

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.

NoE Patent-DfMM Co-ordinator:

Andrew Richardson, University of Lancaster, UK
E-mail: A.Richardson@Lancaster.ac.uk

NoE Patent-DfMM News Editor:

Patric Salomon, 4M2C PATRIC SALOMON GmbH
E-mail: DfMM-news@4m2c.com

www.patent-dfmm.org

We welcome your comments and contributions.

Happy reading!

Patric Salomon
NoE Patent-DfMM News Editor

In this edition:

[News from the NoE Patent-DfMM](#)

[PATENT-DfMM Reliability Cluster engages with the Caneus Aerospace Community](#)
[PATENT-DfMM invited to be a Partner in the EUROPRACTICE Family](#)
[PATENT-DfMM and NEXUS at METRIC, Pittsburgh, USA, 11-13 Sept 2006](#)
[Major Boost to Service Cluster Development in Embedded Test and HUMS technology](#)

[Event Announcements](#)

[PATENT/AMICOM Joint Workshop on MEMS Reliability at ESREF Conference, 2 Oct 06, Wuppertal, Germany](#)
[PATENT-DfMM and NEXUS MWG Design Modelling Simulation Workshop, 30-31 Oct 06, Bremen, Germany](#)
[Course on "MEMS Design and INTEGRAM Prototyping Services", 6-9 Nov 06, Malvern, UK](#)
[NEXUS MWG Reliability and Test Workshop, organised by PATENT-DfMM and MEMUNITY, 27-28 Nov 2006, Milan, Italy](#)

List of Events

Abstract Deadlines for Conferences

Other News

EDAA Lifetime Achievement Award 2007 - Call for Nominations, Deadline: 3 October 2006

SPIE - Call for Papers on "Design for Manufacturability", Manuscripts are due 1 November 2006

NEXUS Market Report 2005-2009 now also available on CD ROM

News from the NoE Patent-DfMM

PATENT-DfMM Reliability Cluster engages with the Canesus Aerospace Community

PATENT-DfMM played an active role in assisting with the development of a future collaborative project concept aiming to provide reliability services to the European aerospace community. Members of PATENT-DfMM worked closely with representatives from CNES, EADS, ESA, NovaMEMS, Alcatel Alenia Space, Colibrys and Tronics to propose a route to funding and delivery of methods to better assess reliability issues and build higher reliability into MEMS based systems.

Recommendations were to build on the reliability community and knowledge base created by PATENT-DfMM and related activities such as EURELNET and bring together key PATENT-DfMM partners with groups addressing aerospace reliability issues associated with MNT technology.

Contact: Andrew Richardson, E-mail: A.Richardson@Lancaster.ac.uk

PATENT-DfMM invited to be a Partner in the EURO PRACTICE Family

PATENT-DfMM is proud to announce that it has been invited to join the "Family of Europractice Service Providers". The new Europractice concept is not only co-ordinating between service provider projects funded under the Europractice call, but instead inviting other service type projects to the Europractice family. PATENT-DfMM, as it is currently building its portfolio of services to industry, has been invited to participate actively. This will lead to an extended service offer of Europractice on the one hand and help the mainly academic partners of PATENT-DfMM on the other to develop their business model and learn from other service providers who have been in business for a number of years already.

Contact: Patric Salomon, E-mail: patric.salomon@4m2c.com

PATENT-DfMM and NEXUS at METRIC, Pittsburgh, USA, 11-13 Sept 2006

The MEMS Industry Group held their 6th annual METRIC conference last week in Pittsburgh, PA, USA. Over sixty members of MIG came together over two days to discuss the METRIC topic: Focus on MEMS Integration. NEXUS and the PATENT-DfMM project were represented by Prof Andrew Richardson (PATENT-DfMM co-coordinator and NEXUS SC member) and Patric Salomon (NEXUS Vice-Chair and PATENT-DfMM partner) with Andrew Richardson co-chairing the working group on "Strategies for Integrating MEMS into Systems". Six working groups covered such topics as IC Component Level Integration, Wafer Level Encapsulation, Packaging Integration, Integration of RF Devices, and MEMS Business Decisions. The working groups then delivered a series of technical and business-related recommendations to the industry for ways to address MEMS integration issues: These included such things as more case studies about successful integration practices, better partnerships between semiconductor and MEMS organizations, databases for materials properties, and additional industry-wide working conferences dedicated to both the business and technical side of MEMS integration. The MEMS Industry Group will now distill these recommendations and choose several to address over the next nine months – at the same time NEXUS and PATENT-DfMM will evaluate where they could collaborate.

More information: www.memindustrygroup.org

Contact: Patric Salomon, E-Mail: patric.salomon@4m2c.com

Major Boost to Service Cluster Development in Embedded Test and HUMS technology

Work funded under PATENT-DfMM that has built the foundations for two service clusters has won support of €340K from the UK Innovative Electronics Manufacturing Centre (IeMRC) to further research embedded test and health monitoring strategies for System-in-Package technologies. The project will be led by Lancaster and Heriot Watt Universities in the UK and carried out in collaboration with NXP, Caen; MicroCircuit Engineering, Newmarket; Coventor sarl, Paris and QinetiQ, Malvern. The project which is part funded by PATENT-DfMM will focus on building the foundations for a "health monitoring" capability into both stacked and single layer SiP systems that can be used to sense thermomechanical, electromagnetic and chemical stress together with electrical failure and degradation.

Contact: Andrew Richardson, E-mail: A.Richardson@Lancaster.ac.uk

Event Announcements

PATENT/AMICOM Joint Workshop on MEMS Reliability at ESREF Conference, 2 Oct 06, Wuppertal, Germany

This event will enable the members from two European Networks of Excellence, PATENT and AMICOM, and participants of the ESREF Conference to share know-how on MEMS Reliability issues. The workshop studies all aspects of MEMS Reliability. Topics include but are not limited to: characterization methods, failure mechanisms, failure analysis, testing techniques and test structures, reliability techniques and methodology, design rules.

Contact: Ingrid De Wolf, IMEC, Belgium, E-mail: ingrid.dewolf@imec.be

PATENT-DfMM and NEXUS MWG Design Modelling Simulation Workshop, 30-31 Oct 06, Bremen, Germany

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

Course on "MEMS Design and INTEGRAM Prototyping Services", 6-9 Nov 06, Malvern, UK

This 4-day course, given by academic experts, industrial designers and software developers, will provide an overview of microsystems technology (MST) processing technologies and how to approach the design of MST devices. Underpinning concepts of micro-mechanics, using worked examples of accelerometer and gyroscope, electronic transduction techniques and the principles of Finite Element Analysis will be reviewed. This will be followed by tutorials on the INTEGRAM processes and design rules and introduce various design tools for analytical design (MathCAD), layout (L-Edit) and simulation (CoventorWare circuit-level and finite element tools). Participants will have the opportunity to continue to develop their skills through post-course homework design exercises and tutorials. The course is primarily aimed at postgraduate students and researchers from academia interested in developing MEMS design skills and accessing MPW fabrication services who are invited to participate free of charge. In addition, engineers and researchers from industry are invited to participate for a small fee.

The training course will be followed on 10 November by an INTEGRAMplus Workshop. More information: www.integramplus.com

Contact: Christoph Pickering, QinetiQ, Malvern, UK, E-mail: CPICKERING@qinetiq.com

NEXUS MWG Reliability and Test Workshop, organised by PATENT-DfMM and MEMUNITY, 27-28 Nov 2006, Milan, Italy

This "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 (more information – see also DfMM News in this MST News) is planned with the following topics:

27 Nov afternoon:

Tutorials in MNT Reliability and Test (PATENT-DfMM)

MEMUNITY MEMS Test Workshop

28 Nov all day:

NEXUS MWG Reliability and Test Workshop:

Featured topics: reliability roadmap, failure mechanisms, modeling and fault simulation of integrated MEMS and accelerated testing and reliability indicators, industry needs in reliability and test, services in reliability and test and new collaborative activities associated with infrastructure and European technology platforms.

29 Nov all day:

NEXUS annual general meeting (AGM) and EC FP7 Workshop

Contact PATENT-DfMM: Andrew Richardson, A.Richardson@Lancaster.ac.uk and Pascal Nouet, nouet@lirimm.fr

Contact MEMUNITY: Frank-Michael Werner, fmwerner@sussdd.de, and Jens Klattenhoff, j.klattenhoff@polytec.de, www.memunity.com

Contact NEXUS AGM: NEXUS Office, Neuchatel, info@nexus-mems.com, www.nexus-mems.com

List of Events

24 - 27 September 2006

IMAPS Poland 2006 Conference & Exhibition

Krakow, Poland

<http://wiki.imaps.org.pl/bin/view/IMAPS2006>

27 - 29 September 2006

CAS 2006 International Semiconductor Conference

Sinaia, Romania

www.imt.ro/cas

27 - 29 September 2006

THERMINIC 2006 - International Workshop on Thermal Investigations of ICs and Systems

Nice, Cote d'Azur, France

<http://tima.imag.fr/conferences/therminic/>

2 October 2006

PATENT/AMICOM Joint Workshop on MEMS Reliability at ESREF Conference

Wuppertal, Germany

www.patent-dfmm.org

4 October 2006

MASMICRO Demonstration Day

Stuttgart, Germany

www.masmicro.net

8 - 12 October 2006

IMAPS 2006 International Symposium on Microelectronics

San Diego, CA, USA

www.imaps.org/imaps2006

30 - 31 October 2006

COMSOL Multiphysics Conference 2006

Frankfurt/Main, Germany

www.comsol.de/conference2006

5 - 7 November 2006

MEMS Executive Congress 2006

Scottsdale, AZ, USA

www.memsindustrygroup.org

5 - 10 November 2006

ASME 2006 MEMS/NEMS Packaging Symposium

Chicago, IL, USA

www.asmeconferences.org/congress06

14 - 17 November 2006

Electronica 2006

Munich, Germany

www.electronica.de

27 - 28 November 2006

PATENT-DfMM and NEXUS MWG Reliability and Test Workshop

Milan, Italy

www.patent-dfmm.org

Abstract deadlines for conferences

SMT/HYBRID/PACKAGING 2007

24 - 26 April 2007

Nuernberg, Germany

Abstract Deadline: 13 Oct 06

www.smt-exhibition.com

DTIP 2007 - SYMPOSIUM on Design, Test, Integration and Packaging of MEMS/MOEMS

25 - 27 April 2007

Stresa, Lago Maggiore, Italy

Abstract Deadline: 10 Nov 06

<http://tima.imag.fr/conferences/dtip/>

Transducers '07 & Eurosensors XXI

10 - 14 June 2007

Lyon, France

Abstract Deadline: 1 Dec 06

www.transducers07.org

Other News

EDAA Lifetime Achievement Award 2007 - Call for Nominations, Deadline: 3 October 2006

In 2007, the European Design and Automation Association (EDAA) will grant the fifth EDAA Lifetime Achievement Award. The lifetime achievement award shall be given to individuals who made outstanding contributions to the state of the art in electronic design, electronic design automation and testing of electronic systems in their life. In order to be eligible, candidates must have made innovative contributions which had an impact on the way electronic systems are being designed. The goal of granting the award is to make the excellent work done by people working within the scope described above more widely known and to help to publicize the results. The award will be handed over during the DATE opening ceremony on April 17, 2007, in Nice, France.

Contact: Bernard COURTOIS, Chair, EDAA, E-mail: Bernard.Courtois@imag.fr, www.edaa.com

SPIE - Call for Papers on "Design for Manufacturability", Manuscripts are due 1 November 2006

The July-September 2007 SPIE Journal of Microlithography, Microfabrication, and Microsystems (JM3) is publishing a special section on "Resolution Enhancement Techniques and Design for Manufacturability".

More information and submission guidelines:

<http://spie.org/app/Publications/index.cfm?fuseaction=guidelines&type=jm3>

NEXUS Market Report 2005-2009 now also available on CD ROM

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

Next issue planned : **6 November 2006** (deadline for contributions: **1 November 06**)

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.

Edited by: Conny Reichl & Patric Salomon, 4M2C PATRIC SALOMON GmbH, Germany
E-Mail: dfmm-news@4m2c.com, Phone: +49 30 2435 7870, Fax: +49 721 1515 82528

Published on behalf of the project "Design for Micro & Nano Manufacture (Patent-DfMM)", a Network of Excellence funded by the European Commission DG INFSO E5 within the Information Society Technologies (IST) Programme of FP6.

www.patent-dfmm.org

This e-mail newsletter is distributed to registered subscribers, project partners, and partner programmes free of charge. If you have been added to our database in error, please reply by e-mail with "UNSUBSCRIBE" in the subject field.
