

Tuesday, 12 September 2017

08:15-09:00	Registration
08:50-09:00	Welcome Words (ETH HG E3)
Session: Sources and Metrology (ETH HG E3) -- Chair: M. Stampanoni (ETH/PSI)	
09:00-09:30	Biomedical X-ray imaging at the Munich Compact Light Source (INVITED) Martin Dierolf, <i>Chair of Biomedical Physics, Technical University of Munich, Germany</i>
09:30-09:50	Development of single-shot wave front sensor based on 2D phase gratings for SPB/SFX instrument at European XFEL Patrick Vagovic, <i>Center for Free-Electron Laser Science, DESY, Germany</i>
09:50-10:10	Wavefront metrology with a grating interferometer – Inspection of refractive X-ray optics Frieder Koch, <i>Laboratory of Micro and Nanotechnology, Paul Scherrer Institut, Switzerland</i>
10:10-10:30	Implementation of a 3D full Monte Carlo simulation tool for grating based imaging systems Stefan Tessarini, <i>ETH Zurich and Inselspital Bern, Switzerland</i>
10:30-11:00	Coffee break (Foyer E Nord)
Session: Fabrication Methods (ETH HG E3) -- Chair: C. David (PSI)	
11:00-11:30	X-ray gratings for grating-based x-ray DPCI fabricated using the deep x-ray lithography process: state of the art (INVITED) Pascal Meyer, <i>Karlsruhe Institute of Technology, Germany</i>
11:30-11:50	Chemical etching of silicon by nanostructured metal catalyst for fabrication of high aspect ratio gratings Lucia Romano, <i>ETH Zurich and Paul Scherrer Institut, Switzerland</i>
11:50-12:10	Artifact analysis of tiled X-ray gratings for large field of view imaging systems Tobias Schröter (*), <i>Institute of Microstructure Technology, Germany</i>
12:10-12:30	Precision Alignment of Multiple Analyzer Gratings for High Energy X-Ray Phase Contrast Imaging Andrew Hollowell, <i>Sandia National Laboratories, Albuquerque, NM, USA</i>
12:30 – 13:30	Lunch break (on your own)
Session: Instrumentation 1 (ETH HG E3) -- Chair: H. Wang (DLS)	
13:30-14:00	A polychromatic far field interferometer for multi-contrast x-ray imaging (INVITED) Houxun Miao, <i>National Heart, Lung, and Blood Institute/National Institutes of Health, USA</i>
14:00-14:20	Compact X-ray phase-CT microscope with high spatial resolution Hidekazu Takano, <i>IMRAM, Tohoku University, Japan</i>
14:20-14:40	Towards High Sensitivity Laboratory X-ray Phase Contrast Tomography for Improved Pathology Joan Vila-Comamala, <i>ETH Zurich and Paul Scherrer Institut, Villigen PSI, Switzerland</i>
14:40-15:00	Dynamical Propagation-based Phase-Contrast X-ray Imaging at a Compact Light Source Regine Gradl, <i>Chair of Biomedical Physics, Technical University of Munich, Germany</i>
15:00-15:30	Coffee break (Foyer E Nord)
Session: Materials Science 1 (ETH HG E3) -- Chair: V. Revol (CSEM)	
15:30-16:00	Challenges for grating interferometer X-ray computed tomography for applications in materials science (INVITED) Johann Kastner, <i>Upper Austria University of Applied Sciences, Wels, Austria</i>
16:00-16:20	Imaging water transport in cement-based materials with gratings: multi-contrast modalities from synchrotron radiation to laboratory-scale Fei Yang, <i>ETH Zurich, Switzerland</i>
16:20-16:40	Gratings-based x-ray imaging for explosives detection: design considerations Erin A. Miller, <i>Signature Science and Technology Division, Pacific Northwest National Laboratory, Richland, WA, USA</i>
16:40-17:00	Quantitative visualization of the magnetic induced phase shift with polarized neutron grating interferometry Jacopo Valsecchi, <i>Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, Switzerland</i>

Wednesday, 13 September 2017

Session: Instrumentation 2 (ETH HG E3) -- Chair: A. Momose (Tohoku University)	
09:00-09:30	Developments in X-ray grating interferometry: directionality, tunability and flux efficiency (INVITED) Matias Kagias (*), <i>ETH Zurich and Paul Scherrer Institut, Switzerland</i>
09:30-09:50	Helical X-ray Vector Radiography Yash Sharma, <i>Chair of Biomedical Physics, Technical University of Munich, Germany</i>
09:50-10:10	X-ray phase-contrast imaging and metrology using periodic and random wavefront modulators Marie-Christine Zdora, <i>Diamond Light Source, Didcot, United Kingdom</i>
10:10-10:30	A multi-aperture analyser for planar and three-dimensional X-ray phase-contrast imaging with edge illumination Marco Endrizzi, <i>University College London, United Kingdom</i>
10:30-11:00	Coffee break (Foyer E Nord)
Session: Signal Retrieval (ETH HG E3) -- Chair: A. Olivo (UCL)	
11:00-11:30	Advanced X-ray imaging and metrology with speckle based technique (INVITED) Hongchang Wang, <i>Diamond Light Source, Didcot, United Kingdom</i>
11:30-11:50	Is a High Sensitivity Interferometer Always Good for a Grating-based Differential Phase Contrast Imaging System? Xu Ji, <i>University of Wisconsin-Madison, USA</i>
11:50-12:10	Quantitative sub-pixel imaging with small angle x-ray scattering Peter Modregger, <i>University College London, United Kingdom</i>
12:10-12:30	Grating Position Estimation for Grating-based Computed Tomography Maximilian von Teuffenbach, <i>Chair of Biomedical Physics and School of Bioengineering, Technical University of Munich, Germany</i>
12:30-14:30	Lunch break and Poster session (Foyer D Nord and E Nord)
14:35-15:30	Transfer to PSI (Departure from ETH-Link Bus-stop)
15:30-15:45	Gathering at PSI (PSI Campus)
15:45-18:00	Guided tour of PSI (PSI Campus – SLS/SINQ/SwissFEL)
18:00-22:30	Apéro and Conference Dinner (PSI Restaurant OASE)
22:30-23:30	Transfer to Zurich (Bus leaving from OASE)

Thursday, 14 September 2017

Session: Clinical Applications 1 (ETH HG E3) -- Chair: K. Matsuo (Keio University)	
09:00-09:30	Challenges in Breast Imaging and Opportunities for Gratings Interferometry (INVITED) Rahel A. Kubik-Huch, <i>Kantonsspital Baden and University of Zurich, Switzerland</i>
09:30-10:00	X-ray dark-field lung imaging - from bench to bedside (INVITED) Alexander A. Fingerle, <i>Technical University Munich, Germany</i>
10:00-10:20	Implementation of a full-field-of-view grating-based phase-contrast mammography clinical investigational device Carolina Arboleda Clavijo (*), <i>ETH Zurich and Paul Scherrer Institut, Switzerland</i>
10:20-10:40	First in-vivo x-ray dark-field chest radiography: A feasibility study in a living pig Konstantin Willer (*), <i>Chair of Biomedical Physics, Technical University Munich, Germany</i>
10:40-11:00	Coffee break (Foyer E Nord)
Session: Clinical Applications 2 (ETH HG E3) -- Chair: R. Kubik-Huch (KSB)	
11:00-11:30	Developmental bone biology inspired by interferometric x-ray phase imaging (INVITED) Koichi Matsuo, <i>Keio University School of Medicine, Japan</i>
11:30-11:50	First results from an x-ray dark field breast tomosynthesis prototype system Ke Lim, <i>University of Wisconsin-Madison, USA</i>
11:50-12:10	Talbot-Lau Radiography Measurement of a Human Knee at 70kVp Florian Horn, <i>Friedrich-Alexander-University Erlangen-Nuremberg, Germany</i>
12:10-12:30	Synchrotron radiation based single and double grating phase microtomography Peter Thalmann, <i>University of Basel, Switzerland</i>
12:30-13:30	Lunch break (on you own)
Session: Instrumentation 3 (ETH HG E3) -- Chair: K. Li (University of Wisconsin)	
13:30-14:00	Development of X-ray phase scanner based on Talbot-Lau interferometry (INVITED) Atsushi Momose, <i>Tohoku University, Japan</i>
14:00-14:20	Quantitative comparison between grating- and speckle-based x-ray phase-contrast imaging Tunhe Zhou, <i>Diamond Light Source, Didcot, United Kingdom</i>
14:20-14:40	X-ray Phase Contrast Imaging using a Microfocus X-ray source in Conjunction with Amplitude Grating and SOI Pixel Detector Ryo Hosono, <i>Graduate School of Engineering, Osaka University, Japan</i>
14:40-15:00	Energy resolved high resolution direct conversion detector applied to G2-less grating interferometry Anna Bergamaschi, <i>Paul Scherrer Institut, Switzerland</i>
15:00-15:30	Coffee break (Foyer E Nord)
Session: Materials Science 2 (ETH HG E3) – Chair: F. Pfeiffer (TUM)	
15:30-16:00	Sub-pixel correlation length neutron imaging: Spatially resolved scattering information of microstructures on a macroscopic scale (INVITED) Ralph Patrick Harti, <i>Paul Scherrer Institut, Switzerland</i>
16:00-16:20	Measuring water diffusion in porous materials with high-energy grating interferometry and CdTe detectors Matteo Abis, <i>Paul Scherrer Institut, Switzerland</i>
16:20-16:40	Visualization of the interface between titanium screws and synthetic foam structure using phase-contrast imaging Sascha Senck, <i>Upper Austria University of Applied Sciences, Austria</i>
16:40-17:00	Talbot-Lau X-Ray Deflectometry with Flash X-Ray Sources for Density Measurements in Dynamic Experiments Daniel Clayton, <i>National Security Technologies, LLC, Los Alamos, USA</i>

Friday, 15 September 2017

Session: Instrumentation 4 (ETH HG E3) -- Chair: Z. Wang (ETH/PSI)	
09:00-09:30	Recent advancements in edge-illumination x-ray phase contrast imaging and comparison of its basic principles vs. grating interferometry (INVITED) <i>Alessandro Olivo, University College London, United Kingdom</i>
09:30-09:50	Fast and low-dose implementations of edge illumination X-ray phase-contrast imaging <i>Paul Claude Diemoz, University College London, United Kingdom</i>
09:50-10:10	Perspectives of quantitative neutron time-of-flight dark-field imaging <i>Markus Strobl, Paul Scherrer Institut, Switzerland</i>
10:10-10:30	Arising problems when stepping towards quantitative neutron grating interferometry <i>Tobias Neuwirth, Heinz Maier-Leibnitz Zentrum, Technical University Munich, Germany</i>
10:30-11:00	Coffee break (Foyer E Nord)
Session: Industrial Applications (ETH HG E3) -- Chair: C. Grünzweig (PSI)	
11:00-11:30	Industrial application of X-ray Talbot-Lau grating interferometry in aeronautics and aerospace (INVITED) <i>Vincent Revol, CSEM Centre Suisse D'Electronique et Microtechnique, Switzerland</i>
11:30-11:50	Investigations of bulk magnetic domain formations due to laser scribing of electrical steel by neutron dark-field imaging <i>Peter Rauscher, Fraunhofer IWS, Germany</i>
11:50-12:10	Development of high speed and wide FOV X-ray phase scanner <i>Masashi Kageyama, Rigaku Corporation, Japan</i>
12:10-12:30	X-ray Dark-Field Imaging of Catalyst layer in Fuel cells <i>Amogha Pandeshwar, Paul Scherrer Institut, Switzerland</i>
12:30-13:00	Best Poster Prize and William H. F. Talbot Award Ceremony
13:00-13:15	Presentation XNPIG2019

(*) Nominee for the William H. F. Talbot Award.