THE EUROPEAN LIGHT SOURCE

RECENT WORKSHOPS

Tackling host pathogen interactions

The Users' meeting international workshop on structural and molecular biology of host-pathogen interactions attracted more than 150 participants in the beginning of February. The workshop, organised by the Partnership for Structural Biology (PSB), aimed at showing how structural biology studies have complemented those using cellular and molecular biology during the last decade.

Three half-day sessions were dedicated to three topics: Bacterial adherence and Invasion; Virus and host cell factors and immune response. The first session on bacterial pathogens showed how various techniques, combined with macromolecular crystallography, have provided insight as to how bacteria assemble different adhesion and secretion machines to infect eukaryotic cells.

The session on virus entry and assembly provided an even broader view with a variety of mechanisms viral pathogens such as HIV, influenza and rabies in virus assembly and replication. During the last session, several presentations described how host cells respond to these pathogens.

The workshop was sponsored by the ESRF, SPINE-2 complexes, Dutsher Instrumentation, GE Healthcare and VWR. It is the first workshop organized by the PSB and its scope is one of the main themes of the partnership (http://psb.esrf.fr).

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Focusing on catalysis

Synchrotron based research, especially at 3rd generation sources, has recently started to open our eyes to how dynamic and complex the behaviour of catalysis systems can be from atomic to micron length scales. The ESRF workshop on time-resolved study of heterogeneous catalysts and the processes they mediate attracted 118 participants in the beginning of February. The diversity of the field, and the relevance of X-ray based study in this area, was further reflected by the participation of scientists based at ten different synchrotrons.

A structured programme sought to assess the state of the art of in situ and time-resolved research through isolating technical areas of study: diffraction, SAXS/WAXS, SXRD/GISAXS, high pressure photoemission and X-ray absorption spectroscopies. A final session dealt with techniques that are emerging as potentially important methods for furthering our understanding of these problems: emission spectroscopy and RIXS, Soft X-ray microscopy, pair distribution function methods in diffraction, tomography, and high-throughput methodologies for materials screening.

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On the cover of Nature Materials

When a granular material, such as sand, is mixed with a liquid, the surface tension of the latter bestows considerable stiffness to the material. This allows, for example, to build sand castles. Researchers at the Max Planck Institute for Dynamics and Self-Organisation in Göttingen, the Australia National University in Canberra, the University of Erlangen, and the ESRF have studied the complex composition of fluid structures in moist granules using x-ray microtomography to discover their laws. This research could lead to a better understanding of how grain–liquid–air interfaces interact in granular materials.

*Scheel et al., Nature Materials **7**, 189 - 193 (2008).*

Open Days at the ESRF

A total of 2500 people visited the ESRF on its Open Days on 29, 30 and 31 March. The Open Days offered the public the possibility of discovering the machine where the electrons circulate, as well as different beamlines. The last day was dedicated to secondary schools.