

Shaping the future of oxide epitaxy in the

FUNCTIONAL OXIDES COATING CENTER

at KU Leuven (Belgium), partner in 

ABOUT

The center focuses its research on oxide thin films and nanostructures and their assembly into novel materials, functional devices and systems for electronic and photonic applications.

The thin films comprise crystalline and amorphous materials grown using deposition methods such as molecular beam epitaxy (MBE) and chemical vapour deposition (CVD) with gaseous or liquid precursors. The coatings can be grown on wafers ranging from 1 cm up to 300 mm. An extensive array of techniques is available to probe the structural, electrical, mechanical and optical properties.



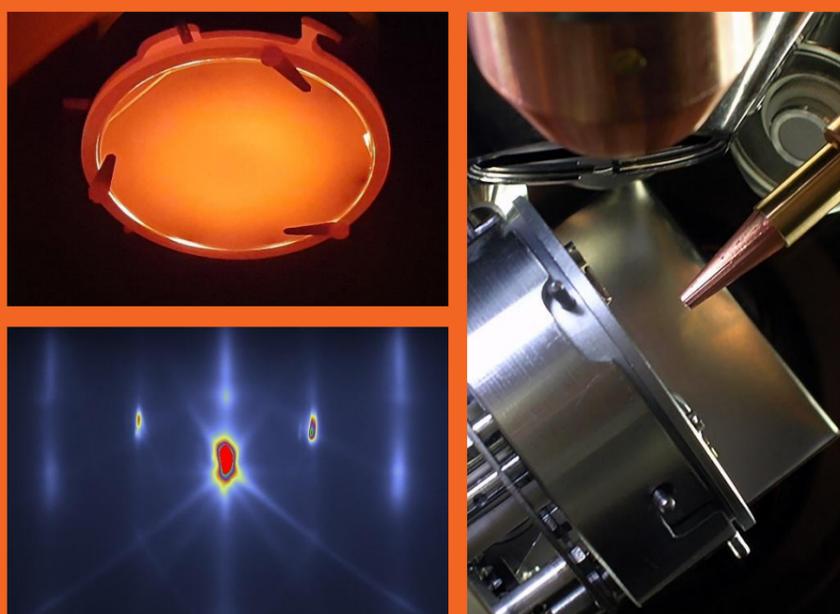
SCOPE

FOX C2 aims to bring crystalline oxides and their fascinating functionalities (including high temperature superconductivity, high K dielectric constants, ferroelectricity, metal-to-insulator transitions, etc) closer to integration in devices by focusing on a select family of oxide compounds that can be grown with high quality on the appropriate substrates.

With the arrival of a 300 mm oxide MBE system in 2023, we are now ready to translate our results obtained on small scale substrates towards large area industrial wafer sizes.

PROJECTS

The center is involved in various academic and industrial projects. This includes for instance the development of novel mirror coatings for gravitational wave detectors in the framework of the Einstein Telescope (ETPathfinder and E-Test) and Virgo. Another example is the use of vanadium oxides for photonic devices in H2020 and Horizon Europe projects, like PHOENIX.



EQUIPMENT

- Deposition-synthesis, including MBE and CVD
- Annealing in various environments
- Electron microscopy, including SEM and TEM
- X-Ray Diffraction, including XRR and RSM
- Probe microscopy, including AFM and STM
- Fourier-transform infrared spectroscopy (FTIR)
- X-ray photoemission spectroscopy, incl. (AR)UPS
- Thermogravimetric analysis (TGA)

Questions or requests: get in touch!



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