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The CIRCE-PEEM: past, present and future

Thursday, 8 September 2022 19:35 (20 minutes)

We present an overview of the status and capabilities of the PhotoEmission Electron Microscope (PEEM) at the CIRCE beamline of the ALBA synchrotron. The PEEM instrument, which can be also used with an electron gun (Low Energy Electron Microscopy (LEEM) and micro-LEED), is a versatile, multipurpose surface and thin film characterization platform. The Synchrotron irradiation (Photon energy and polarization) gives access to a variety of chemical, electronic and magnetic contrast mechanism coupled to the high spatial resolution (down to 20 nm lateral, 1-10 nm in depth) of the microscope. Spectroscopy techniques (e.g. XAS, XPS) can be applied to selected nanoscale regions.
The CIRCE-PEEM offers many different sample environment options, for example application of small magnetic fields or electric signals through the sample. We review examples from user operation and highlight more recent developments. Finally we present possibilities of future upgrades in the context of ALBA-II.

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