

# Science with X-ray Nano-beams

## Programme

Tuesday, 9th February - ILL Chadwick Amphitheatre		
08:30 - 09:00	<b>Registration &amp; Coffee</b>	
09:00 - 09:20	<b>Welcome by Serge PEREZ, Director of Research, ESRF</b>	
<b>Session: Nano-analysis-I</b>		
09:20 - 09:50	Three-dimensional X-ray fluorescence micro- and nano-analysis using synchrotron radiation	<b>Laszlo Vincze</b> Ghent University, Belgium
09:50 - 10:20	Nanoscale characterisation using state-of-the-art transmission electron microscopy	<b>David Cooper</b> CEA-LETI, Grenoble, France
10:20	<i>Coffee break</i>	
<b>Session: Material Science-I</b>		
10:50 - 11:20	Generalisation of 3DXRD microscopy to the sub-micron scale	<b>Henning Poulsen</b> Riso Laboratory, Denmark
11:20 - 11:50	Exploiting Nano-beams in the engineering and materials sciences	<b>Philip Withers</b> University of Manchester, UK
11:50 - 12:20	Micro- and nano-beams reveal mechanical behaviour of small structures	<b>Jozef Keckes</b> Montan Univ. Leoben, Austria
12:20 - 14:00	<i>Lunch at the ESRF/ILL restaurant</i>	
<b>Session: Nano-analysis-II</b>		
14:00 - 14:30	Hard X-ray scanning microscopy with coherent diffraction contrast	<b>Christian Schroer</b> TU-Dresden, Germany
14:30 - 15:00	Nanofocusing soft and hard X-rays with diffractive optics	<b>Christian David</b> PSI, Villingen, Switzerland
15:00 - 15:20	3D microdevices inspections with scanning And projection nanotomography	<b>Pierre Bleuet</b> CEA-LETI, Grenoble, France
15:20 - 15:40	An X-ray bilens nano-interferometer	<b>Anatoly Snigirev</b> ESRF, Grenoble, France
15:40 - 16:00	Nanoscale elastic strain relief in lithographically defined SiGe nanostructures	<b>Daniel Chrastina</b> Politecnico di Milano, Italy
16:00	<i>Coffee break</i>	

**Tuesday, 9th February - ILL Chadwick Amphitheatre**

**Session: Surface Science**

16:30 - 17:00	In situ observation of the elastic deformation of a single epitaxial SiGe crystal by combining atomic force microscopy and micro x-ray diffraction	<b>Joël Chevrier</b> CNRS, Grenoble, France
17:00 - 17:30	Determination of local morphologies in photoactive polymer films using nanobeam GISAXS	<b>Peter Müller-Buschbaum</b> TU München, Germany
17:30 - 17:50	NanoGISAXS investigation of solution cast nanoparticle films by X-ray scattering and multidimensional data set classification	<b>Stephan Roth</b> DESY, Hamburg, Germany
17:50 - 18:10	Local ordering and phase transformation of proteins on surfaces	<b>Ronald Gebhardt</b> TUM, Germany
18:10 - 18:30	X-ray Nanodiffraction at SiGe Dot Molecules	<b>Martin Dubsloff</b> Paul-Drude-Institut, Berlin Germany

**Wednesday, 10th February**

**Users' Meeting Morning Session**

12:30 - 14:00 Lunch at the ESRF/ILL restaurant

**Users' Meeting Parallel Sessions**

18:30 - 19:50 Joint Poster Session with Users' Meeting and PECS Workshop

20:00 Users' Meeting Dinner - Young Scientist and Best Poster awards  
(*Transport will be organised at 22:30 from the ESRF to Grenoble downtown*)

Thursday, 11<sup>th</sup> February - ILL Chadwick Amphitheatre

Users' Meeting Morning Session

12:30 - 14:00 *Lunch at the ESRF/ILL restaurant*

Session: Soft Matter and Biology-I

14:00 - 14:30 X-ray imaging with nanoscale beams: phase contrast, fluorescence and diffraction **Tim Salditt**  
Göttingen University, Germany

14:30 - 15:00 Nanodiffraction of G protein-coupled receptors **Gebhard Schertler**  
MRC Cambridge, UK

Session: Nano-analysis-III

15:00 - 15:30 Nanoscience using advanced X-ray microscopy **Jörg Maser**  
APS, USA

15:30- 16:00 Three-dimensional X-ray Fourier Transform Holography: the Bragg case **Virginie Chamard**  
IM2NP, Marseille, France

16:00 *Coffee break*

16:30 - 17:00 Shape, strain and stacking faults using coherent Bragg Imaging: study of single nanowires and strained silicon lines **Vincent Favre-Nicolin**  
CEA INAC, Grenoble, France

17:00 - 17:20 Nano-Heterogeneity – Key parameter in planetary & earth sciences **Alexandre Simionovici**  
LGCA - UJF Grenoble

17:20 - 17:40 High resolution X-ray microscopy on Gem Opal **Irina Snigireva**  
ESRF Grenoble

17:40 - 18:00 X-ray Investigations on CoSi<sub>2</sub> nano wires manufactured by focused ion beam synthesis **Jörg Grenzer**  
Forschungszentrum Dresden-Rossendorf, Germany

18:00 - 18:20 Sub-micrometer holotomography of multiphase metals **Guillermo Requena**  
Vienna University of Technology, Austria

19:30 *Bus departure to the restaurant*

20:00 *Workshop dinner at the restaurant "PIGNOL" in Grenoble*

Friday, 12<sup>th</sup> February - ILL Chadwick Amphitheatre

Session: Soft Matter and Biology-II

09:00 - 09:30	Scanning X-ray nanodiffraction for the investigation of structural biological materials: Status and perspectives	<b>Martin Müller</b> GKSS, University of Kiel, Germany
09:30 - 10:00	Intracellular synchrotron nanoimaging and DNA damage/genotoxicity screening of novel lanthanide coated nanovectors	<b>Boris Kysela</b> University of Birmingham, UK
10:00 - 10:20	X-ray micro-diffraction imaging: a new tool to study biomaterials for tissue engineering	<b>Alessia Cedola</b> IFN-CNR, Roma, Italy
10:20 - 10:40	X-ray Microfluorescence study of Mg in biological cells	<b>Stefano Lagomarsino</b> IFN-CNR, Roma, Italy
10:40	<i>Coffee break</i>	
<b>Session: Material Science-II</b>		
11:10 - 11:30	Spatially resolved measurements of texture, phase fraction and strain in the oxide of Zirconium alloys	<b>Philipp Frankel</b> Manchester Materials Science Centre, University of Manchester, UK
11:30 - 11:50	Synchrotron $\mu$ -beam study of oxygen content modifications in a single Bi-2212 superconducting whisker	<b>Stefano Cagliero</b> Università di Torino, Italy
11:50 - 12:30	Conclusions and discussion for all sessions	
12:30	<i>Lunch at the ESRF/ILL restaurant</i>	