration Area. Open during registration hours.

• Registration Payments
  If you are paying by cash or cheque as part of your onsite registration, wish to add a course, workshop, or special event requiring payment, or have questions regarding your registration, visit the SPIE Cashier.

• Receipts and Certificate of Attendance
  Preregistered attendees who did not receive a receipt or attendees who need a Certificate of Attendance may obtain those from the SPIE Cashier.

• Badge Corrections
  Badge corrections can be made by the SPIE Cashier. Please have your badge removed from the badge holder and marked with your changes before approaching the counter.

Refund Information
There is a €35 (US$40) service charge for processing refunds. Requests for refunds must be received by 15 April 2013; all registration fees will be forfeited after this date. Membership dues and SPIE Digital Library subscriptions are not refundable.

U.S. Government Credit Cards
U.S. Government credit card users: have your purchasing officer contact the credit card company and get prior authorization before attempting to register. Advise your purchasing agent that SPIE is considered a 5968 company for authorization purposes.
Attendee Services

Internet Access
Complimentary Wireless Internet will be available. Connection speeds will depend on the number of users. Please read the SPIE Wireless Internet Service Policy found in the SPIE Event Policies.

SPIE Conference App
Download the free SPIE Conference App, available for iPhone and Android smart phones. Search and browse the programme, special events, participants, exhibitors, and more.

SPIE Publications
SPIE Books
Browse the latest SPIE Press Books and Proceedings which will be available at the registration desk.

Press
For credentialed press and media representatives only. Please email contact information, title, and organization to media@spie.org

SPIE Luggage + Coat Check
Salon Honneur - Open during registration hours
Luggage, package, and coat storage are available free of charge. Please note that the desk is staffed during registration hours.

Urgent Message Line
An urgent message line is available during registration hours: +33 4 7639 6600 – please request the SPIE registration desk. Attendees should check the message board in the registration area for any messages held for them.

Author/Presenter Information

Speaker Check-in and Preview Station
All conference rooms have a computer workstation, projector, screen, lapel microphone, and laser pointer. All presenters are requested to come to their conference room during the breaks with their memory devices or laptops to confirm their presentation display settings.

Poster Setup Instructions
Pelvoux Salle de Reception
Wednesday ................................. 10:00

 Setup:
Authors are encouraged to display their posters beginning at 10:00 on Wednesday for extended viewing. Each poster author will have a 1m x 1m area in which to display their poster presentation.

Interactive Poster Session:
Thursday ................................. 14:30 to 16:30
Conference attendees are invited to attend the Poster Session on Thursday afternoon. Come view posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.
Travel to Grenoble, France

Grenoble, France
Grenoble is a city in southeastern France, at the foot of the French Alps where it is beautifully situated on the Drac and Isère rivers, and surrounded by mountains. Grenoble is a lively, modern city, home to four universities, with more than 50,000 students. Its location in the Rhône-Alpes region has led to the city being known in France as the “Capital of the Alps”.

Grenoble Tourism
The city is now a significant scientific centre in Europe and includes chemical and electronics industries as well as nuclear research. It is also at the heart of French micro- and nanotechnology research, with the CNRS, CEA LETI, and MINATEC based in Grenoble, where 2400 researchers, 1200 students and 600 companies and technology transfer specialists have grouped around infrastructures established by the Grenoble Institute of Technology and CEA LETI in 2002.

Transportation

Airport Information:
Grenoble can be accessed by air from Grenoble-Isère Airport, Lyon Saint-Exupéry Airport and Geneva International Airport. Within Grenoble, there is a comprehensive bus and tram service that operates 26 bus routes and four tram lines and serves much of greater Grenoble. Being essentially flat, Grenoble is a bicycle-friendly city.

Transport from the Airport:
Lyon Airport provides regular connections to Grenoble, either via shuttle bus (for reservations visit the Faure Vercors website or, in France, call 0825 825 536 (N°indigo). You may also visit www.sncf.com, if you prefer to make the journey by train from Paris.

The Gare de Grenoble is served by the TGV rail network, with frequent high-speed services to and from Paris-Gare de Lyon, often with a stop at Lyon Saint-Exupéry Airport. There are also less frequent long distance trains to and from other destinations in France, such as Lille Europe and Nantes. Local rail services connect Grenoble with Lyon, Geneva, and other destinations to the east. Valence to the west provides connections with TGV services along the Rhone valley. Rail and road connections to the south are less well-developed.

Shuttles and Public Transportation:
The stops for Alpexpo Alpes Congres are:
- Tramway : Line A, Stop “Pôle Sud Alpexpo”
- Bus : Line 13, Stop Alpexpo; Line 12, 23, 2, STOP Grand Place
For further information please visit www.semitag.com

Driving Directions and Parking:
Alpexpo is near exit 6 of the Rocade Sud, connected directly to motorways A41, A48, and A49. There are approximately 1,200 parking space at Alpexpo Alpes-Congres. See map on page 30. For further information, please visit www.vincipark.com

Car Rental
Call the Hertz International Reservation Center at 1-800-654-3001 in the USA or your local Hertz Reservations Center to receive a special discount for SPIE. Reservations may also be placed on-line at www.hertz.com. You will receive 15% off qualifying Affordable rates at participating locations in Grenoble.

Be sure to identify yourself as a SPIE attendee. The PC#137480 must be on your advance reservation to receive this special offer. You must present this coupon at the time of rental in order to receive this discount.

This special offer is available for rentals from April 15-May 15, 2013. Highways link Grenoble to all major cities in the area including the autoroute to the northwest toward Lyon, to the southwest toward the Rhone valley via Valence, to the northeast toward Chambéry, the Alps, and Italy.
Alpexpo Alpes-Congrès has approximately 1200 parking spaces available.

- P1: 174 places
- P2: 190 places
- P3: 144 places
- P4: 480 places
- P5: 244 places
**Policies**

**Granting Attendee Registration and Admission**
SPIE, or their officially designated event management, in their sole discretion, reserves the right to accept or decline an individual’s registration for an event. Further, SPIE, or event management, reserves the right to prohibit entry or remove any individual whether registered or not, be they attendees, exhibitors, representatives, or vendors, who in their sole opinion are not, or whose conduct is not, in keeping with the character and purpose of the event. Without limiting the foregoing, SPIE and event management reserve the right to remove or refuse entry to any attendee, exhibitor, representative, or vendor who has registered or gained access under false pretenses, provided false information, or for any other reason whatsoever that they deem is caused under the circumstances.

**Misconduct Policy**
SPIE is a professional, not-for-profit society committed to providing valuable conference and exhibition experiences. SPIE is dedicated to equal opportunity and treatment for all its members and meeting attendees. Attendees are expected to be respectful to other attendees, SPIE staff, and contractors. Harassment and other misconduct will not be tolerated; violators will be asked to leave the event.

**Identification**
To verify registered participants and provide a measure of security, SPIE will ask attendees to present a government-issued Photo ID at registration to collect registration materials.

Individuals are not allowed to pick up badges for attendees other than themselves. Further, attendees may not have some other person participate in their place at any conference-related activity. Such other individuals will be required to register on their own behalf to participate.

**Capture and Use of a Person's Image**
By registering for this event, I grant full permission to SPIE to capture, store, use, and/or reproduce my image or likeness by any audio and/or visual recording technique (including electronic/digital photographs or videos), and create derivative works of these images and recordings in any SPIE media now known or later developed, for any legitimate SPIE marketing or promotional purpose. By registering for this event, I waive any right to inspect or approve the use of the images or recordings or of any written copy. I also waive any right to royalties or other compensation arising from or related to the use of the images, recordings, or materials. By registering, I release, defend, indemnify and hold harmless SPIE from and against any claims, damages or liability arising from or related to the use of the images, recordings, or materials, including but not limited to claims of defamation, invasion of privacy, or rights of publicity or copyright infringement, or any misuse, distortion, blurring, alteration, optical illusion or use in composite form that may occur or be produced in taking, processing, reduction or production of the finished product, its publication or distribution.

**Payment Method**
Registrants for paid elements of the event, who do not provide a method of payment, will not be able to complete their registration. Individuals with incomplete registrations will not be able to attend the conference until payment has been made. SPIE accepts VISA, MasterCard, American Express, Discover, Diner’s Club, checks and wire transfers. Onsite registrations can also pay with Cash.

**Authors/Coauthors**
By submitting an abstract, you agree to the following conditions:
- A full-length manuscript (6-12 pages) for any accepted oral or poster presentation will be submitted for publication in the SPIE Digital Library, printed conference Proceedings, and CD. (Some SPIE events have other requirements that the author is made aware of at the time of submission.)
- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the conference Proceedings and SPIE Digital Library (or via the requirements of that event).

**Audio, Video, Digital Recording Policy**
Conferences, courses, and poster sessions: For copyright reasons, recordings of any kind are prohibited without prior written consent of the presenter. Attendees may not capture nor use the materials presented in any meeting room without written permission. Consent forms are available at Speaker Check-In. Individuals not complying with this policy will be asked to leave a given session and asked to surrender their recording media.

Exhibition Hall: For security and courtesy reasons, recordings of any kind are prohibited unless one has explicit permission from on-site company representatives. Individuals not complying with this policy will be asked to surrender their recording media and to leave the exhibition hall.

Your registration signifies your agreement to be photographed or videotaped by SPIE in the course of normal business. Such photos and video may be used in SPIE marketing materials or other SPIE promotional items.

**Laser Pointer Safety Information/Policy**
SPIE supplies tested and safety-approved laser pointers for all conference meeting rooms. For safety reasons, SPIE requests that presenters use provided laser pointers.

Use of a personal laser pointer represents user’s acceptance of liability for use of a non-SPIE-supplied laser pointer. If you choose to use your own laser pointer, it must be tested to ensure <5 mW power output. Laser pointers in Class II and IIIa (<5 mW) are eye safe if power output is correct, but output must be verified because manufacturer labeling may not match actual output. Come to Speaker Check-In and test your laser pointer on our power meter. You are required to sign a waiver releasing SPIE of any liability for use of potentially non-safe, personal laser pointers. Misuse of any laser pointer can lead to eye damage.

**Access to Technical and Networking Events**
Persons under the age of 18 are not allowed in technical or networking events. Anyone 18 or older must register as an attendee. All technical and networking events require a valid conference badge for admission.

**Underage Persons on Exhibition Floor Policy**
For safety and insurance reasons, no one under the age of 16 will be allowed in the exhibition area during move-in and move-out. During open exhibition hours, only children over the age of 12 accompanied by an adult will be allowed in the exhibition area.

**Unauthorized Solicitation Policy**
Unauthorized solicitation in the Exhibition Hall is prohibited. Any non-exhibiting manufacturer or supplier observed to be distributing information or soliciting business in the aisles, or in another company’s booth, will be asked to leave immediately.

**Unsecured Items Policy**
Personal belongings should not be left unattended in meeting rooms or public areas. Unattended items are subject to removal by security. SPIE is not responsible for items left unattended.
General Information

Policies continued

**Wireless Internet Service Policy**

At SPIE events where wireless is included with your registration, SPIE provides wireless access for attendees during the conference and exhibition but cannot guarantee full coverage in all locations, all of the time. Please be respectful of your time and usage so that all attendees are able to access the internet.

Excessive usage (e.g., streaming video, gaming, multiple devices) reduces bandwidth and increases cost for all attendees. No routers may be attached to the network. Properly secure your computer before accessing the public wireless network. Failure to do so may allow unauthorized access to your laptop as well as potentially introduce viruses to your computer and/or presentation. SPIE is not responsible for computer viruses or other computer damage.

**Mobile Phones and Related Devices Policy**

Mobile phones, tablets, laptops, pagers, and any similar electronic devices should be silenced during conference sessions. Please exit the conference room before answering or beginning a phone conversation.

**Smoking**

For the health and consideration of all attendees, smoking is not permitted at any event elements, such as but not limited to: plenaries, conferences, workshops, courses, poster sessions, hosted meal functions, receptions, and in the exhibit hall. Most facilities also prohibit smoking in all or specific areas. Attendees should obey any signs preventing or authorizing smoking in specified locations.

**Hold Harmless**

Attendee agrees to release and hold harmless SPIE from any and all claims, demands, and causes of action arising out of or relating to your participation in the event you are registering to participate in and use of any associated facilities or hotels.

**Event Cancellation**

If for some unforeseen reason SPIE should have to cancel the event, registration fees processed will be refunded to registrants. Registrants will be responsible for cancellation of travel arrangements or housing reservations and the applicable fees.

**Confidential Reporting of Unethical or Inappropriate Behavior**

SPIE is an organization with strong values of responsibility and integrity. Our Ethics Statement and Code of Professional Conduct contain general guidelines for conducting business with the highest standards of ethics. SPIE has established a confidential reporting system for staff & other stakeholders to raise concerns about possible unethical or inappropriate behavior within our community. Complaints may be filed by phone or through the website, and, if preferred, may be made anonymously. The web address is www.SPIE.ethicspoint.com and the toll free hotline number is 1-888-818-6898.
Helping engineers and scientists stay current and competitive
2014 Photonics Europe

Advances in applications of photonics, optics, lasers, and micro/nanotechnologies

Mark Your Calendar
spie.org/pe2014

Conferences, Courses and Exhibition
14-17 April 2014

Location
Square Brussels Meeting Centre
Brussels, Belgium