



Design for Micro & Nano Manufacture (DfMM) News

web page: <http://www.patent-dfmm.org>

Coordinator: University of Lancaster (UK), Dr. A Richardson (A.Richardson@Lancaster.ac.uk)

The NoE Patent-DfMM aims to establish a collaborative team to provide European industry with support in the field of "design for micro nano manufacture" to ensure that problems affecting the manufacture and reliability of products based on micro nano technologies (MNT) can be addressed before prototype and pre-production.

EXUS MWG Reliability & Test, DfMM Tutorial Session and MEMUNITY workshop

NEXUS Annual General Meeting and FP7 Workshop

The "NEXUS Methodology Working Group (MWG) in Reliability and Test" was launched in December 2005 in close collaboration with the PATENT-DfMM project and MEMS Industry Group (MIG) in the US. A joint public workshop with MEMUNITY will take place at the Politecnico di Milano on 27 - 28 November 2006.

The NEXUS Association Annual General Meeting (AGM) and a NEXUS plus Workshop to prepare for the first Call of the 7th Framework Programme (FP7) of the European Commission will be held in conjunction on 29 November. Please find the **provisional agenda** for this 3-day event below:

27 November (afternoon): PATENT-DfMM and MEMUNITY Workshop, Tutorials and Equipment Demos

28 November: NEXUS Methodology Working Group Reliability and Test, in conjunction with Caneus and MEMUNITY

29 November: NEXUS Annual General Meeting (AGM), EC FP7 Workshop (organised by NEXUS Association)

Venue: The meetings will take place at the Politecnico di Milano (<http://www.polimi.it>).

Address Piazza Leonardo da Vinci 32, 20133 Milan, Italy

Local organiser: Prof. Alberto Corigliano, Phone: + 39 02 2399 4209 (Nearest Metro Station: Piola - Green line (2))

Please make your own hotel reservation!

If you have any questions concerning the meeting and registration, please contact: Lorna Quinn (Proj Manager of PATENT-DfMM); E-mail: L.Quinn@lancaster.ac.uk, Phone: +44 1524 593053

PATENT-DfMM contact: info@patent-dfmm.org

<http://www.patent-dfmm.org>

NEXUS Association contact: NEXUS Office (Neuchâtel)

E-mail: info@nexus-mems.com;

<http://www.nexus-mems.com>

Contact MEMUNITY:

Frank-Michael Werner, E-Mail: fmwerner@sussdd.de

and Jens Klattenhoff, E-Mail: j.klattenhoff@polytec.de

<http://www.memunity.com>.

PATENT-DfMM and NEXUS MWG Design Modelling Simulation Workshop, 25-26 Jan 2007, Berlin, Germany (this workshop was originally planned for Oct 2006)

The objective of this workshop is to identify needs of the MEMS industry (fabless design houses, manufacturers, etc.) in terms of design methodology and software tools. As an outcome, PATENT-DfMM aims at a first draft road map identifying key challenges as well as probable developments associated with future design methodologies and tools in the areas of DfT (Test), DfR (Reliability), DfY (Yield) and DfP (Packaging) strategies for MNT.

MEMS designers from industry and research labs, as well as MEMS software tool providers are welcome to participate. Active participants will receive a copy of the resulting "roadmap documentation". The workshop is jointly organised by the NEXUS MWG Design Modelling Simulation (DMS) and PATENT-DfMM. Contact: **Patric Salomon**, 4M2C, Germany. E-mail: patric.salomon@4m2c.com,

Call for Demonstrations: Univ. Booth at DATE'07, 16-20 Apr 2007, Nice, France. Submission Deadline: 19 Jan 07

As part of the DATE'2007 (Design, Automation and Test in Europe) Conference, a University Booth will be organised for EDA software and hardware demonstrations. It offers a unique chance to exhibit prototypes to both Academia and Industry and to demonstrate pre-commercial results obtained in government funded projects. Universities, research institutes and government funded project consortia interested in demonstrating their hardware and software demonstrations are invited to fill out and return the application form.

More information: www.date-conference.com

PATENT-DfMM role in the INTEGRAMplus EUROPRAC-TICE Project

Future integration platforms for MNT such as those targeted by INTEGRAMplus represent a step-change in complexity. The ability to consider manufacturability and reliability during the design process is hence critical. For this reason, INTEGRAMplus has built a formal link into the key EU expert cluster in DfM, to ensure access to resource expected to be required by customers of the service.

To ensure optimal access to DfM skills and resources, a budget of €100k is managed by INTEGRAMplus for the sole purpose of buying in services where necessary. The INTEGRAMplus Steering Committee will ratify any calls released. Where such a need for PATENT-DfMM type services are identified within INTEGRAMplus, an open ITT will be issued and copied to the PATENT-DfMM network with a view to receiving tenders that will be selected through a competitive process.

Contact: services@patent-dfmm.org, www.patent-dfmm.org

New Roadmap on Nanomanufacturing

The European Working Group Micro- and NanoManufacturing has published a Roadmap on "Nanomanufacturing". The Roadmap has been developed by the Working Group between March and July 2006.

The development of the roadmap has been supported by the EU-projects IPMMAN and MicroSapient. This roadmap highlights the development of the production technologies in the next years. End of June, first results of this roadmap had been given to the European Commission to provide inputs to the preparation of the 7th Framework Programme.

Contact: **Wolfgang Schaefer**, Fraunhofer IPA,

E-mail: wolfgang.schaefer@ipa.fraunhofer.de

www.micronanomanufacturing.eu/roadmap.php

NEXUS Market Report 2005-2009 now also available on CD ROM; Price reduction for NEXUS Roadmap Report

Over the next five years, the market of MEMS/MST is predicted to grow at a rate of 16% per year from \$12 billion in 2004 to \$25 billion in 2009 across a spectrum of 26 MEMS/MST products. The latest NEXUS Market Report had been published in January 2006 in print format, and is now available on CD ROM as well. Print or CD ROM version: €1100, bundle of both: €1300. The NEXUS Roadmap report (published end 2003) is now available at €200, or if bought as an add-on to the market report for €100.

More information: **Patric Salomon**,

E-Mail: patric.salomon@4m2c.com, www.enablingmnt.com

NEXUS Market Report 2005-2009 now also available on CD ROM; Price reduction for NEXUS Roadmap Report

STMicroelectronics has published a new issue of the ST Journal of Research focusing on MEMS. The latest issue features articles from PATENT-DfMM partners:

More than Moore: micro-machined products enable new applications and open new markets by B. Vigna (STMicroelectronics)

Out of plane vs. in plane flexural behaviour of thin polysilicon films: mechanical characterization and application of the Weibull approach by F. Cacchione, A. Corigliano - Politecnico di Milano, B. De Masi, C. Riva - STMicroelectronics. A capacitance and optical method for the static and dynamic characterization of MEMS devices by Eleonora Ferraris, Irene Fassi, Institute of Industrial Technology and Automation, Biagio De Masi, STMicroelectronics, Richard Rosing, Andrew Richardson, Lancaster University

www.st.com/stonline/press/magazine/stjournal/vol0301/index.htm

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