



The NANOcenter consortium of the University of Antwerp offers expertise and R&D services in advanced nanoscale characterization and computational modeling of nanomaterials

www.uantwerpen.be/iof-nano



Partners

EMAT

Electron
Microscopy
for Materials
Science

CMT

Condensed
Matter
Theory

PLASMANT

Plasma, Laser
Ablation
and Surface
Modelling
Antwerp

We offer

Advanced nanoscale characterization

- Microstructure, size and shape of (nano)particles, analysis of coating layers
- Characterization of defects in crystalline materials
- Imaging thin films and multilayer structures with atomic resolution
- Analysis of local chemical composition, elemental mapping
- Orientational and strain mapping
- Quantitative nanomechanical in situ TEM experiments
- Three-dimensional (3D) imaging of particles, precipitates or inclusions
- Site-specific TEM sample preparation using focused ion beam (FIB)

Ab initio and classical simulation and modeling

- High-throughput computational screening of materials
- Ab initio modelling of nanostructures and two-dimensional crystals
- The electronic properties of (nano)crystalline materials
- Formation energy calculations using first-principles techniques
- Modeling of defects, impurities, short- and long-range order
- Reactive molecular dynamics on various systems
- Modeling of gas phase and plasma species interacting with surfaces
- Plasma effects on nanostructure growth / modification
- Calculations for reaction barriers

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