Max-Planck-Institut für
Struktur und Dynamik der Materie
Max Planck Institute for the Structure and Dynamics of Matter

IMPRS UFAST Call for PhD applications 2020/2021

Lensless imaging using coherent electrons
H. Chapman-1

Title of PhD Project	**Lensless imaging using coherent electrons**
Type	Experimental
Supervisor(s)	Prof. Henry Chapman
Affiliation(s):	Center for Free-Electron Laser Science (CFEL), Deutsches Elektronen-Synchrotron DESY & Universität Hamburg
Number of positions:	1
Abstract:	The methods of coherent diffractive imaging and ptychography replace a lens with an algorithm to obtain quantitative phase-sensitive images, and may provide advantages over conventional electron microscopy of macromolecules. This project will develop simulations of coherent electron diffraction under realistic conditions and compare with experiments, and investigate new algorithms to recover images from the diffraction data. We are looking for a candidate with a strong interest in imaging and Fourier optics, and who is capable of programming and performing data visualisation.
Contact person for scientific questions about the project:	Henry Chapman: henry.chapman@cfel.de