Center for Electron Microscopy, CEN-DTU; The building - DTU Orbit (31/12/2018)

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Center for electron nanoscopy, CEN•DTU; The building
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ABSTRACT
CEN•DTU, having been given[1] the opportunity to create a world-class facility with a unique suite of electron microscopes, is in full swing with the construction of a purpose-built building. The microscopes are very special: 2 Titans, both Cs corrected, with monochromators and full analytical capabilities are to achieve spatial resolutions of 0.7Å and spectroscopy resolutions of 0.1eV. One of the Titans is to be equipped with an environmental cell, to provide in-situ observations of gas-solid interactions at high temperatures. 2 dual beam FIB-FEGSEMs, both with EDS and one with EBSD will allow 3D image, composition and crystallographic reconstruction at sub-nanometer resolution. Additional electron microscopes, making 7 in all, comprise a unique assembly of outstanding instruments for research, teaching and innovation. In order to operate at peak performance, such instruments place extreme demands on the stability of the environment around them. All of the following factors must be minimized through careful building design and construction: vibrations transmitted through the ground and acoustically; variations in room temperature and rates of airflow; variations in microscope cooling; magnetic fields. At the same time, we have been keen to design a pleasant, creative and dynamic working environment for the study of nanostructures, catalysis and materials science research. [1] A.P. Møller og Hustru Chastine Mc-Kinney Møllers Fond til almene Formaal is to donate ~DKK 97.000,000 to establish instruments and building for the Center of Nanoscopy at DTU.

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