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Dear Reader,



The Network of Excellence (NoE) Patent-DfMM aims to establish a collaborative team to provide European industry with support in the field of "Design for Micro & Nano Manufacture (DfMM)" to ensure that problems affecting the manufacturing and reliability of products based on micro & nano technologies (MNT) can be addressed before prototyping and production. For more information: <http://www.patent-dfmm.org/>

Welcome to the new edition of our bi-monthly E-Newsletter, which will keep you updated on project related activities, but also on other DfMM activities that run outside of the project.

We apologise in case you have been added to our database in error: if so, please reply by e-mail with "UNSUBSCRIBE" in the subject field.

We welcome your comments and contributions.

Happy reading!

Patric Salomon
NoE Patent-DfMM News Editor

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DfMM Workshop planned, 2-4 Oct 07, Lancaster, UK

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Abstract Deadlines for Conferences

PATENT-DfMM is a Media Sponsor of COMS, 2-6 Sept 2007, Melbourne, Australia
Call for papers, Submission deadline: 18 May 2007

News from the NoE Patent-DfMM

Presentations available from PATENT-DfMM/ NEXUS Workshop on Design for Reliability and Manufacturability in MNT, 24 Apr 07, Stresa, Italy

This event was co-organised by PATENT-DfMM and the NEXUS Methodology Working Groups "Reliability & Test" and "Design Modelling Simulation" and held in conjunction with the DTIP Design Test Integration and Packaging Conference, 25-27 Apr 2007.

More than 30 participants discussed reliability and test problems and design methodologies that might lead to significant improvements. The following key topics were addressed:

- Reliable Design using Multi-Level Process Verification
- Design for Yield Methodologies
- Reliability & Test issues in Silicon / Polymer Microsystems "INTEGRAMplus"
- Embedded Test Centre (PATENT-DfMM)
- EURIMEL Reliability Services (PATENT-DfMM)
- Micromachine Centre Activities – Japan
- Failure & Dissipative mechanisms
- EC FP7 & opportunities and where can NEXUS and PATENT-DfMM help

PATENT-DfMM and NEXUS were also co-organising a special session within DTIP on "Opportunities for Cooperative R&D" (25 Apr) and a panel discussion on "Design for Reliability and Test of Microsystems" (26 Apr). The panel featured key industry speakers: Chris Reeves: Microsystems Business Stream Manager, QinetiQ, UK, Alistair Sutherland: Technical Director, BCF Designs, UK, Ludo Stulens: Senior Consultant, Philips Applied Technologies, The Netherlands and Andrew Richardson: Director - Centre for Microsystems Engineering, Lancaster University, UK. The session was moderated by Patric Salomon: Managing Director - 4M2C PATRIC SALOMON GmbH, Germany and Vice Chairman of NEXUS Microsystems Association.

Copies of workshop and panel presentations are now available at www.patent-dfmm.org. Also an annual summary report of achievements 2006 of the PATENT-DfMM projects is available from the website.

Contact: Patric Salomon, 4M2C/enablingMNT, Germany, E-Mail: patric.salomon@4m2c.com

PATENT-DfMM had a Successful Third Year EC Review Meeting

As of January 2007, over 70 activities have been launched under the project framework to improve integration, generate new collaborative intellectual property through joint research, secure commercialisation routes for key services and establish the team as a key international cluster. Activities in the first 12 months mainly targeted improved integration within the 4 Virtual Laboratories, the second 12 months has seen more cross laboratory activities and within the third period major achievements have been the launch of three flagship projects, and approval for the creation of clusters of R&D providers (industry and academia) with valuable synergies willing to deliver these capabilities through commercial services. The first industrial contract to these "Service Clusters" has been awarded to the μ HUMS activity.

The concept of Service Clusters to achieve self sustainability has been explored, developed and approved by all partners. Final ratification of the service cluster concept was confirmed at the annual

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assembly meeting Jan 2007 Berlin. For more details please download the annual summary report of achievements 2006 from the PATENT website.

Contact: Andrew Richardson, Lancaster University, UK, E-Mail: a.richardson@lancaster.ac.uk

PATENT-DfMM involved in First MINOS - NEXUSplus - Event 22 - 23 Mar 07, Bucharest

This successful event took place in the same week as a collaboration agreement between NEXUS and MINOS was signed. The first day, organised by MINOS / IMT Bucharest, was devoted to the NMP programme and attracted 250 participants. The second day (ICT focussed) was co-organised by NEXUS and MINOS and featured key speakers from the European Commission, Dirk Beernaert and Francisco Ibanez. Presentations from ongoing FP6 ICT projects together with an update on NEXUS and on opportunities through Europractice attracted more than 100 participants. Presentations were followed by a brokerage forum and poster session to allow interested parties to discuss specific interests to work together in forming potential new proposals for upcoming EC calls. PATENT-DfMM presented two topics for the preparation of new proposals: Reliability by Marius Bazu and DfMM Services by Patric Salomon.

More information and access to the brokerage databases is available from the MINOS website:

www.minos-euro.net

Contact: Patric Salomon, 4M2C/enablingMNT, Germany, E-Mail: patric.salomon@4m2c.com

News from the DfMM community

CEMMNT – Partnerships and Collaborative Projects

The Centre of Excellence in Metrology for Micro and Nano Technologies (CEMMNT) provides open access measurement and characterisation services and solutions to organisations commercialising new products and processes based on micro and nano technologies (MNT). Uniquely, CEMMNT unites five global MNT leaders that are ideally positioned to supply industry: BAE Systems, Coventor, QinetiQ, the National Physical Laboratory and Taylor Hobson. Each partner offers complementary expertise that can benefit products at different stages of their lifecycle. By bringing together this wide range of capabilities and knowledge, the partners are able to deliver customised solutions across all industrial sectors.

The CEMMNT Hub is keen to engage with UK and European organisations wishing to bid for proposals and programmes of research.

Contact: Drew Murray, CEMMNT Hub Ltd, UK, E-mail: drew.murray@cemmnt.co.uk,

www.cemmnt.co.uk

Sensors Journal: special issue entitled "Modeling, Testing and Reliability Issues in MEMS Engineering"

Guest Editor Dr. Stefano Mariani from PATENT partner POLIMI

The aim of this special issue is to collect high quality research results on all DfMM-related aspects of MEMS engineering.

Because it has been a free online journal (an Open Access journal), papers rapidly published in Sensors (ISSN 1424-8220) will receive very high publicity. Papers published in Sensors are rapidly indexed by databases including Chemical Abstracts and Science Citation Index expanded (Web of Science). You may send your manuscript soon or by 30 November 2007. Papers accepted will be published immediately. Finally, all the papers belonging to this special issue will be gathered together in a homepage. Please send your paper by e-mail to sensors@mdpi.org and send copies to stefano.mariani@polimi.it. The subject title of the message should be "Manuscript for Special Issue "MODELING, TESTING AND RELIABILITY ISSUES IN MEMS ENGINEERING" for the journal SENSORS". More information: www.mdpi.org/sensors

Contact: Dr. Stefano Mariani, Politecnico di Milano, Italy, E-mail: stefano.mariani@polimi.it

MSc in Micro and Nanotechnology – Engineering, Management & Society from Lancaster University

Micro and Nanotechnology (MNT) could well be the next industrial revolution with radical changes in the way we setup, run and market our businesses. Novel and knowledge-based manufacturing has the potential to complement, if not replace, conventional manufacturing industries with their highly material-intensive processes. Development of a knowledge-based industry requires a highly educated workforce with key competences in the technical, management and societal dimensions of Micro and

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Nanotechnologies. Although the spending on MNT will double in the next 2-3 years, there is still a profound skill shortage in the area.

The Lancaster Micro and Nanotechnology Masters course is a unique and timely opportunity for an engineering or sciences graduate to enter an interdisciplinary research or commercial R&D career in MNT. A good balance between technical, management and social science content makes this course directly applicable to entrepreneurs in existing, as well as new businesses in the MNT area. Existing technical personnel would find novel MNT technology topics essential for their professional development, especially since this course is organised in a modular structure that allows part time intensive learning. The course consists of 6 taught modules and a long project which will involve working in an academic or industrial environment in the area of MNT:

- Micro and Nanotechnology
- Nanoscience and Nanomaterials
- Design for Manufacture and Reliability Testing
- The High Technology Entrepreneurial Venture
- Management of the Technology Based Enterprise
- The Ethical and Societal Dynamics of Nanotechnology

More information: <http://www.engineering.lancs.ac.uk/postgraduate/nano>

Contact: Dr Denis K. Koltsov, Lancaster University, UK, E-mail: d.koltsov@lancaster.ac.uk

Call for Designs for AMICOM RF-MEMS Packaging using the VTT RF-MEMS Packaging Technology Platform, Deadline for registrations: 11 May 07

The AMICOM NoE hereby launches its first call for designs for RF-MEMS Packaging carried out by the above Technology Platform. The purpose of the platform is in the first place to handle projects submitted by AMICOM partners. It is suggested, however, that the platform will be open to paying customers from outside the network if an interest arises and enough substrate space is available. Interested organisations shall register before the deadline: 11 May 2007.

To register for the service the interested partners must declare their intention to submit a layout and give an estimation of the required area, in order to allow VTT harmonize the needs between the partners. Detailed design rules are delivered to registered partners. The deadline for the design submission is: 8 June 2007

Contact: Mr Markku Lahti, VTT Micromodules, Finland, E-Mail: Markku.Lahti@vtt.fi

Interconnection Roadmap

After 3 years of collective effort, ELFNET experts have launched a Roadmap - 'The Future of European Electronics Interconnection'. This Roadmap integrates accumulated ELFNET knowledge with data from existing industry roadmaps to describe how key factors such as lead-free soldering, sustainability and miniaturisation are impacting on interconnection supply chain, materials and processes. The European Electronics Interconnection Roadmap, a 79 page PDF format document is now available directly from the ELNET website - www.europeanleadfree.net or via the following link - <http://digbig.com/4rweh>

SUSS MicroTec unveils New Metrology Equipment for MEMS Production

With the DSM200 SUSS MicroTec has developed a new automated metrology system for all emerging front to backside alignment applications. The cassette-cassette front-to-back alignment metrology system is the ideal tool for verifying alignment accuracy on wafers from 2 inch to 200mm.

Incorporating state-of-the-art pattern recognition technology, the DSM200 offers the highest measurement accuracy of 0.2 microns at 3 sigma on a fully automated platform with minimized operator intervention. Based on the latest production platform of the SUSS MA200Compact Mask Aligner, the DSM200 provides reliable and accurate metrology for double-sided alignment and exposure applications frequently used in the manufacturing of MEMS devices, power semiconductors and optoelectronics.

http://www.suss.com/about_suss/latest_news/2007/02-05-2007

Contact: Brigitte Wehrmann, SUSS MicroTec, Germany, E-mail: brigitte.wehrmann@suss.com

Event Announcements

Webinar: Fast Yield Ramp-up for MEMS Foundries, 9 May 07 evening (2:00pm US EDT)

In this webinar, the problem of low yield in MEMS manufacture, current best practices for yield enhancement, and possible methodologies for yield enhancement will be discussed. Such yield enhancement methodologies could result in higher foundry yields in a short amount of time, which will quickly recoup investment dollars for both fab and fabless MEMS companies. Invited speakers are from Exponent Inc and Silex Microsystems. There is no charge to attend this webinar.

More information and registration: www.memsindustrygroup.org/webinar

MINOS-EURONET Scientific and Brokerage Event: Workshop on Microsystems as a platform for integrating micro/nano/biotechnologies & Info- and brokerage event on Micro- and nanosystems call in FP7/2007, 23-25 May 07, Bucharest, Romania

The event is basically devoted to the "micro- and nanosystems" call in FP7 (to be launched in May). The topics are already known and they will become official before the meeting, therefore an early brokerage event can be extremely useful for nucleating consortia which will prepare proposals. The head of unit "Micro- and nanosystems" accepted the invitation to participate to the meeting. The registration is free or charge, moreover the printing and hanging of posters (using a certain template) can be done by the organizers (free of charge for participants from new EU member states). The brokerage is preceded by scientific presentations delivered by researchers carrying on existing projects in the same field.

The organizers are inviting the potential coordinators of future proposals to use the above opportunity for a face-to-face meeting. They can deliver oral and poster presentations and they can also organize also closed meetings, with selected participants.

Registration and more information: www.minos-euro.net

FP7-ICT Information Day on Call for Proposals 2 -Objective 3.6 MICRO/NANO SYSTEMS-, 29 May 07, Brussels, Belgium

The objectives include the following areas: next-generation smart systems, micro/nano/biotechnologies' convergence, integration of smart materials, from smart systems to viable products, smart systems for communications and data management, and support actions. A number of officials from the European Commission will present the themes and key information on FP7 proposal submission. The information day will provide possibility for, ideas/proposals announcement, interaction on the spot and partnerships.

To participate please register by May 08th at http://cordis.europa.eu/fp7/ict/programme/events3-20070529_en.html.

Mini-symposium on "Computational methods for Micro and Nano Systems" at the 9th U.S. National Congress on Computational Mechanics, 22-26 Jul 07, San Francisco, CA, USA

The purpose of this mini-symposium is to focus on the most recent developments in the fields of numerical methods for the simulation of the mechanical responses of MEMS and NEMS. Particular attention will be devoted to procedures able to merge experiments and simulations and to help in assessing the reliability of micro and nano systems. Issues like micro fluidics, damping, topology optimization, nanoscale simulations, fracture, poly-crystal simulations will all be of interest in the symposium. More information about the congress:

<http://www.me.berkeley.edu/compmat/USACM/main.html>

Contact: Alberto Corigliano, Politecnico di Milano, Italy, E-mail: alberto.corigliano@polimi.it

DfMM Workshop planned, 2-4 Oct 07, Lancaster, UK

The PATENT-DfMM project is currently preparing a 3 day DfMM Workshop to be held in Lancaster. This workshop will feature a mix of tutorials, scientific session and an industry focussed workshop with presentations from PATENT, other related research projects and from industry. Please save the date! Further details will be published on the PATENT-DfMM Website in due course.

Contact: Lorna Quinn, Lancaster University, UK, E-Mail: l.quinn@lancaster.ac.uk

Other Events

13 - 16 May 2007

ASSEMIC Annual Meeting, Info Day and Open Academic Seminar
Sinaia, Romania
www.assemic.net

15 - 16 May 2007

METRIC 2007
Pittsburgh, PA, USA
www.memsindustrygroup.org/METRIC2007

20 - 24 May 2007

ETS'07 12th IEEE European Test Symposium
Freiburg, Germany
<http://ets07.informatik.uni-freiburg.de/>

20 - 24 May 2007

EUSPEN 2007, Conference and Annual General Meeting
Bremen, Germany
www.bremen2007.euspen.eu

22 - 24 May 2007

MEDEA+ Design Automation Conference "Nano-Electronics towards System Integration: The EDA Challenge"
Grenoble, France
www.medeaplus.org/web/events/events_upcoming

23 - 25 May 2007

MINOS-EURONET Scientific and Brokerage Event: Scientific workshop: "Microsystems as a platform for integrating icro/nano/biotechnologies", Info- and brokerage event: Micro- and nanosystems call in FP7/2007
Bucharest, Romania
www.minos-euro.net

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FP7- ICT- Information Day on call 2-Objective 3.6 Micro/Nano Systems
Brussels, Belgium
http://cordis.europa.eu/fp7/ict/programme/events3-20070529_en.html

30 May - 1 June 2007

STIMESI Training Course "IMEC: RF-SiP design and RF system integration"
Leuven, Belgium
<http://www.stimesi.org/pdf/IMEC-SIP-2007-1.pdf>

10 - 14 June 2007

Transducers '07 & Eurosensors XXI
Lyon, France
www.transducers07.org

14 June 2007

EDA Tech Forum
Munich, Germany
www.edatechforum.com/events/munich

17 - 20 June 2007

IMAPS Europe/ EMPC2007 - European Microelectronics and Packaging Conference & Exhibition

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Oulu, Finland
www.empc2007.org

18 - 20 June 2007
IMSTW 2007: International Mixed-Signals Testing Workshop
Póvoa de Varzim, Portugal
www.fe.up.pt/imstw07

21 June 2007
MINAM Technology Platform Workshop at the EuroNanoForum 2007
Düsseldorf, Germany
www.euronanoforum2007.de/content/view/12/26

26 - 29 June 2007
MEMSWAVE 2007
Barcelona, Spain
<http://congress.cimne.upc.es/memswave07>

2 - 6 July 2007
AMICOM Summer School
Toulouse, France
www.amicom.info

30 July - 10 August 2007
4M Summer School
Lyngby, Denmark
www.4m-net.org

Abstract deadlines for conferences

PATENT-DfMM is a Media Sponsor of COMS, 2-6 Sept 2007, Melbourne, Australia
Call for papers, Submission deadline: 18 May 2007

The 12th International Commercialization of Micro and Nano Systems Conference (COMS2007) to be held in Melbourne, Australia, 2-6 September 2007 is calling for Papers and has extended the deadline until Friday 18 May 2007.

This is your opportunity to share your experience and expertise. Potential technical and commercial speakers may submit up to a 500 word abstract for consideration by the program committee.

Technology users (Receptors) may also submit an abstract on their use of the technology, the path to commercialisation and adoption.

For full details and abstract submission, see www.mancef-coms2007.org

MNE 2007 Conference on Micro- and Nano-Engineering
23 - 26 September 2007
Copenhagen, Denmark
Abstract Deadline: 8 Jun 07
www.mne07.org

CAS2007 International Semiconductor Conference
15 - 17 October 2007
Sinaia, Romania
Abstract Deadline: 10 Jun 07
www.imt.ro/cas

International Conference "Micro&Nano2007" on Micro- Nanoelectronics, Nanotechnology and MEMS
18 - 21 November 2007
Athens, Greece

7 May 2007

Abstract Deadline: 10 Jun 07

www.micro-nano.gr/conf2007

COMSOL Conference 2007

23 - 24 October 2007

Grenoble, France

Abstract Deadline: 29 Jun 07

www.femlab.de/conference2007/europe/welcome

MEMS, MOEMS, and Micromachining Conference at Photonics Europe 2008

7 - 11 April 2008

Strasbourg, France

Abstract Deadline: 19 Sep 07

<http://spie.org/app/conferences/index.cfm>

Next issue planned : **4 July 2007** (deadline for contributions: **1 July 07**)

Please feel free to send us any DfMM-related news that might be of interest for our readership.

This e-mail newsletter contains public information, only. Please feel free to distribute it to anyone who might be interested in the topics.

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