

Physical Analysis & Characterisation

PAC

The Institute for Materials Research (IMO) is a research laboratory of the Hasselt University, a Flemish University, located in Diepenbeek (Belgium) with a staff of more than 100 people.

IMEC's associated laboratory IMOMECE (Institute for Materials Research in Microelectronics) at the Hasselt University collaborates intensively with IMO. The more fundamental research is carried out at IMO while applied research and projects in collaboration with industry are concentrated within IMOMECE.

The "Physical Analysis and Characterisation" group acts as a supporting group to other IMO-IMOMECE and IMEC groups. Besides this supporting activity, the group participates in almost every research project, both fundamental and applied. Together with the "Chemical Analysis and Characterisation" group, the PAC group acts as a service centre towards industry.

Overview analytical equipment

TEM (transmission electron microscopy)

- o Philips CM12 with EDX detector

SEM (scanning electron microscopy)

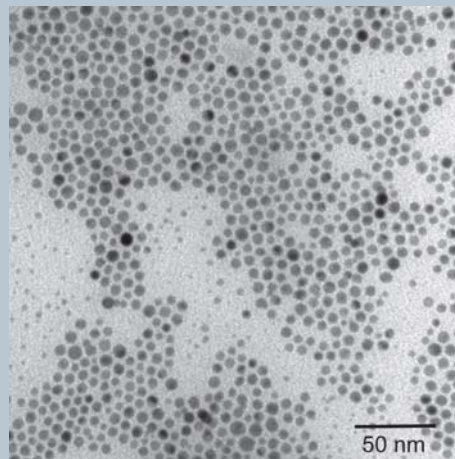
- o Philips XL30 FEG-SEM
 - EDX detector (EDAX)
 - Wafer prober (up to 4 needles and 48 electrical connections) with a heating facility unto 300°C
 - Automatic imaging recording for dynamical experiments
 - CL detector
- o FEI Quanta 200 FEG-SEM
 - High vacuum, low vacuum and ESEM conditions
 - EDX detector (Bruker AXS Quantax platform with Esprit software)
 - Nordlys II EBSD detector (HKL Technology)
 - Electron beam lithography (J.C.Nabity NPGS 9.0)
 - Automatic imaging recording

SPM (scanning probe microscopy)

- o Veeco Multimode SPM
 - Nanoscope IIIa SPM controller
 - Quadrex module
 - Standard modes + electrical related modules (EFM, SSPM, C-AFM/Tuna,...)

Optical reflection microscopy

- o Carl Zeiss Axiovert 40MAT



XRD (X-ray diffraction)

- o Siemens D5000
 - Focusing Bragg-Brentano geometry
- o Bruker D8 Discover
 - Vertical theta-theta diffractometer with parallel beam geometry
 - Scintillator and position sensitive detector
 - ¼ centric Eulerian cradle
 - High temperature chamber unto 1200°C

X-ray through focus

- o Phoenix PCBA analyser nanofocus

SAM (scanning acoustic microscopy)

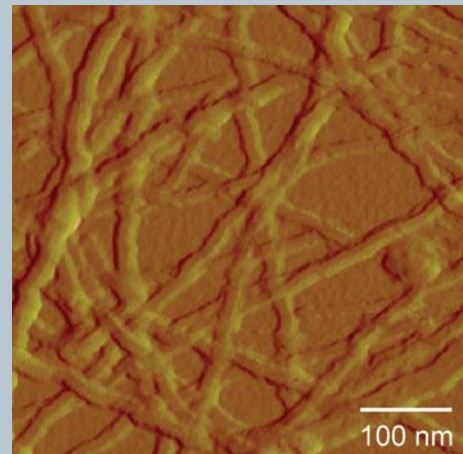
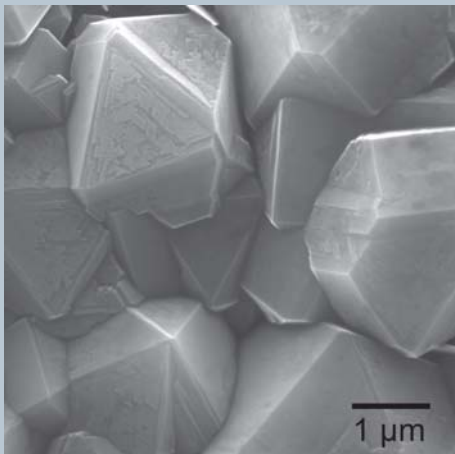
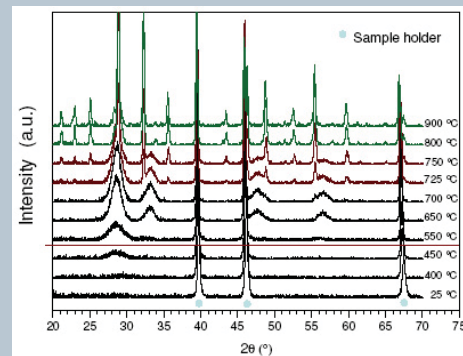
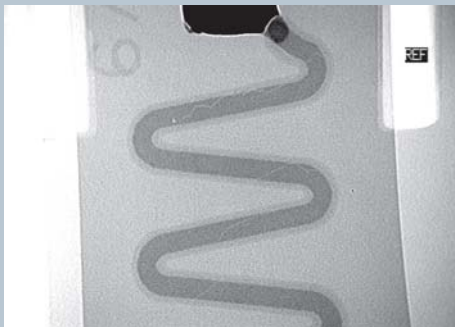
- o Sonix

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