

10<sup>th</sup> International Conference on:

# 4M2013

## Multi-Material Micro Manufacture

**Conference Chair:** Sabino Azcarate, TEKNIKER, Spain

**Conference Co-Chair:** Stefan Dimov, Birmingham University, UK



**8<sup>th</sup>-10<sup>th</sup> October 2013**

**San Sebastian**

Organised by TEKNIKER and the 4M Association

IK4  TEKNIKER  
Research Alliance



<http://www.4m-association.org/conference/2013>

**Invited Sessions:**



## Scope

In today's market, miniaturised and microsystems-based products represent key value-adding elements for many industrial sectors and thus are an important contributor to a sustainable economy. Following the silicon-based microelectronics revolution of the late twentieth century, a number of micro and nano manufacturing techniques have been developed and implemented into process chains for the fabrication of Micro Electro Mechanical Systems (MEMS). Especially, these technology developments have targeted niche markets and as a consequence, a number of MEMS devices are now being effectively exploited commercially. To address the continuing trend for product miniaturisation and the constantly growing demand for novel products enabled by Micro and Nano Technologies (MNTs) the 4M Conference series has, since 2005, been bringing together researchers and industrialists engaged in multi-disciplinary research and development of micro and nano manufacturing platforms and their various existing and emerging application areas.



**4M2013** will once again create a forum for the presentation of, and discussions about, the latest advances in manufacturing capabilities to meet the demands for:

- **Product miniaturisation** through innovative integration and development of knowledge-based technologies and production concepts (especially micro and nano) for the processing of non-silicon materials;
- **Prediction of product and process performance** to reduce/manage the risk during product development and production, and to reduce time to market for the next generation of microsystems-based products;
- **Future product platforms** to meet the requirements of the next generation of microsystems-based products, and of more stringent regulations and environmental legislation; and
- **Production scale-up** to ensure effective and efficient transfer of product and technology ideas from laboratories to serial production.

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## Themes:

Papers are invited that present original research and development in processes and process chains for multi-material micro and nano manufacture, in particular but not limited to:

- **Components:** fabrication technologies and process chains
- **Systems:** novel product designs and assembly technologies
- **Process modelling and simulation**
- **Process characterisation** including process chains
- **Metrology:** on-line monitoring and inspection systems/methods
- **Materials:** processing and characterisation of smart materials and material systems
- **Project Posters:** projects in their early stages can present the objectives

These seven sub-topics represent the intended content of the 4M2013 thematic sessions, to which the authors are invited to submit papers. The Conference will also feature invited special sessions focussed on the latest technology and application advances achieved in major EC-funded projects.

**Project Posters**, is an exciting new option and will support the launch of the 4M2020 project. The aim of the poster session is to enable projects that are still at the early stages, and so do not have sufficient results for a full technical paper, to make the 4M Community aware about their project and its objectives and any early findings. An annex to the 4M2013 Proceedings will include summaries of the projects (up to 4 pages) and so allow for early dissemination of the project results and also to establish mutually beneficial links with other projects within the 4M scope.

## Invited Speakers:

[Jian Cao](#), [Northwestern University](#), USA  
Richard Leach, [National Physical Laboratory](#), UK  
[Yasunori Saitome](#), [Tohoku University](#), Japan  
[Christian Hopmann](#), [RWTH Aachen University](#), Germany  
[José L. Ocaña](#), [Polytechnic University of Madrid](#), Spain

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## Organising Committee:

Sabino Azcarate, TEKNIKER, Spain **(Chair)**  
Stefan Dimov, University of Birmingham, UK **(Co-Chair)**

Nadja Adamovich, TUWien, Austria  
Chantal Khan-Malek, CNRS, France  
Bertrand Fillon, CEA, France  
Luc Federzoni, CEA, France  
Hans Nørgaard Hansen, DTU, Denmark  
Guido Tosello, DTU, Denmark  
Massimiliano Annoni, Politecnico di Milano, Italy  
Hast Jukka, VTT, Finland  
Mael Moguedet, PEP, France  
Victoire de Margerie, RONDOL Ltd, UK  
Christian Griffiths, Manchester University, UK  
Ulf Engel, University of Erlangen-Nuremberg, Germany  
Kornel Ehmann, Northwestern University, USA  
Jian Cao, Northwestern University, USA  
Antony H.C.Lee, MIRDC, Taiwan  
Dan Dascalu, IMT-Bucharest, Romania  
G. Maccarini, Università Degli Studi Di Bergamo, Italy  
Thomas Velten, Fraunhofer IBMT, Germany

Susan Anson, KIT, Germany  
Steffen Scholz, KIT, Germany  
Lars Mattsson, KTH, Sweden  
Rhett Mayor, Georgia Institute of Technology, USA  
Eleonora Ferraris, KULeuven, Belgium  
Martin Richter, FhG EMFT, Germany  
Andreas Schoth, University of Freiburg, Germany  
Volker Schulze, KIT, Germany  
Heinz Kück, HSG-IMAT, Germany  
Holger Reinecke, HSG-IMIT & IMTEK, Germany  
Pieter Bolt, TNO, Netherlands  
Maurice van der Beek, Philips, Netherlands  
Iban Quintana, TEKNIKER, Spain  
Xabier Mendibil, TEKNIKER, Spain  
Jose Ignacio Esmoris, TEKNIKER, Spain  
Luis Gerardo Uriarte, TEKNIKER, Spain  
Elis Carlström, Swerea-IVF, Sweden  
Alexander Stuck, CSEM, Switzerland  
Helmut Loibl, FOTEC, Austria  
Samuel Bigot, Cardiff University, UK  
Christopher Matthews, Cardiff University, UK  
David Gardner, C-Tech Innovation, UK  
Natalie Withenshaw, C-Tech Innovation, UK

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## Submission of Full Papers

- o **Submission site opens: 13th February 2013** **Deadline: 31st May 2013**
- o **Submission site:** <http://conference.4m-association.org/openconf.php>

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## Paper Review

To ensure a high-quality Conference, all papers will be reviewed by fellow authors under the leadership of the Session Chairs.

## Oral and Poster presentation

Submitted papers may be selected for oral or poster presentation. All oral and poster presentations will be included in the Conference Proceedings.

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## Important Dates:

- o Extended Submission **deadline for full papers:** **31<sup>st</sup> May 2013**
- o Feedback from the peer review to authors: **8<sup>th</sup> July 2013**
- o Submission of Final paper: **27<sup>th</sup> July 2013**

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## Proceedings:

All final papers accepted for presentation will be included in the 4M2013 Proceedings to be published by Research Publishing Services. Selected papers will be considered for publication in Special Issues of Journals.

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## Conference Secretary

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