

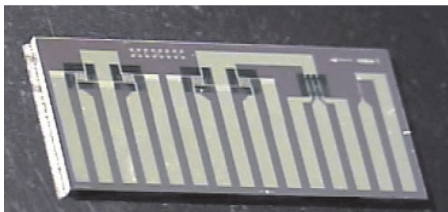
Chemical and Biomicrosystems activities at CNM-IMB

The Centro Nacional de Microelectrónica (CNM-IMB) is located in Barcelona and it is the largest public microelectronics research and development centre in Spain. Founded in 1985, it belongs to the Consejo Superior de Investigaciones Científicas (CSIC) and is managed by a Board of Trustees. CNM-IMB staff is around 130 people about 80 of whom are researchers. This research centre offers micro and nanofabrication and characterization services through its Clean Room, electrical/electrochemical characterization and advanced packaging facilities (MCM). Researchers and engineers develop process technologies focused toward microsystems, power devices and systems, chemical transducers, nanotechnologies, biomedical applications, and electronic design of IC and systems.

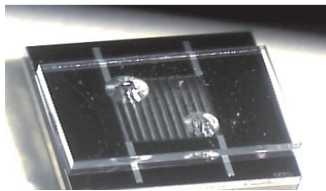
Within this frame, the Microsystems group focuses its research activities in the design and fabrication of microsensors and actuators based on CMOS and/or hybrid technologies regarding their integration and encapsulation in more complex systems. Chemical sensors for gas and aroma detection and bioMEMS are two of the areas in which this group is very active. This kind of devices present the advantages related to silicon microsystems, that is, reduced size, low cost, mass production, fast response and the possibility of being integrated with the required circuitry. Main applications of these devices are food industry, domotics, environmental monitoring, biosecurity and energy generation.

Research activities in chemical sensors

- ♦ microhotplates for MOS sensors
- ♦ resonating structures (cantilevers, bridges) for change-of-mass detection
- ♦ SAW structures
- ♦ silicon preconcentration units
- ♦ chromatographic columns



Gas multisensor microhotplates



Silicon preconcentrator grid

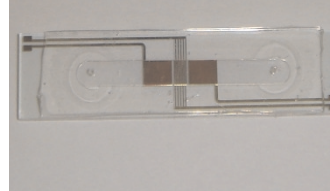
Contact person: Carles Cané Ballart
carles.cane@cnm.es

Research activities in bioMEMS

- ♦ Development of silicon-based micro/bio sensors based on electrochemistry transduction
- ♦ Nano/microelectrode arrays based on noble metals (iridium, gold and platinum)
- ♦ Amperometric sensors
- ♦ Lab-on-chip applications
- ♦ Biofuelcells



Microimpedimetric chip for biological test



Hybrid electrochemical flow cell

Contact person: Francisco Javier Muñoz
francescxavier.munoz@cnm.es

4M Network of Excellence, Coordinator Cardiff University

The first 4M Special Issue is now available online. This special issue was prepared from selected contributions to the 4M2005 Conference and is published in the Proceedings of the Institution of Mechanical Engineers, Part C. You can find the Contents Page of this special issue on: <http://journals.pepublishing.com/link.asp?id=X021TH5KXL60>

4M2007, 3rd International Conference on Multi-Material Micro Manufacture

Location: Borovets, Bulgaria, Begin: 12/03/2007, 9.00 am, Ends: 12/05/2007, 5.30 pm

URL: <http://www.4m-net.org/conference/>

Description: The main goal of the Conference is to provide a forum for experts from industry and academia to share the results of their in-depth investigations and engage in interdisciplinary discussions about the creation of micro-manufacturing capabilities. Papers are invited to present the latest advances in developing new processes and process chains for multi-material micro manufacture and their applications in microsystems-based products.

The opening of a new facility at Cardiff University's Manufacturing Engineering Centre (MEC) will further enhance their reputation as a world centre of expertise. Welsh Assembly Minister for Enterprise, Innovation and Networks, Andrew Davies has said, "The £7.5 million MicroBridge facility at the MEC will enable engineers to produce microscopic components for industry and will enable precision engineers in manufacturing to work to the same micro-scales as those in electronics. More at: http://www.mec.cf.ac.uk/services/?view=Minister_visit&style=default

ASSEMIC - Marie Curie Research Training Network, Vienna University of Technology

The Annual Meeting of ASSEMIC Research Training Network (**Advanced Handling and Assembly in Microtechnology FP 6 Project no: 504826 -2004-2007**) took place from 25 to 27 October 2006 in Hersonisos, Crete. A lot of progress have been registered in the training activities of the fellows. The most important achievements were presented and discussions about future work to be performed in handling and assembling were held. The Meeting started with an **Info Day**, organized by prof. G Kiraikidis, from IESL/FORTH in collaboration with the **Science and Technology Park of Crete (STEP-C)** (www.stepc.gr) and with the active participation of selected contributions from ASSEMIC project (www.assemic.net).

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