



Symposium on Design, Test, Integration & Packaging of MEMS/MOEMS

Cannes, Côte d'Azur, France – 25-27 April 2012



Sponsored by



20-Oct-11

Chair: **Bernard COURTOIS**, CMP Grenoble, France Co-Chair: **Jean-Michel KARAM**, MEMSCAP, Bernin, France

Call for Papers



CAD, DESIGN AND TEST Conference

Chair: Arturo AYON, Univ. of Texas at San Antonio, USA
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 Tamal MUKHERJEE, Carnegie Mellon Univ., Pittsburgh, USA
 Kazuhiro HANE, Sendai University, Japan
 Jian ZHU, Nanjing Electronic Devices Institute, China
 Vladimir SOBOLEV, South Dakota School of Mines and Technology



MICROFABRICATION, INTEGRATION AND PACKAGING Conference

Chair: Benoit CHARLOT, IES, Montpellier, France
Co-Chair: Ryutaro MAEDA, UMEMSME/AIST Tsukuba, Japan
 Programme Committee: *to include:*
 Geok Ing NG, Nanyang Technological University, Singapore
 Mohamed HENINI, Univ. of Nottingham, UK
 Xuechuan SHAN, SIMTech, Singapore
 Masayoshi ESASHI, Tohoku Univ., Japan
 Gou-Jen WANG, National ChungHsing Univ., Taiwan
 Andrew TAY, National Univ. of Singapore
 David ALLEN, Cranfield Univ., Bedford, UK
 Reza GHODSSI, Univ. of Maryland, College Park, USA
 Zhenfeng WANG, SIMTech, Singapore
 Henri CAMON, LAAS, Toulouse, France
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 Toshihiro ITOH, AIST, Japan
 Emanuela PROIETTI, IMM Roma, Italy
 Susumu KAMINAGA, Sumitomo Precision Products Co., Ltd., Japan
 Matthias WORGULL, FZK, Karlsruhe, Germany

INVITATION TO PARTICIPATE

This Symposium will be a follow-up to the very successful issues held in 1999 and 2000 in Paris and in 2001, 2002 and 2003 in Mandelieu-La Napoule, in 2004 and 2005 in Montreux, Switzerland in 2006, in 2007 in Stresa, Italy, in 2008 in Nice, France, in 2009 in Rome, Italy in 2010 in Seville, Spain and Aix-en-Provence, France in 2011. This series of Symposia is a unique single-meeting event expressly planned to bring together participants interested in manufacturing microstructures and participants interested in design tools to facilitate the conception of these microstructures. Again, a special emphasis will be put on the very crucial needs of MEMS/MOEMS in terms of packaging solutions. The goal of the Symposium is to provide a forum for in-depth investigations and interdisciplinary discussions involving design, modeling, testing, micromachining, microfabrication, integration and packaging of structures, devices, and systems.

We look forward to welcoming you to Cannes and encourage you to participate by submitting an abstract for one of the two Conferences.

Bernard COURTOIS & Jean-Michel KARAM

DATES: SUBMISSION OF ABSTRACTS: 20 October 2011

Notification of acceptance: 15 January 2012 - Submission of manuscripts for distribution at the Symposium: 29 February 2012

Submission will be electronically only. Your abstract must include preferably 1500 words. Detailed instructions are posted on the Symposium web site. Questions may be directed in the meantime by e-mail (dtip@imag.fr).

CONDITIONS OF ACCEPTANCE: Authors are expected to secure registration fees and travel and accommodation funding, through their sponsoring organizations, before submitting abstracts. Abstracts should contain enough detail to clearly convey the approach and the results of the research. Government and company clearance to present and publish should be final at the time of submittal.

TECHNICAL PROGRAMME will include oral talks, poster presentations, a panel discussion and invited speakers. Special Sessions are also expected.

INVITED SPEAKERS:

Using MEMS to build the Device and the Package

Thomas W. KENNY, Stanford Univ., USA
 There has been interest in MEMS Resonators for more than 40 years, including discussion of their use as frequency references. Unfortunately, the performance of MEMS resonators for these applications has always been limited by drift in frequency, which comes from the temperature coefficient of the modulus of Silicon, as well as the role of adsorbed molecules from the environment of the resonator and other nefarious effects. The presentation will discuss a wafer-scale MEMS encapsulation process that enables a solution to many of these problems with MEMS resonators.

Integrated MEMS using adhesive bonding and other methods

Masayoshi ESASHI, Tohoku Univ., Japan
 Integrated MEMS for multiband wireless systems and so on have been developed by wafer level bonding of MEMS structures as filters and switches on LSI.

MEMS integration for smart medical devices: opportunities and challenges

Martin DETERRE, Sorin Group, France
 In the insatiable quest for miniaturization, improved performance, novel sensing and treatment capabilities, implantable medical devices are now required to integrate micro-nano systems. As they enter the biomedical world, MEMS are facing new challenges such as biocompatibility, perpetual reliability and extended life span. The talk will discuss how these disciplines are now converging to broaden the scope of perspectives for healthcare devices, paving the way to innovative treatments and life-improving implantable smart sensors.



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IEEE COMPONENTS, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY 20-Oct-11

Chair: **Bernard COURTOIS**, CMP Grenoble, France Co-Chair: **Jean-Michel KARAM**, MEMSCAP, Bernin, France

SPECIAL SESSIONS

Special Session of bio-MEMS/NEMS

The Special session of bio-MEMS/NEMS puts together papers on both theoretical analysis and on practical applications of MEMS and NEMS in biomedicine and biochemistry. General topics of interest include design, characterization, modeling, and fabrication of biomedical devices, miniaturized analytic devices, dynamics of fluids in micro channels, Tissue engineering, and others.

This special session is organized by **Gou-Jen WANG**, National ChungHsing Univ., Taiwan.

Special Session on Low Temperature Cofired Ceramic for MEMS

Over the years, recent advances have been made in the use of ceramic green tapes for the 3D manufacturing of microsystems. These include microfluidic channels, pressure sensors, actuators alongside their electronic circuitry, all within the same platform. This special session will review the advances made on low temperature cofired ceramic (LTCC) based MEMS and the components, devices and systems built with such a platform in the MEMS area.

This special session is organized by **Marc DESMULLIEZ**, Heriot-Watt Univ., Edinburgh, UK

The CAD, Design and Test Conference will bring together researchers, engineers and practitioners involved in the development of CAD tools and design methodologies for MEMS and MOEMS. The participants will also have the opportunity to interact with the other Conference by the means of plenary talks.

The topics for this Conference include:

- Technology CAD in general
- Modeling and simulation of fabrication processes
- Devices and components (sensors, actuators, ...)
- MEMS/MOEMS libraries and IP
- Signal processing
- Integrated CAD tools
- Numerical simulation
- Yield estimation
- Failure mechanisms
- Fault modelling
- Fault simulation and test pattern generation
- Mechanical simulation
- Thermal evaluation
- Interoperability of CAD/CAE tools
- Multiphysics simulation
- Structured design methodologies
- Languages for among designs and tools
- Model order reduction
- 3D Integration of MEMS

The Microfabrication, Integration and Packaging Conference will bring together researchers, engineers and practitioners involved in the development of integration technologies and packaging for MEMS and MOEMS. The participants will also have the opportunity to interact with the other Conference by the means of plenary talks.

The topics for this Conference include:

- Integrated processes (micromachining, micromolding, ...)
- Process integration between MEMS and electronics
- Microlithography issues unique to MEMS/MOEMS
- Manufacturing
- Materials
- Assembly technologies
- Packaging for harsh environments
- MOEMS packaging
- RF and microwave packaging
- Test structures
- Devices and components (sensors, actuators, ...)
- Dimensional measurements
- Physical measurements
- Failure analysis
- Reliability
- Characterization
- Process monitoring
- Non destructive evaluation

SPECIAL ISSUES OF JOURNALS AND MAGAZINES: It is a tradition that Special Issues of Journals and Magazines are published after the Symposium. These Special Issues collect revised versions of papers presented during the Symposium. DTIP 2012 Special Issues will be organized in the Journal of Microsystem Technologies and in the Journal of Analog Integrated Circuits and Signal Processing.



VENUE: The Novotel Cannes Montfleury is in the heart of Cannes. A ten-minute walk to Cannes' attractions such as the Croisette and Palais des Festivals.

CANNES: Cannes' combination of assets makes each event exceptional. Its sunny climate the whole year round, the richness of its landscapes, its modern infrastructure and its ease of access from the biggest cities of the world enable Cannes to be the choice destination of DTIP 2012.

SPECIFIC EVENTS SPONSORING: If you wish to sponsor an event like a reception, a lunch, or any specific event during the Symposium, please contact the Symposium Chair.

ADVERTISING IN THE PROGRAMME BOOKLET: The programme booklet will be widely distributed to announce the Symposium. If you wish to advertise in the programme booklet, please contact the Symposium Chair.

PROCEEDINGS: The Proceedings of the Symposium will be available at the meeting.

Check the web site for more information: [HTTP://CMP.IMAG.FR/CONFERENCES/DTIP/DTIP2012](http://CMP.IMAG.FR/CONFERENCES/DTIP/DTIP2012)