

MEMS 2009 PROGRAM SCHEDULE

Sunday, 25 January 2009

18:30 - **REGISTRATION**
20:30

18:30 - **WELCOME RECEPTION**
20:30

Monday, 26 January 2009

09:00 **WELCOME ADDRESS**

09:20 **INVITED SPEAKER I**
MEMS EPIPHANY 1
Benedetto Vigna
ST Microelectronics s.r.l., ITALY

SESSION I - MEMS ACTUATORS

Session Chairs:

D. Elata, *Technion - Israel Institute of Technology, ISRAEL*
Q. Lin, *Columbia University, USA*

10:00 **DEVELOPMENT OF CALIBRATION STANDARDS FOR THE OPTICAL MEASUREMENT OF IN-PLANE DISPLACEMENTS OF MICROMECHANICAL COMPONENTS** 7
J. Gaspar¹, J. Held¹, G. Pedrini², W. Osten², and O. Paul¹
¹University of Freiburg - IMTEK, GERMANY and ²University of Stuttgart, GERMANY

10:20 **3D MAGNETIC MICROACTUATOR MADE OF NEWLY DEVELOPED MAGNETICALLY MODIFIED PHOTOCURABLE POLYMER AND APPLICATION TO SWIMMING MICROMACHINE AND MICROSCREW PUMP** 11
K. Kobayashi and K. Ikuta
Nagoya University, JAPAN

10:40 **EXHIBIT INSPECTION AND BREAK**

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Session Chairs:

S. Bhawe, *Cornell University, USA*
J.-B. Yoon, *Korea Advanced Institute of Science and Technology (KAIST), KOREA*

11:10 **NOVEL CONCEPT OF MICROWAVE MEMS RECONFIGURABLE 7X45° MULTI-STAGE DIELECTRIC-BLOCK PHASE SHIFTER** 15
N. Somjit, G. Stemme, and J. Oberhammer
Royal Institute of Technology (KTH), SWEDEN

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University of California, Berkeley, USA

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K.-L. Chen¹, H. Chandralim², A.B. Graham¹, S.A. Bhawe², R.T. Howe¹, and T.W. Kenny¹
¹Stanford University, USA and ²Cornell University, USA

12:10 **A NOVEL STRESS-GRADIENT-ROBUST METAL-CONTACT SWITCH** 27
H. Sedaghat-Pisheh¹, J.-M. Kim², and G.M. Rebeiz¹
¹University of California, San Diego, USA and ²Chonbuk National University, KOREA

SESSION III - FUEL CELL POWER MEMS

Session Chairs:

X. Wang, *Tsinghua University, CHINA*

E. Yeatman, *Imperial College, UK*

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V.V. Swaminathan, L. Zhu, B. Gurau, R.I. Masel, and M.A. Shannon
University of Illinois, Urbana-Champaign, USA
- 13:10 **EXHIBIT INSPECTION AND LUNCH**
- 14:30 - **POSTER/ORAL SESSION I**
- 16:30 Session Chairs:
G. Stemme, *Royal Institute of Technology (KTH), SWEDEN*
R. Zengerle, *University of Freiburg - IMTEK, GERMANY*

SESSION IV - MEMS IN MICROFLUIDICS

Session Chairs:

Y. Suzuki, *University of Tokyo, JAPAN*

Y. Zohar, *University of Arizona, USA*

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Royal Institute of Technology (KTH), SWEDEN
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T. Metz¹, G. Birkle², R. Zengerle^{1,2}, and P. Koltay²
¹*Institute for Micromachining and Information Technology (HSG-IMIT), GERMANY and*
²*University of Freiburg - IMTEK, GERMANY*
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W.-Y. Lin¹, Y.-H. Lin¹, and G.-B. Lee^{1,2}
¹*National Cheng Kung University, TAIWAN and* ²*Industrial Technology Research Institute, TAIWAN*
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Tohoku University, JAPAN

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Luke P. Lee
University of California, Berkeley, USA

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W. van der Wijngaart, *Royal Institute of Technology (KTH), SWEDEN*

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Y. Morimoto¹, Y. Tsuda^{1,2}, and S. Takeuchi^{1,2,3}
¹*University of Tokyo, JAPAN*, ²*Ministry of Economy, Trade and Industry (METI), JAPAN*, and ³*Japan Science and Technology Agency (JST)*
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W.C. Lee^{1,3}, F.A. Kuypers¹, Y.-H. Cho², and A.P. Pisano³
¹*Children's Hospital Oakland, USA*, ²*Korea Advanced Institute of Science and Technology (KAIST), KOREA*, and ³*University of California, Berkeley, USA*
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E. Yoon, *University of Michigan, USA*

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¹*Delft University of Technology, THE NETHERLANDS* and ²*Haldor Topsøe A/S, DENMARK*
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¹*University of Illinois, Urbana-Champaign, USA* and ²*Wright-Patterson Air Force Base, USA*
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Chonnam National University, KOREA

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Analog Devices, USA

13:10 **MEMS 2010 ANNOUNCEMENT**

13:20 **EXHIBIT INSPECTION AND LUNCH**

14:30 - **POSTER/ORAL SESSION II**

16:30 Session Chairs:

J.-U. Bu, *SenPlus Inc., KOREA*

S. Konishi, *Ritsumeikan University, JAPAN*

SESSION VII - PHYSICAL MEMS

Session Chairs:

O. Brand, *Georgia Institute of Technology, USA*

U.M. Gomez, *Robert Bosch GmbH, GERMANY*

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National Taiwan University, TAIWAN

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Peking University, CHINA

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¹*Boston University, USA* and ²*Boston College, USA*

Wednesday, 28 January 2009

- 09:00 **INVITED SPEAKER III**
DAMAGE-FREE PLASMA ETCHING PROCESSES FOR
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Seiji Samukawa
Tohoku University, JAPAN

SESSION VIII - NANOPROCESSING AND NEMS

Session Chairs:

G.-B. Lee, *National Cheng Kung University, TAIWAN*

L. Lin, *University of California, Berkeley, USA*

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B.D. Sosnowchik¹, P.J. Schuck², J. Chang¹, and L. Lin¹
¹University of California, Berkeley, USA and ²Lawrence Berkeley National Laboratory, USA
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D. Acquaviva^{1,3}, D. Tsamados¹, Ph. Coronel², T. Skotnicki³, and A.M. Ionescu¹
¹Ecole Supérieure d'Ingenieurs en Electrotechnique et Electronique (EPFL), SWITZERLAND,
²LITEN-CEA, FRANCE, and ³ST Microelectronics, FRANCE
- 11:00 **EXHIBIT INSPECTION AND BREAK**

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Session Chairs:

J.M. Miao, *Nanyang Technological University, SINGAPORE*

B. Pruitt, *Stanford University, USA*

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B. Schlattmann², M. van Bommel², C. de Nooijer², J. Lauria³, R. Vanneer⁴, and B. van Drienuizen⁴
¹Interuniversity Microelectronics Centre (IMEC), BELGIUM, ²Philips Applied Technologies,
THE NETHERLANDS, ³ASML, USA, and ⁴ASML, THE NETHERLANDS
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Delft University of Technology, THE NETHERLANDS
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Ecole Supérieure d'Ingenieurs en Electrotechnique et Electronique (EPFL), SWITZERLAND
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B.-K. Lee, Y.-H. Song, and J.-B. Yoon
Korea Advanced Institute of Science and Technology (KAIST), KOREA

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University of Twente, THE NETHERLANDS

13:10 **EXHIBIT INSPECTION AND LUNCH**

14:30 - **POSTER/ORAL SESSION III**

16:30 Session Chairs:
G.K. Fedder, *Carnegie Mellon University, USA*
Y.B. Gianchandani, *University of Michigan, USA*

SESSION X - OPTICAL MEMS

Session Chair:

L. Lin, *University of California, Berkeley, USA*
H. Zappe, *University of Freiburg, GERMANY*

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Samsung Electronics Co., Ltd., KOREA

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¹*University of California, Los Angeles, USA* and ²*Intelligent Optical Systems, Inc. (IOS), USA*

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Yonsei University, KOREA

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University of Tokyo, JAPAN

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University of Tokyo, JAPAN

19:30 - **CONFERENCE BANQUET**
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Thursday, 29 October 2009

09:00 - POSTER/ORAL SESSION IV

11:00 Session Chairs:

T. Akin, *Middle East Technical University, TURKEY*

O. Paul, *University of Freiburg - IMTEK, GERMANY*

10:30 REFRESHMENTS SERVED

SESSION XI - BIOMEMS

Session Chairs:

K. Böhringer, *University of Washington, USA*

K. Sawada, *Toyohashi University of Technology, JAPAN*

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¹University of Tokyo, JAPAN and ²Japan Science and Technology Agency (JST), JAPAN
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¹Kyoto University, JAPAN and ²RIKEN, JAPAN
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Stanford University, USA
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¹Toyohashi University of Technology, JAPAN, ²National Institute of Advanced Industrial Science and Technology, JAPAN, ³Japan Society for the Promotion of Science, JAPAN, and ⁴Japan Science and Technology Agency (JST), JAPAN
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¹California Institute of Technology, USA and ²University of Southern California, USA
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POSTER/ORAL PRESENTATIONS

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¹National Taiwan University, TAIWAN and ²Tamkang University, TAIWAN
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¹University of California, Berkeley, USA and ²University of Michigan, USA
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¹University of Freiburg, GERMANY, ²University of Rostock, GERMANY,
³University of Konstanz, GERMANY, and ⁴Fraunhofer Institute, GERMANY
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¹University of Freiburg - IMTEK, GERMANY and
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