

EMIL - a novel research platform for energy materials at the BESSY II synchrotron light source

A knowledge-based approach towards developing materials for energy conversion and storage application requires a fast and direct feedback between sophisticated analytics and state-of-the-art material processing facilities. At the Energy Materials In-situ Laboratory Berlin (EMIL) we achieve this by coupling synchrotron-based X-ray characterization techniques with relevant sample preparation techniques in one dedicated ultra-high vacuum (UHV) system which allows automated sample transfer within four minutes. EMIL is a joint project between Helmholtz-Zentrum Berlin and the Max Planck Society and will be fully operational in 2018. EMIL will provide light in an energy range from 70 – 10.000 eV which are distributed to five experimental endstations. EMIL consists of a 2000m² large laboratory infrastructure with deposition, chemistry and spectroscopy labs as well as a cleanroom facility.

In this presentation, I will provide an overview of the analytic and material capabilities at EMIL and report on the status and timeline of the project. I will discuss the overall estimated performance and highlight how EMIL can trigger research opportunities for future user operation.
