

Nanomechanics for NEMS : scientific and technological issues

an international state-of-the-art workshop by OMNT



26 & 27 June 2008, Grenoble-Minatec, France

The Observatory for Micro & NanoTechnologies proposes a workshop devoted to a worldwide state-of-the-art on NEMS and nanomechanics. International leading researchers are invited to display the current state of research on fundamental topics and associated technological developments, challenges to overcome, main teams involved, applications & market to be aimed. In 2 days, get a complete and synthetic view of the subject!

More details on the OMNT Web site: www.omnt.fr

Online registration: www.minatec-crossroads.com

Program elaborated in collaboration with Michael ROUKES, Jean-Louis LECLERCQ, Pascal VINCENT, Anthony AYARI, Stephen PURCELL, Joël CHEVRIER, Fabio PISTOLESI, Alain BOSSEBOEUF, Marcelo GOFFMAN, Eric COLINET, Laurent DURAFFOURG, Philippe ANDREUCCI, Eric OLLIER, Liviu NICU and Lionel BUCHAILLOT.

Day 1

9.45 Welcome
OMNT

9.50 General Introduction
M. Roukes, Caltech

Session 1 Quantum issues / chairman: to be confirmed

10.20 The Casimir effect and applications in nanophysics
A. Lambrecht, ENS LKB

11.00 Quantum limits (title to be confirmed)
K. Schwab, Cornell

11.40 Theoretical perspectives on quantum electromechanical systems
A. Clerk, McGill University

12.20 Debate on session 1

© 12.30 - Buffet

Session 2 Process-Integration / Chairman: L. Nicu, Laas

14.00 Towards NEMS IC: integrated actuation / transduction methods for NEMS
H. Tang, Yale

14.40 Integration of NEMS on CMOS: Fabrication approaches and mass sensing applications
F. Perez-Murano, IMB-CNM

15.20 Hybrid NEMS-CMOS: technological platforms, devices and applications
A. Ionescu, EPFL

© 16.00 - Pause

16.30 VLSI of NEMS (title to be confirmed)
T. Ernst, CEA/Leti

17.10 Alternative processes
to be confirmed

17.50 Debate on session 2
L. Nicu, Laas

© 18.00 - End

© 19.30 - Workshop dinner

Day 2

Session 3 Nanomechanics / chairman K. Schwab, Cornell

8.30 Micro- and nano-optomechanical systems: fundamentals, applications and challenges
M. Aspelmeyer, IQOQI

9.10 A new on chip nanomechanical testing method
T. Pardoen, Louvain

9.50 Nano-electromechanical systems for single electron transport
R. Blick, Madison

© 10.30 - Pause

11.00 Carbon Nanotubes for NEMS (title to be confirmed)
A. Zettl, Berkeley

11.40 Non-linear mechanics for NEMS (title to be confirmed)
A. Nayfeh, Virginia Tech

12.20 Debate on session 3
K. Schwab, Cornell

© 12.30 - Buffet

Session 4 Applications / chairman M. Roukes, Caltech

14.00 RF-NEMS
S. Bhave, Cornell

14.40 CNT NEMS: SWNTs as functional elements for sensors
C. Hierold, ETH Zurich

Biosensors special issue:

15.20 Nanomechanics in fluids (title to be confirmed)
J. Arlett, Caltech

© 16.00 - Pause

16.30 Surface chemistry and NEMS: questions and opportunities
M. Hines, Cornell

17.10 Heterogeneous systems: applications of bioMEMS
M. Hegner, Trinity College

17.50 Debate on session 4
M. Roukes, Caltech

© 18.10 - End

