

International Workshop on “Diffraction, Crystallography and Imaging at the European XFEL” DESY, Hamburg, October 28-29, 2005

G. Grübel for the XFEL Project Group

The European XFEL Project Team, in close collaboration with DESY, is working on the preparation phase for the new international XFEL facility. One of the tasks is to update and expand the scientific case to be presented as one of the fundamental documents on which the decision by the various countries to support the European XFEL Facility will be based. A series of workshops is being organized with the goal of collecting the views, the ideas and the support of the widest European scientific community for the preparation of this scientific case. The first of these workshops on

“Diffraction, Crystallography and Imaging at the European XFEL”

organized and chaired by J. Hajdu (U. Uppsala, Sweden), I.K. Robinson (U. Illinois, Urbana-Champaign, USA and University College, London, UK) and G. Grübel (DESY, Hamburg) was held on October 28/29 at DESY. A total of 15 speakers and 30 participants from 9 countries were discussing topics out of the following areas:

- single molecule diffraction and damage issues
- imaging, phase retrieval, image reconstruction
- dynamics aspects of imaging

complemented by an overview on project status and beam parameters (<http://xfel.desy.de>).

The goals of the workshop were to contribute to the update of the scientific case and to specify and prioritize requests for beamlines at the European XFEL. The workshop thus covered: Description(s) of the state-of-the-art activities at existing light sources. A compilation of problems and issues which are interesting and important, but not easy to solve with the present light sources (limitations in brilliance, coherent flux, pulse duration) and questions of how the XFEL can make these experiments feasible. Beamline concepts for the XFEL and the necessary instrumentation R&D were discussed. Finally, ideas and opinions were collected concerning which would be the first and/or most important experiment to do.

Three further workshops of this format are to be held in 2005 and 2006:

- Workshop on High Energy Density Science and Non-Linear X-ray Processes
November 28/29, 2005, Laboratoire de Chimie Physique Matière et Rayonnement (LCPMR), Paris, France
- Ultra-fast Time-Dependent X-ray Experiments at the European XFEL
January 20/21, 2006, Danish Academy of Sciences, Copenhagen, Denmark
- Detectors for the XFEL
Spring 2006