

PLATFORM OF "ADVANCED MICROSCOPY"

The platform offers an analysis and characterization of materials by Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM)

SCIENTIFIC EXPERTISE

- Microscopy and spectroscopy analysis methods
- An "IDEX" approved platform
- Member of the METSA network
- Analysis of nanomaterials

APPLICATIONS

- New materials
- Advanced characterization of materials
- All industry like: nuclear, aeronautics, electronics, automotive, biomedical, quality control, environment...

TRACK RECORD

- Photoelectric cell
- Nanostructured polymeric pipes
- Research collaborations
- Service for specialized societies (Nanobiotix, Pixium Vision, Lab'Crim)

PUBLICATIONS

D. Alloyeau & al. Springer, ISBN 978-1-4471-4014-6 (2014)

C. Ricolleau & al. Journal of applied physics 114, 213504 (2014)

J. Nelayah & al. Nanoscale 6 (17), 10423-10430 (2014)

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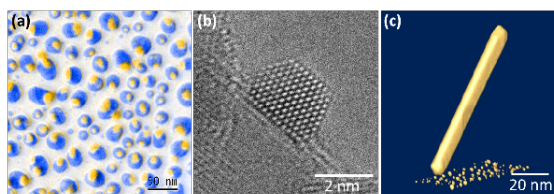
- Scanning Electron Microscopy (SEM or MEB)
- Electron diffraction
- Transmission Electron Microscopy (TEM or MET)
- Tomography
- High resolution imaging
- Elemental map analysis
- *In situ* microscopy (temperature, gas, liquid)

SERVICE DESCRIPTION

The platform of « Advanced Microscopy » is dedicated to the structural and chemical characterizations of every type of materials by conventional and/or advanced techniques of electron microscopy. The treatment process is complete. It goes from sample preparation to analysis by microscopy or spectroscopy.

Depending of clients' needs, the scale of study is the microscopic scale (SEM) to sub-angstrom scale, size smaller than 10^{-10} m (TEM with corrected aberrations). This offer allows to determine the compounds of a product or to map the chemicals compounds of materials at different scale from microscopy to nanoscopy.

For this offer, the target organizations could be private or public ones, from small enterprise to the industrial company or for public services (university, administration). And the covered sectors are all ones of the industry : biomedical, environment, automotive & transport, TICS, aerospace & defense, consumer goods...



(a) Chemical map of CuAg hybrids core/shell nanostructures by Energy Filtered TEM. (b) Aberration corrected high resolution imaging of a new bimetallic nano-catalyst. (c) Electron tomography of a Cu nanorod. © M.E.A.N.S.

OFFER

- Aberration corrected high resolution microscopy (down to 0.1 nm resolution)
 - Conventional bright field and dark field and energy filtered (EFTEM) imaging
 - *In situ* high resolution electron microscopy under high temperature conditions
 - Environmental microscopy in gaseous or liquid environments
 - Electron Energy Loss Spectroscopy (EELS) & Electron diffraction, complementary of STEM / EDX / Electron tomography
 - Analysis of optical properties of single objects
- More details on : [Website of "Advanced microscopy" platform](#)