“Quantitative Nanoanalysis in the (S)TEM”

September 22, 12:10 Madrid time zone

Prof Werner Grogger from Graz University of Technology

Chemical analysis in the STEM is an essential technique complementing and expanding the information obtained by conventional STEM imaging. In modern, aberration corrected microscopes atomically resolved elemental maps became feasible with EELS and even EDXS, where for the later large solid angle detectors are required. In the webinar we will discuss some characteristics of these sensitive X-ray detectors, in particular shadowing by parts of the specimen holder and its influence on quantification results. For heating experiments in the TEM analytical information is also paramount, therefore we will show some experimental results on the high temperature performance of X-ray detectors. Finally, we will demonstrate a way to quantitatively evaluate atomically resolved EELS maps in a practically relevant application example.

CV

Werner Grogger is deputy head of the Institute of Electron Microscopy and Nanoanalysis at Graz University of Technology. He studied Physics at the same university and in his PhD thesis worked on the characterization of a Germanium X-ray detector in the TEM. Around 2000 he spent 1,5 years at the National Center for Electron Microscopy in Berkeley, California. Since 2004 he has the license to teach (habilitation). Together with his team he works on analytical high-resolution electron microscopy.