

Surface Physics Laboratory – Materials Science Beamline

Research Programme A: Operando study of single-atom catalysis in Pt/ceria systems

WP1: Novel tools for determining the electronic structure of metal-ceria systems – RAR PES

WP2: Self organization in nanostructured ceria systems for extended morphology control

WP3: Electronic metal-support interactions, metal oxidation and reduction in metal-loaded nanostructured ceria catalysts

WP4: Transfer of model studies to operando conditions – NAP XPS, APSTM/AFM – and the influence of the hydration of nanostructured metal-ceria systems on their physico-chemical properties

Research Programme B: Cerium oxide in biochemistry

WP1: Adjusting the morphology and stoichiometry of nanostructured CeO_x thin films as model ceria substrates

WP2: Hydrophilic coating of model systems – investigation of aqueous media interactions with nanostructured ceria model biocatalysts

WP3: Interaction of DNA bases and short chains with nanostructured ceria

WP4: Investigation of superoxide and peroxide interaction with model systems and with bioceria nanoparticles (NPs)

Research programmes and work packages within the SPL-MSB project.