



Success of the 34th Micro and Nano Engineering Conference MNE08

With great success and with the participation of distinguished scientists from academia, research institutes and industry, the 34th Micro and Nano Engineering MNE 2008 conference took place in Athens Hilton Hotel in Greece, 15-18th of September 2008. The conference was organized by the Institute of Microelectronics, NCSR Demokritos Greece. (conference website: www.mne08.org)

MNE is a prestigious, leading International Nanotechnology Conference in Europe focusing in the following areas:

- Micro and Nano Lithography
- Micro & Nano fabrication, Nano Engineering
- Micro and Nano electromechanical systems
- Micro & Nano Engineering for Life Sciences

In the Athens MNE08 conference, more than 550 papers were presented and 693 scientists participated. Also, 30 companies sponsored the conference and participated in the commercial exhibition. These figures were the highest in the history of MNE conferences. Furthermore, four pre-conference short courses by leading scientists were given, and two workshops on biosensors and lithography simulation respectively were organized after the conference.

In the conference, a lot of interesting results were presented and discussed. For example, in the MNE traditional field of microlithography and microelectronics, the future of integrated circuit manufacturing attracted a lot of attention and several presentations discussed the pros and cons of the alternative proposed lithographic techniques for the fabrication of nano-scale circuit features. It was predicted that without large scale modifications of the present manufacturing methods, the shrinking race of IC dimensions will continue to follow the Moore's law (doubling of transistor density per 18 months) at least during next 8-10 years. In market terms, this means that during this period the beneficial combination of dimension and cost reduction of IC will keep on being active. Beyond this period, new ideas have to be implemented for transistor manufacturing. Most of these, such as single electron transfer through nanodots or nanowires or single molecule memories, were refereed and discussed widely in the conference.

The hallmark of the present conference was the increasing interest for applications of micro and nanotechnology techniques to medical and biological issues. A lot of works focused on the transfer of methods commonly used in micro and nanotechnology towards their implementations: in new diagnostic tools for a variance of diseases, in the fabrication of new medical instruments or the improvement of existing ones, in nanostructuring the environment of tissues and cells so that biological problems can be investigated more effectively etc. Furthermore, several insightful

presentations were inspired by structures and mechanisms found in biological organisms, (field of biomimetics).

Finally, the presentations in the conference covered applications of micro and nanotechnology techniques for surface patterning on micro and nanoscale, for the design of photovoltaics with higher yield and lower cost, for the fabrication of microfluidic devices (lab-on-a-chip) with both chemical and biological applications as well as the fabrication and operation of chemical and biological sensors.

Three Best Poster Awards were given in three thematic areas of the conference:

THEMATIC AREA I : Micro and Nano Lithography

MNE 2008 BEST POSTER AWARD

was presented to

Poster MLL-P02: SLM Device for 193nm Lithographic applications

John Lauriaa, Ronald Albrighta, Olga Vladimirska, Luoqi Chena, Maarten Hoeksa, Roel Vanneera, Bert van Drieënhuizena, Luc Haspeslaghb, Ann Witvrouwb, Bart Schlatmannc
a ASML, P.O. Box 324 5500AH Veldhoven, The Netherlands
b IMEC, Kapeldreef 75, 3001 Leuven, Belgium
c Philips Applied Technologies, High Tech Campus, Netherlands

THEMATIC AREA II : Nanofabrication, Micro-Nano- Manufacturing, Pattern Transfer and Plasma Etching, Nanometrology,

Nanoelectronics - Photonics

MNE 2008 BEST POSTER AWARD

was presented to

Poster NED-P14: Direct self-assembly of organic semiconductors for the thin film transistors

Takeo Minaria, Masataka Kanob, Tetsuhiko Miyaderac, Sui-Dong Wangc, Kazuhito Tsukagoshic,d
a Advanced Science Institute, RIKEN, Wako, Saitama, Japan
b Dai Nippon Printing Co. Ltd., Kashiwa, Chiba 277-0871, Japan
c AIST, Nanotechnology Research Inst., Tsukuba, Ibaraki, Japan
d JST-CREST, Kawaguchi, Saitama 332-0012, Japan

THEMATIC AREA III: Bio-devices, lab-on-a-chip, Micro and Nano Systems

MNE 2008 BEST POSTER AWARD

was presented to

Poster MEMS1-P03: Silver-based SERS substrate fabrication using nanolithography and site selective electroless deposition

Maria Laura Coluccia^{a,b}, **Gobind Dasa**^{a,b}, Federico Mecarinia^b, Francesco Gentilea^b, Luisa Bavaa, Rossana Tallericoa, Patrizio Candeloroa, Carlo Liberalea^b, Francesco De Angelisa^b, Enzo Di Fabrizio^{a,b}
^aBIONEM Dipartimento di Medicina Sperimentale e Clinica,
Università "Magna Graecia" di Catanzaro, Italy
^bCalMED s.r.l., c/o Catanzaro C.da Mula Loc. Germaneto, Catanzaro, Italy

A micrograph contest was also included in the conference:

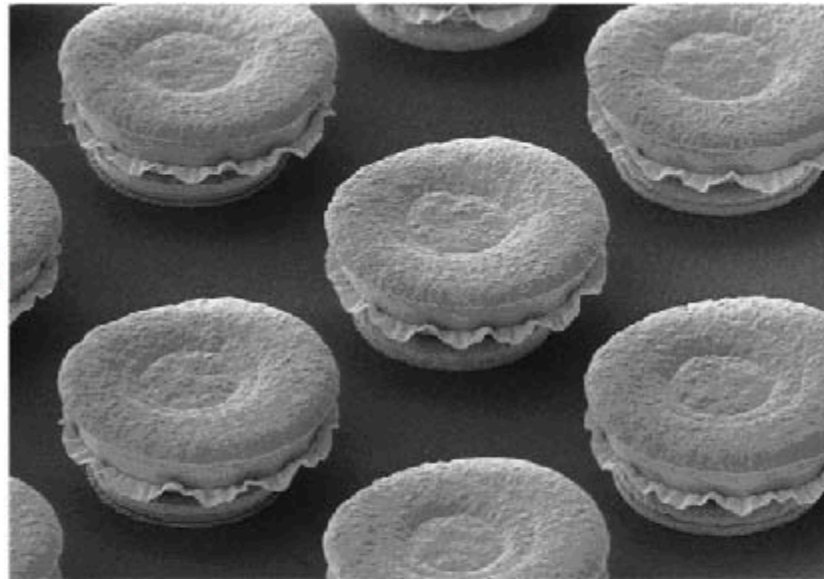
1st Micrograph PRIZE

micro & nano - graph Title:

Nano Burgers with lettuce

Description:

MEMS processing never stops giving surprises to designers. These vertical test structures, built with 3 metal layers, have turned into delicious hamburgers. The adhesion layer, rough surface and conformality issues are the instigators the first nano-hamburgers ever!!



Magnification: 3.19 k X

Submitted by: Jordi Llobet¹ and Laura Barrachina²

Instrument: CrossBeam 1560XB (CarlZeiss).

Affiliation: ¹CNM-IMB (CSIC) – Barcelona (Spain)

²Baolab – Barcelona (Spain)

2^o Micrograph PRIZE

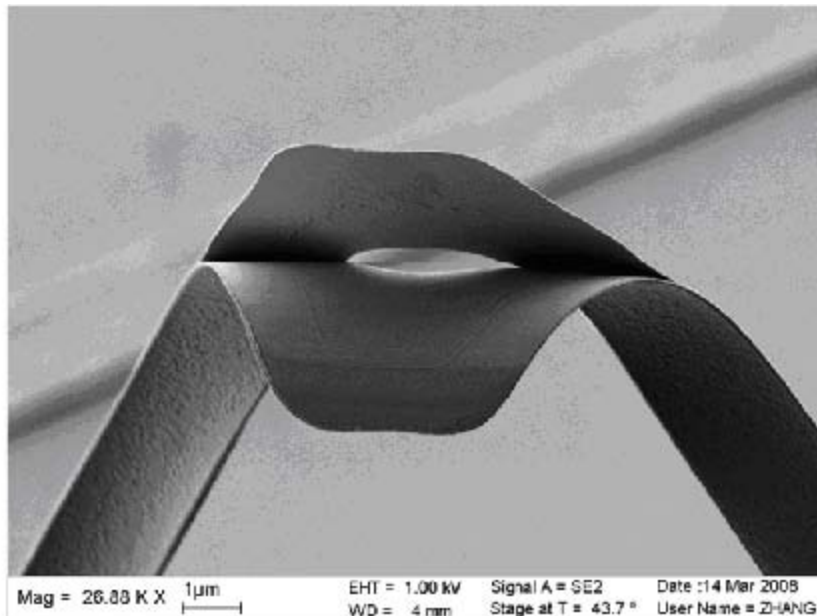
micro & nano - graph

Title:

Hot Lips

Description:

At the tip of the freestanding "V" shape ribbon, thin films were detached from each other due to high internal stress.



Magnification: 26.88 K X

Submitted by: Li Zhang

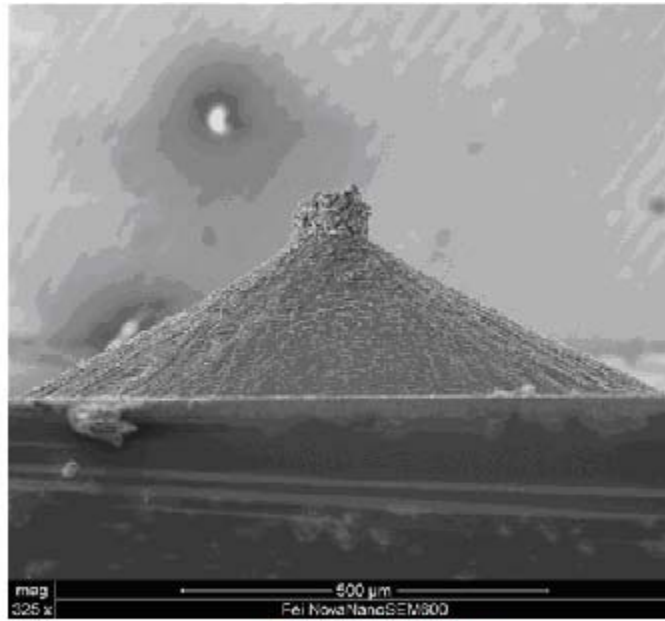
Instrument: Zeiss ULTRA 55

Affiliation: ETH Zurich, Switzerland

3rd Micrograph PRIZE

micro & nano -graph
Title: **Moon over Palamidi**

Description:
When intercalating lithium-ions into bulk silicon, the expansion of the host material is tremendous and induces the creation of features with various shapes: volcanoes, rifts ...



Magnification: Groot k X
Submitted by: Frans Holthuisen

Instrument: Fei Nova NanoSEM600
Affiliation: Philips Research Labs, Eindhoven, the Netherlands

Finally some conference pictures follow



exhibition



Plenary lecture Hall



Conference Awards



Conference Dinner

For more information contact the press relation responsible researchers

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Institute of Microelectronics – www.imel.demokritos.gr
National Center for Scientific Research “Demokritos” www.demokritos.gr
Or visit the Conference site: www.mne08.org

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for Scientific Research NCSR Demokritos**

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