

# 4th October 2007 Collaborative Research & Industrialisation Day 2

## 9:00 Formal Assembly Meeting

### Session 1: Reliability

- 10.00 Reliability of MOEMS in harsh Environments  
- **K Trieu (Fraunhofer IMS)**
- 10.20 Reliability Simulation – Methodology & Support for FMEA  
- **M Desmulliez (Heriot Watt University)**
- 10.40 **Coffee**
- 11.00 Hermeticity testing of Zero-Level Packaging  
- **I De Wolf (IMEC, Belgium)**
- 11.20 Quantitative Accelerated Life Testing of MEMS Tutorial  
- **M Bazu (IMT, Bucharest)**

### Session 2: Microfluidics

- 11.40 Biodrop Flagship - **H Kerkhoff (University of Twente)**
- 12.00 Lunch
- 13.30 Open session FP7 proposals and the future of PATENT-DfMM

*Leighton  
Hall*

## Social Event

Tuesday 2nd October 2007

Leighton Hall is a Stately Home situated in Yealand, Carnforth surrounded by parklands and set against the Lake District Hills. The building is over 750 years old and is currently owned by Richard and Susan Gillow Reynolds descendants of the famous world renowned furniture making family.

### Itinerary

- 19:00** Coach will leave Lancaster House
- 19:30** Drinks Reception in the Music room
- 19:40** Talk on the history of the House in the Music room by owner Suzie
- 20:00** Meal in the Main Reception rooms
- 22:30** Coach will depart for Lancaster House Hotel

Design, Test & Manufacturing Technologies for Inegrated

# Micro&Nano systems

**1st - 4th October 2007**

Lancaster House Hotel, Lancaster, UK

#### Sponsors:



Integrated Micro/Nano  
Platforms & Services



Design for Micro & Nano Manufacture  
Network of Excellence

LANCASTER  
UNIVERSITY



# 1st October A Lancaster University Outreach Event

The ability to integrate microelectronics with a range of physical, biological and fluidic transducers is opening opportunities for numerous market sectors. This outreach day targets industrialists from both SME's and large companies with interests as both users or suppliers to this sector.

10.00am Coffee & Registrations

10.20am Welcome Address

10.30am Micro & Nano Systems, market trends and growth opportunities - **H Van Heeren, enablingMNT (NL)**

10.50am What Micro & Nano Technology can do for you - A user perspective - **To be confirmed**

11.10am Micro & Nano Technology facilities in the UK - **Prof H Clare**

11.30am Coffee Break

11.50am Panel Session: Technology Access Initiatives

- Access to silicon & polymer based technologies for MEMS and bio/fluidic Applications : the Framework VI INTEGRAMplus Consortium - **Prof. C Pickering (QinetiQ)**
- Engineering services to support design through to manufacture - The FP6 Network of Excellence clusters - **Prof A Richardson (Lancaster University)**
- Europractice - A public funded organisation providing access to software, technologies and IC services - **P Salomon (4M2C)**
- Training services in the domain of Micro & Nano Systems - **Dr. D Koltsov (Lancaster University)**

## 1.00pm Lunch, Lancaster House

## 2.30pm Case Studies

- Silicon MEMS microphone for hi-fi and industrial applications - **C Reeves (QinetiQ)**
- Bio-fluidics applications - **Dr T Ryan (EPIGEM, UK)**

## 3.20pm European and Regional Funding Mechanisms for SMEs

- FP7 SME support initiatives (ICT and Capacities) - **EC Project Officer**
- AWM Advanced Sensors Initiative - **C Cambridge (QinetiQ)**
- NEXUS - A European association supporting the SME base - **S Neyon (Colybris SA)**

4.10pm Closing Remarks & Question Session

4.30pm Close

7.00pm Evening Meal - Lancaster House Hotel

# 2nd October Business Development & Industrial Challenges

9:00 FP6 Network of Excellence in Design for Micro & Nano Manufacture - A new community to support an evolving industrial sector - **P Salomon (4M2C)**

9:15 Information & Service Access through the Database and Service clusters - **A Richardson (Lancaster University)**

9:30 Guest Lecture - Systems Engineering - the foundations for multi technology integration within the Micro & Nano Systems world - **A.El-Fatraty (BAE Systems.)**

10:15 Coffee

10:30 Micro & Nano Systems - Market entry, business practice and supply chains - embedded tutorial - **P Salomon (4M2C), D Koltsov (Lancaster University)**

## Session 1: Microsystems Packaging

11:30 Microsystems Packaging & Interconnect Roadmap - **M Desmulliez (Heriot Watt University) & A Longford (PandA Europe)**

11:50 Collaborative study on the impact of die attach adhesives on Chip-on-Board technologies for MEMS integration - **D Combes & A Brown (QinetiQ), N Cordero (Tyndall)**

12:10 Package & Assembly Reliability in System-in-Package Technology - **C Bailey (Greenwich University)**

12:30 New Packaging Technologies for miniaturised products - **leMRC / (Loughborough University)**

## 13:00 Lunch

## Session 2: Health & Usage Monitoring & Multi-sensor instrumentation

14:00 Embedded Tutorial : Intelligent multi-sensor arrays for aircraft wiring systems monitoring - **A Sutherland (BCF Designs) & M Desmulliez (Heriot Watt University)**

14:50 MicroHUMS activities within the leMRC - **A Richardson (Lancaster University)**

15:10 The uHUMS Service Cluster - **M Begbie (System Level Integration limited)**

15:30 Coffee

## Session 3: Reliability & Embedded Test Engineering

15:50 Embedded Seminar - MEMS Reliability Testing - **I De Wolf (IMEC, Belgium)**

16:20 Motionless testing of embedded inertial sensors - **P Nouet (CNRS/Universite Montpellier)**

16:50 Equipment & Services Access across Europe - the PATENT-DfMM Reliability Service Cluster - **K Trieu (Fraunhofer IMS)**

17:10 Access to Characterisation Services - CEMMNT - **A El-Fatraty (BAE Systems)**

17:30 Reliability Engineering Consultancy - **X Lafontan (NovaMEMS)**

19:00 Social event coach leaves for Leighton Hall

# 3rd October Collaborative Research & Industrialisation

## 9:00 Guest Lecture

## Technical Advances within 3D-MINTEGRATION

- **D Topham (Arts & Science), M Desmulliez (Herriot Watt University)**

## Session 1: Modelling Technology

9:45 Embedded Tutorial : Integrating damping mechanisms into MEMS component models - **A Frangi (Politecnico di Milano)**

Coffee

10:30 Microchannel and flow modelling for Bio/ Fluidic Systems - **D Emerson (Science and Technology Facilities Council)**

11:20 Stiction modelling in MEMS switches - **C Tibeica & V Moagar-Poladian (IMT, Bucharest)**

## Session 2: Embedded Test

11:40 Bias Superposition - A built-in electrical only test strategy for transducers - **N Dumas (Lancaster University)**

12:00 Embedded monitoring of Quality Factor in microresonators - **H Mathias (Universite Paris-South)**

12:20 Embedded test strategies for Bio/Fluidic Microsystems - **H Kerkhoff (University of Twente)**

12:40 MEMS testing through electro-thermal excitation - **M Rencz (Budapest University of Technology and Economics)**

## 13:00 Lunch

## Session 3: Packaging Technology

14:30 Chip Scale & Wafer Level adhesive bonding for low temperature MEMS packaging - **C Wang (Heriot Watt)**

14:50 MOEMS packaging for Harsh Environments - **J Loicq (Centre Spatial de Liege)**

15:10 Laser based processes for MEMS Assembly & Packaging - **C Wang (Heriot Watt)**

15:30 Biocompatible Packaging for implantable sensor systems - **M Driesden (Katholieke Universiteit Leuven)**

15:50 Coffee

## Session 4: Design Automation & Simulation

16:20 Integration of Reduced Order Modelling into a Commercial Simulator - **G Depeyrot (Dolphin Integration)**

16:50 Approach for Yield based Design in Microsystems - **S Praveen (Uni Bremen)**

17:00 Design for manufacture Support - **G Schropfer (Coventor)**

17:20 Close

20:00 Evening meal Miyabi Japanese restaurant