Manufacturing Engineering Centre, Cardiff Univ., UK

- **Accredited Centre of Excellence**
- **Coordination during FP6 – IST & NMP:**
  - **2** NoEs, **2** STREPs
- **Partnership during FP6 – IST & NMP:**
  - **3** IPs, 3 STREPs, **2** CAs, **1** SSA
- **Over €12.5 million EU funding since 2003**

- **Relevant projects include**
  - "Facilities for Micro-Machining and Micro-Fabrication of Non-Silicon Components (MicroBridge)“, £7,577,000
  - Charged Particle Nanotech (CHARPAN)“, €315,869
  - "Surface Enhanced Micro Optical Fluidic Systems (SEMOFS)“, €306,460

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Organic materials for polymer electronics

There is a big demand for a cost effective production of **light, small, flexible, electronic devices** that can be manufactured reproducibly **on large area** for various applications. By replacing the inorganic semiconductors with organic semiconducting and functional materials and their integration onto cheap polymeric substrates will meet the current requirements for **low cost fabrication of flexible, biocompatible, and environmental friendly** devices.

Objectives

- To develop novel functional materials for low-cost serial structuring and replication
- To create a data base for the most economical processing window for fabrication of planar organic electronic devices by printing, direct write, projection mask-less lithography and nanoimprint techniques
- Novel design of organic electronic devices
- Manufacture of flexible organic devices in reproducible manner on large areas

Relevance to the Call

- **NMP-2007-4.2.2-1** : **Organic materials for electronics and photonics**

- Key words:
- - New developments in polymer based electronics and photonics innovations
- - focus on low cost and large area processing
- development of nanostructured organic multifunctional materials with tailored electronic, optical and sensing properties
- - processing technologies should provide low cost and low temperature solutions (e.g. soft-lithography, dip-pen lithography, self-assembled monolayers and molecular imprinting).

Scale

- Duration: 3 years
- Budget: € 6 million (Large-scale integrating projects)
- Consortium: 10 partners

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- Additional expertise required:
  - Device fabrication and characterization
  - Printable functional materials
  - Final application specifications from industrial partners

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