International Workshop on Phase Retrieval and Coherent Scattering

COHERENCE-2016

Palais des Congrès Le Grand Large - Saint-Malo, France

June 7th - June 10th, 2016

Programme

Tuesday, June 7th

13:00 - 14:30 Registration
14:30 - 15:00 Welcome & opening introduction by V. Chamard & S. Ravy

Session I – XPCS
Chairperson: V. Chamard

15:00 - 15:40 The MID station at the European XFEL: Plans for coherent scattering and imaging using XFEL radiation
A. Madsen - European XFEL, Hamburg, Germany

15:40 - 16:00 Simulations of coherent X-ray scattering from dynamic crystal surfaces
G. Brian Stephenson - Argonne National Laboratory, Argonne, IL, USA

16:00 - 16:20 An XPCS study of driven domain dynamics in a ferroelectric single crystal
Mario Reiser - Universität Siegen, Germany

16:20 - 16:50 Coffee break

Session II - CDI-FEL
Chairperson: G. Beutier

16:50 - 17:30 Studies of nanoscale dynamics and in-situ strain development using coherent X-rays
Hyunjung Kim - Sogang University, Seoul, Korea

17:30 - 17:50 Quantitative single-shot 3D imaging of core-shell nanocrystals with elemental specificity
Alan Pryor Jr - University of California Los Angeles, USA

17:50 - 18:10 3D merging: Getting more from protein crystallography
Oleksandr M. Yefanov - DESY, Hamburg, Germany

19:30 Welcome Cocktail

Wednesday, June 8th

Session III - CDI
Chairperson: S. Labat

08:30 - 09:10 Single particle imaging at the linac coherent light source
Andrew Aquila - SLAC National Accelerator Laboratory, Menlo Park, CA, USA

09:10 - 09:30 Resolution extension of imperfect crystal diffraction using iterative phasing
Kartik Ayyer – DESY, Hamburg, Germany
09:30 - 09:50 Multiple defocused CXDI: A method for simultaneous reconstruction of isolated samples and probe using XFELs

Makoto Hirose - Osaka University and RIKEN SPring-8 Center, Hyogo, Japan

09:50 - 10:10 Coherent X-ray imaging of semi-conductor nano-structures for photonic and electronic applications

Vincent Favre-Nicolin - ESRF and Université Grenoble Alpes, France

10:10 - 10:30 Multiprojection setup for single-shot imaging

Pablo Villanueva-Pérez - Paul Scherrer Institut, Villigen, Switzerland

10:30 - 11:00 Coffee break

Session IV – Other sources
Chairperson: D. Le Bolloc'h

11:00 - 11:40 Spectrally resolved imaging with ultra-broadband high-harmonic generation sources

Stefan Witte - Advanced Research Center for Nanolithography, Amsterdam and LaserLab, Amsterdam, The Netherlands

11:40 - 12:00 3D stereo single acquisition imaging using high harmonic generation

Remy Cassin - LiDyL, Gif-sur-Yvette, France

12:00 - 12:40 Progress in electron ptychography

Andrew M. Maiden - University of Sheffield, UK

12:40 - 13:30 Lunch

Session V – Ptychography
Chairperson: S. Ravy

13:30 - 14:10 Utilizing Fourier projections to enable flexible three dimensional Bragg CDI and Bragg ptychography approaches

Stephan.O. Hruszkewycz - Argonne National Laboratory, Argonne, IL, USA

14:10 - 14:30 Soft X-ray coherent scattering and ptychography using BK focusing optics

Di-Jing Huang - National Synchrotron Radiation Research Center, Hsinchu, Taiwan

14:30 - 14:50 Ptychography in terms of an expansion in elementary signals

Julio Cesar da Silva – ESRF, Grenoble, France and Paul Scherrer Institut, Villigen, Switzerland

14:50 - 15:00 Break

Session VI – CDI
Chairperson: M-I. Richard

15:00 - 15:40 Using coherent X-rays to understand the physics of correlated electrons systems

Vincent Jacques - Laboratoire de Physique des Solides, Orsay, France

15:40 - 16:00 X-ray phase-contrast imaging using near-field speckle techniques

Marie-Christine Zdora - Diamond Light Source, Didcot and University College London, UK

16:00 - 16:20 Coherent diffractive imaging of thin film bulk heterojunctions for polymer solar cells

Nilesh Patil – Norwegian University of Science and Technology, Trondheim, Norway

16:20 - 16:50 Coffee break

16:50 - 19:30 Poster Session I
### Thursday, June 9th

#### Session VII - XPCS
Chairperson: M. Sutton

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<tr>
<th>Time</th>
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<th>Speaker</th>
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<tr>
<td>08:30 - 09:10</td>
<td>Dynamics of a colloidal glass</td>
<td>Barbara Ruzicka - ISC-CNR, Sapienza Università, Roma, Italy</td>
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<td>09:10 - 09:30</td>
<td>Anisotropic De Gennes narrowing in confined fluids</td>
<td>Yuriy Chushkin – ESRF, Grenoble, France</td>
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<td>09:30 - 09:50</td>
<td>Structure beyond pair correlations: Higher-order correlation functions for soft matter systems</td>
<td>Felix Lehmkühler – DESY, Hamburg, Germany</td>
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<td>09:50 - 10:10</td>
<td>Structural origin of the anomalous dynamics of metallic glasses</td>
<td>Beatrice Ruta – ESRF, Grenoble, France</td>
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<td>10:10 - 10:30</td>
<td>New pixel array detector techniques for X-ray photon correlation spectroscopy experiments</td>
<td>Eric Dufresne - Argonne National Laboratory, Lemont, IL, USA</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Coffee break</td>
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#### Session VIII - Holographic methods
Chairperson: N. Jaouen

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<tr>
<td>11:00 - 11:40</td>
<td>Time-resolved holographic X-ray imaging of magnetic nanostructures</td>
<td>Bastian Pfau - Max-Born-Institut, Berlin, Germany</td>
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<tr>
<td>11:40 - 12:00</td>
<td>Probing magnetization dynamics by time-resolved X-ray holography with extended references</td>
<td>Feodor Ogrin – University of Exeter, UK</td>
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<td>12:00 - 12:20</td>
<td>X-ray holographic imaging of magnetic domains at the Sextants beamline of the Soleil Synchrotron</td>
<td>Horia Popescu – Synchrotron Soleil, Gif-sur-Yvette, France</td>
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<td>12:20 - 13:30</td>
<td>Lunch</td>
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#### Session IX - Methods
Chairperson: I. Vartaniants

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<tr>
<td>13:30 - 14:10</td>
<td>High throughput nanoscale coherent x-ray imaging</td>
<td>Stefano Marchesini - Lawrence Berkeley National Laboratory, Berkeley, CA USA</td>
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<td>14:10 - 14:30</td>
<td>Near field probe retrieval and imaging at partial coherence conditions</td>
<td>Johannes Hagemann - Georg August University Göttingen, Germany</td>
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<td>14:30 - 14:50</td>
<td>Phase of the transmitted wave in the dynamical theory and quasi-kinematical approximation</td>
<td>Oleg Gorobtsov - DESY, Hamburg, Germany and Akademika Kurchatova, Moscow, Russia</td>
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<td>14:50 - 15:00</td>
<td>Break</td>
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Session X - CDI
Chairperson: H. Kim

15:00 - 15:40 Structural X-ray studies of nanostructures using Bragg CDI at the ID01 beamline
Marie-Ingrid Richard – Aix-Marseille Université and ESRF, Grenoble, France

15:40 - 16:00 Imaging of the quantum well in core-shell-shell nanowires
Arman Davtyan - University of Siegen, Germany

16:00 - 16:20 Quantitative interior ptychographic nanotomography
Manuel Guizar Sicairos - Paul Scherrer Institut, Villigen, Switzerland

16:20 - 16:50 Coffee break

16:50 - 19:00 Poster Session II

20:00 Conference Dinner at Saint-Malo

Friday, June 10th

Session XI - CDI
Chairperson: O. Thomas

08:30 - 09:10 Frontiers of X-ray science developed with coherent X-rays of SACLA
Makina Yabashi - RIKEN SPring-8 Center, Hyogo, Japan

09:10 - 09:30 Massive faulting of gold nanocrystals upon alloying with iron
Ana Katrina Estandarte - University College London, and Research Complex at Harwell, Didcot, UK

09:30 - 09:50 On the origin of biomimetic CaCO3 complex morphologies
Thomas Beuvier - ESRF, Grenoble, France

09:50 - 10:10 X-ray coherent diffractive imaging of defects in bio-photonic crystals inside butterfly wing scales
Andrej Singer – University of California-San Diego, La Jolla, USA

10:10 - 10:30 Coherent Bragg imaging of crystal defects during in situ indentation
Maxime Dupraz – SIMaP, Grenoble, France and Paul Scherrer Institut, Villigen, Switzerland

10:30 - 11:00 Coffee break

Session XII - Ptychography
Chairperson: F. Berenguer

11:00 - 11:40 Applications of X-ray ptychography at the Swiss Light Source
Ana Diaz - Paul Scherrer Institut, Villigen, Switzerland

11:40 - 12:00 X-ray ptychography: Fast, cold, colorful, and sharp
Chris Jacobsen - Northwestern University, Evanston IL and Argonne National Laboratory, Argonne IL, USA

12:00 - 12:20 Dark-field X-ray ptychography: High-resolution imaging of weak-phase objects
Nicolas Burdet - RIKEN SPring-8 Center, Hyogo, Japan

12:20 - 12:30 Conclusion