Details

MAPEX Core Facility for Materials Analytics (MAPEX-CF)

The MAPEX-CF is a shared materials analysis and characterization facility that offers research services and the use of equipment for both university-internal and external users. It comprises five investigation areas: 3D Materials Analytics, Electron Microscopy, Surface Analytics, Spectroscopy, and X-ray Diffraction. The scientific focus of the MAPEX-CF is the investigation of structures, topographical features and, physical, and chemical properties of the surface and the bulk of materials during their synthesis, manufacturing, and use. The MAPEX-CF is embedded institutionally within the MAPEX Center for Materials and Processes and was established by the University of Bremen under the DFG project number 434618658.

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28359 Bremen
Bremen
Deutschland
To website

Host Institution

Universität Bremen
Bibliothekstraße 1
28359 Bremen
Bremen
Deutschland
https://www.uni-bremen.de/

Scientific Domain

Primary Subjects:
- Physics
- Materials Science and Engineering

Secondary Subjects:
- Biology
- Chemistry
- Geosciences (including Geography)

Category

Materials Synthesis and Testing Facilities

Scientific Services

The MAPEX-CF offers services within its five investigation areas (1) 3D Materials Analytics, (2) Electron Microscopy, (3) Surface Analytics, (4) Spectroscopy, and (5) X-ray Diffraction. Internal and external researchers can request access to a variety of material's characterization techniques ranging from imaging (XRM, micro-CT, SEM, TEM, AFM, interferometry), diffraction (powder and single-crystal XRD), and spectroscopy (XPS, Raman, FT-IR). Its equipment is used according to two operation modes: Service Operation, where all experiments are performed by the MAPEX-CF Application Scientists or their teams; and Application Operation, where users perform the experiments themselves with minor support from the MAPEX-CF.

Scientific Equipment

- X-ray Computed Microtomography ProCon CT-ALPHA
- X-ray microscope Zeiss Xradia 520 Versa
- Powder diffractometer Bruker D8 Advance und Discover

- Powder diffractometer Stoe Stadi MP
- Powder diffractometer Panalytical X'Pert Pro
- Single-crystal diffractometer Bruker D8 Venture
- Probe corrected (S)TEM Thermo-Fisher SPECTRA 300
- (S)TEM FEI Titan 80-300
- FIB/SEM Zeiss Auriga 40
- Vertical Scanning Interferometer with Raman spectroscope
- Fast scanning AFM; JPK Nanowizard III AFM
- Low-Energy Electron Microscope Elmitec
- Raman Aramis Spectroscope
- XPS and LEED Omicron VT
- Chirascan Plus Circular Dichroism spectroscope Applied Photophysics

Keywords

- Electron microscopy
- X-ray microscopy
- X-ray diffraction
- Spectroscopy
- Surface analytics
- Interferometry
- Microscopy
- Computed tomography
- In-situ analyses
- High-throughput screening
- Correlated workflows
- Real-time analysis
- Materials processing

Networks

MAPEX Center for Materials and Processes
https://www.uni-bremen.de/mapex

Users per annum

Internal Users:
External Users in total:
External Users:
External Users in the EU:
External Users outside of EU: