

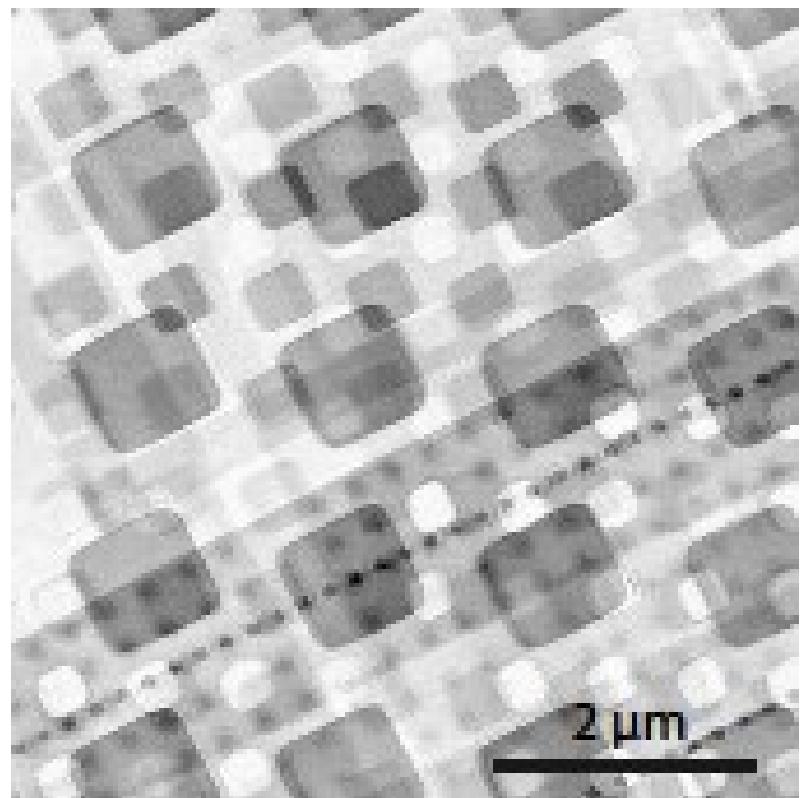


Microscopy with Coherent X-Rays: Following Physical and Chemical processes on the Nanoscale.

Christian Schroer (DESY)

Tuesday, 1 November 2016, 16:45 h, DESY Auditorium

A key strength of microscopy with x-rays is to image the inside of an object without destructive sample preparation. In this way physical and chemical processes can be followed in-situ or under working conditions inside special sample environments, such as a chemical reactor. But despite the short wavelength of x-rays that lies in the range of interatomic distances, it is not possible today to resolve single atoms. This is mainly due to the weak interaction of x-rays with matter that limits the numerical aperture of x-ray optics and thus the spatial resolution in the x-ray microscope. One solution to overcome this limitation is to avoid imaging optics altogether and scan the sample with a small coherent x-ray beam, capture the scattered light from the sample at each scan point with an area detector, and use these data to numerically reconstruct the sample. Following this scheme, a route to sub-nanometer resolution in x-ray microscopy is discussed.



- Coffee, tea and cookies will be served at 16:30h
- After the seminar there is a chance for private discussions with the speaker over wine and pretzels