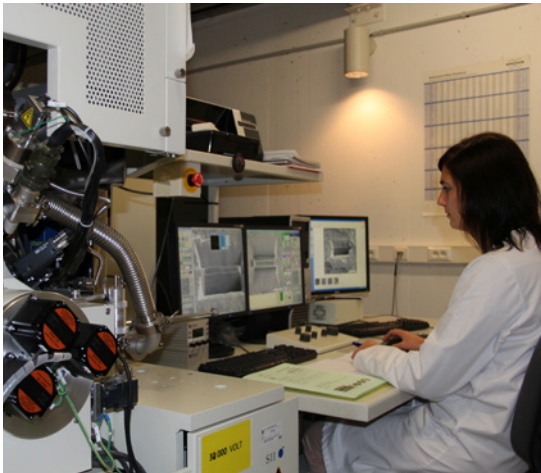


Materials science in focus

OCAS has been successfully applying its Focused Ion Beam (FIB) to screen and process a wide variety of materials. As FIB combines high resolution imaging with specific sample preparation techniques on nano-scale, it is the perfect tool to study interfaces as well as preparing samples for further analysis by Transmission Electron Microscope (TEM).

OCAS assures a results-driven approach for your surface and materials related analysis using its unique range of state-of-the-art equipment.



Benefits of using triple beam FIB

Our FIB instrument is a high resolution SEM (scanning electron microscope) combined with the sputtering capability of gallium and argon ions, your perfect micro- and nano-machining tool.

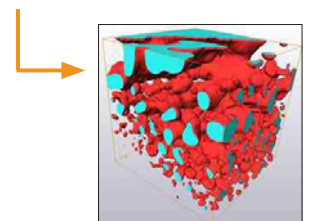
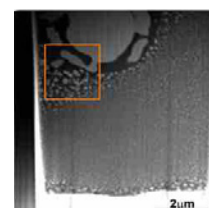
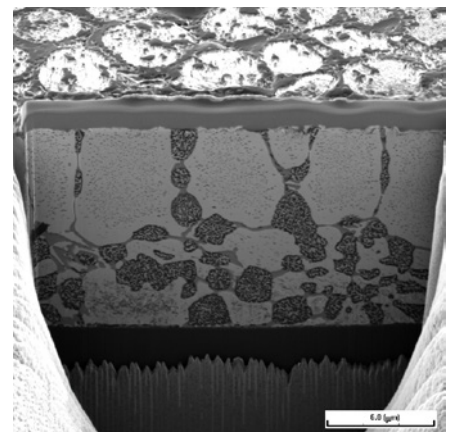
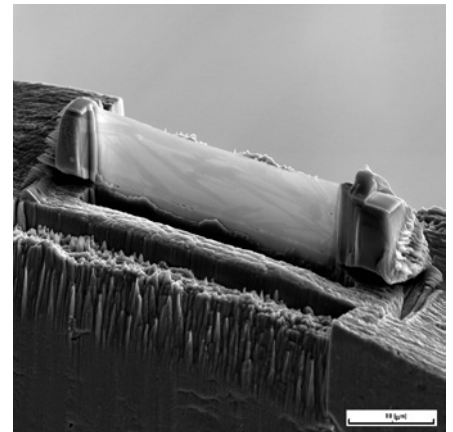
Nano-machining

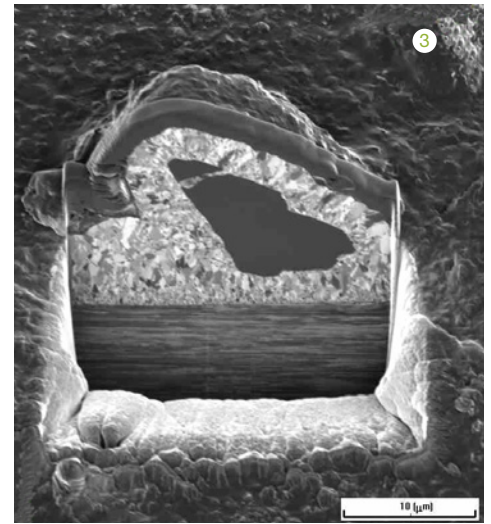
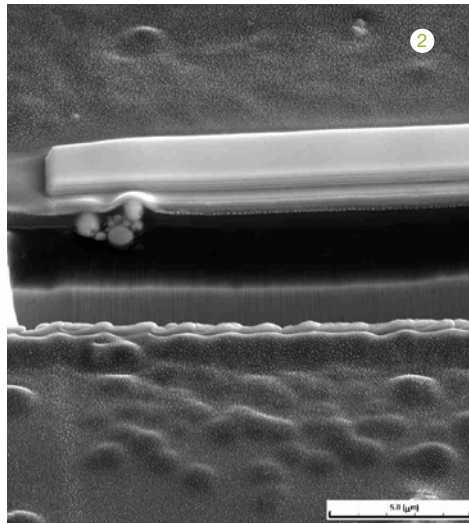
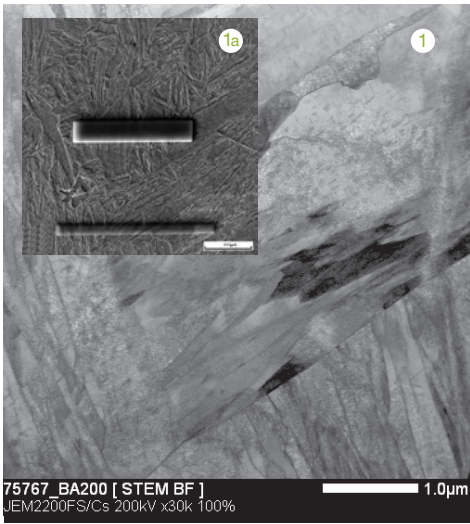
- Clean cut through all materials, allowing exact location selection
- Sectioning dense as well as porous phases
- Local milling by gallium ions followed by final cleaning using argon ions
- Reduced sputter damage thanks to argon ion gun
- Milling with nm resolution
- Reduced sputter damage thanks to argon ion gun
- Milling with nm resolution
- Applicable on all materials resisting to vacuum: such as coatings, pretreatment nano-layers, substrates and interfaces, including powders and particles in fumes
- High quality FIB prepared lamellae allow for improved identification and imaging of crystalline and eutectic phases using TEM-EDX analysis

Direct imaging and analysis

- Intense grain orientation contrast thanks to ion induced secondary electron images, without need for chemical etching
- Nano-scale observation of layer thickness, adherence, delamination, etc.
- Simultaneous EDX analysis available

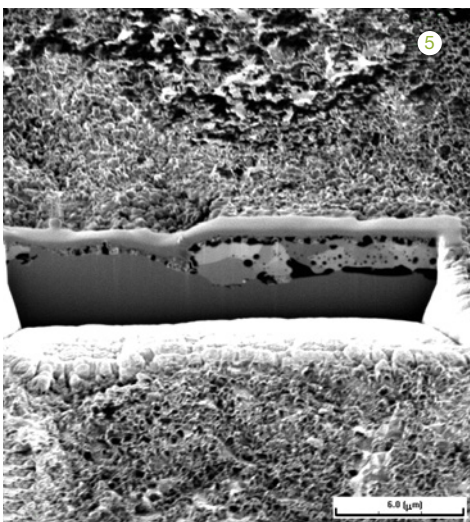
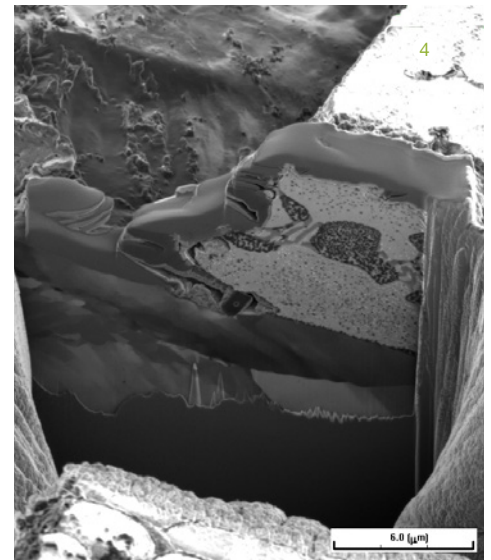
3D-reconstruction “slice and view” on μm scale by consecutive milling and imaging





FIB's unique potential

- ①a + ① Specific area selection for sampling allows for fine-scale microstructure analysis by TEM
- ② Displaying surface defects and identifying their origin
- ③ Visualising co-deposition of particles within a metallic coating on wire
- ④ Detailed view of structure at fracture
- ⑤ Revealing surface oxidation on electrical steel



R&D partnerships

In addition to advanced materials characterisation, OCAS has a long history of successful R&D partnerships with companies and research institutes. We are open to any kind of collaboration and are interested to hear about original ideas or exciting running projects where we could provide materials science know-how.

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