

| Sunday 14th August |                                  |
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| 16:00 - 18:00      | Registration & Welcome Reception |

| Monday 15th August            |  |
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| 8:30 - 9:00                   | Registration & Information with Coffee & Tea   |
| Chair: Janos Kirz<br>Room: L1 |  |
| Mon1: Introduction            |  |
| 9:00 - 9:15                   | Welcome and Opening Remarks  |
| 9:15 - 09:45                  | Andrew Harrison - Microscopies at Diamond - DLS, UK  |
| 09:45 - 10:30                 | Lisa Miller - What the X-Ray Microscope has taught us about Alzheimer's Disease - BNL, USA |
| 10:30 - 11:00                 | Coffee & Tea   |

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| Chair: Günter Schmahl<br>Room: L1 |   |
| Mon2: New Sources                 |   |
| 11:00 - 11:30                     | Yngve Cerenius - MAX IV: 55 days after inauguration - Lund University, Sweden   |
| 11:30 - 11:50                     | Martin Dierolf - The Munich Compact Light Source: A laboratory-scale synchrotron for bio-medical applications - Technical University of Munich, Germany |
| 11:50 - 12:10                     | Björn Hansson - Liquid-metal-jet and ultra-high resolution x-ray tube technology including microscopy applications - Excillum, Stockholm, Sweden        |
| 12:10 - 12:30                     | Poster Talks (2 mins each)  |
| 12:30 - 13:40                     | Lunch, Exhibition & Posters   |

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| Mon3a: Optics & Instrumentation I<br>Chair: Christian David<br>Room: L1 | Mon3b: Bioimaging I<br>Chair: Xiaojing Huang<br>Room: L2 |
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| 13:40 - 14:00 | Hirokatsu Yumoto - 100 nm x-ray focusing with ellipsoidal mirrors - Spring 8, Japan  | Florin Fus - Nanoprobe with cryogenic capabilities: Opening new perspectives in biological nanochemical imaging - ESRF, France   |
| 14:00 - 14:20 | Qlushi Huang - High efficiency and high resolution multilayer coated blazed gratings for advanced light source applications - School of Physics Science and Engineering, Shanghai, China | Konstantin Andrianov - Scanning transmission X-ray Microscopy with X-ray fluorescence detection at the XUV beamline P04, Petra III, DESY - Koblenz University, Germany |
| 14:20 - 14:40 | Frank Seiboth - Aberration correction for X-ray optics - TU Dresden, Germany   | Chun-Chieh Wang - Complex internal structure of dinosaur teeth revealed using synchrotron transmission X-ray microscopy - NSRRC, Taiwan                                |
| 14:40 - 15:00 | Felix Marschall - Systematic efficiency study of line doubled ultra-high resolution zone plates - PSI, CH  | Martin Krenkel, Phase contrast tomography of mouse lung - from whole animal to tissue and to the sub-cellular level - Göttingen University, Germany                    |
| 15:00 - 15:30 | Coffee & Tea, Exhibition & Posters   |  |

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| Chair: Graeme Morrison<br>Room: L1 |  |
| Mon4: Coherent imaging & Optics    |  |
| 15:30 - 16:00                      | Kazuto Yamauchi - Advanced mirror-based optics for full-field imaging and zoom condenser systems - Osaka University, Japan |
| 16:00 - 16:30                      | Marianne Liebi - Small-angle scattering tensor tomography: Orientation analysis of nanostructure in 3D - PSI, CH           |
| 16:30 - 17:00                      | Hongchang Wang - X-ray multimodal imaging by using unidirectional speckle scanning technique - DLS, UK                     |
| 17:00 - 19:00                      | Poster Session   |

| Tuesday 16th August                |   |
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| 8:30 - 17:30                       | Registration and information desk open  |
| Chair: Pierre Thibault<br>Room: L1 |   |
| Tue1: Plenary I                    |   |
| 9:00 - 9:45                        | Manuel Guizar-Sicarios - 3D ptychography for state-of-the-art nanoscale imaging - PSI, CH |
| 9:45 - 10:15                       | Will Chueh - Electrochemical Ion Insertion at the Mesoscale - Stanford University, USA    |
| 10:15 - 10:45                      | XRM2020 Host presentations  |
| 10:45 - 11:05                      | Poster Talks (2 min each)   |
| 11:05 - 11:35                      | Coffee & Tea  |

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| Tue2a: Energy I<br>Chair: Gerd Schneider<br>Room: L1 | Tue2b: Multimodal techniques and applications<br>Chair: Ian McNulty<br>Room: L2   |  |
| 11:35 - 11:55  | María Asensio - Surveying electronic bandstructure of smart materials revealed by nano-ARPES - Soleil, France   | Haruo Mizutani - X-ray brain architectonics for mammalian connectome - Harvard University, USA                     |
| 11:55 - 12:15  | Donal Finegan - Understanding battery degradation and failure: A high speed X-ray CT approach - University College London, UK                         | Christoph Hagen - Wrap it up nicely - how herpes virus sneaks out of the host cell nucleus - Oxford University, UK |
| 12:15 - 12:35  | Andrea Sorrentino - Visualizing peroxide, superoxide and secondary discharge products of LiO <sub>2</sub> batteries at Mistral beamline - ALBA, Spain | Christoph Pratsch, Low-dose soft X-ray 3D nanoscale imaging by FIB-SXM - Helmholtz Centre Berlin, Germany          |

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| 12:15 - 12:35 | Poster Talks (2 min each)   |
| 12:35 - 14:35 | Lunch, Exhibition & Posters |
| 12:35 - 13:40 | Lunch, Exhibition & Posters |

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| Tue3a: Optics & Instrumentation II<br>Chair: Evgeny Nazaretki<br>Room: L1 | Tue3b: Bioimaging II<br>Chair: Marco Stamanoni<br>Room: L2 |
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| 13:40 - 14:00 | Adam Leontowich - Cryo scanning soft X-ray microscope optimised for spectro-tomography - CLS, Canada                      | Sergey Kapishnikov - Unravelling the process of heme detoxification and malaria pigment formation in red blood cells - Helmholtz Centre Berlin, Germany                                       |
| 14:00 - 14:20 | Joan Vila-Comamala - Full-field transmission X-ray microscopy using a photon pixel detector - ETH Zürich, CH              | Xiaohui Zhu - Biominalisation of magnetotactic bacteria studied by soft X-ray scanning microscopy - McMaster University, Canada   |
| 14:20 - 14:40 | Hanfei Yan - Hard-X-ray multimodal imaging with well-below 20nm spatial resolution - BNL, USA                             | James Everett - X-Ray spectroscopic evidence of redox-active iron formation following the interaction of ferritin and the Alzheimer's disease peptide $\beta$ -amyloid - Keele University, UK |
| 14:40 - 15:00 | Matias Kagias - Accessing 2D-omnidirectional X-ray scattering sensitivity with circular unit cell phase grating - PSI, CH | Mareike Töpperwien - (Nanoscale) 3D virtual histology of neuronal tissue - Göttingen University, Germany  |
| 15:00 - 15:30 | Coffee & Tea, Exhibition & Posters  |   |

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| Chair: Paul Quinn Room: L1           |   | Chair: Benjamin Watts Room: L2 |   |
| Tue4a: Data acquisition and analysis |   | Tue4b: In-situ and In-operando |   |
| 15:30 - 15:50                        | Mirna Lerotic - Compressed sensing for tomographic reconstruction of sparse projection X-ray spectroscopic data - 2nd Look Consulting, Hongkong | 15:30 - 15:50                  | Stephen Price - Chemical imaging of catalysts under operating conditions - DLS, UK  |
| 15:50 - 16:10                        | Gavin Taylor - Virtually dissecting insect eyes - Lund University, Sweden   | 15:50 - 16:10                  | Thomas Sheppard - In-situ X-ray microscopy in catalysis: direct synthesis of DME from syngas on a core-shell structure - KIT, Germany |
| 16:10 - 16:30                        | Juana Rudati - Rapid integrated circuit inspection for reliability and security inspection - Stony Brook, USA                                   | 16:10 - 16:30                  | Claudia Stahl - Scanning Magnetic X-Ray Microscopy at Low Temperatures - MPI Stuttgart, Germany                                       |
| 16:30 - 16:50                        | Antoine Bergamaschi - MMX-i: A data-processing software for multi-modal X-ray imaging and tomography - Synchrotron Soleil, France               | 16:30 - 16:50                  | Kamaljit Singh - Pore-scale investigations of two-phase fluid flow in carbonate rocks - Imperial College London, UK                   |
| 17:00 - 19:00                        | Poster Session  |                                |   |

| Wednesday 17th August           |  |
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| 08:30 - 13:00                   | Registration and information desk open   |
| Chair: Mau-Tsu Tang<br>Room: L1 |  |
| Wed1: Plenary II                |  |
| 9:00 - 9:45                     | Marine Cotte - Examining works of art with synchrotron-based micro-probes - ESRF, France                               |
| 9:45 - 10:15                    | Simon Redfern - STXM and PEEM of marine calcifiers: How plankton record past climate change - Cambridge University, UK |
| 10:15 - 10:45                   | Martin de Jonge - Event by Event: Extreme Fractionation in Scanning X Ray Fluorescence - Australian Source, AU         |
| 10:45 - 11:05                   | Chris Jacobsen - Special event presentation - ANL/Northwestern University, USA   |
| 11:05-11:35                     | Conference Photo, Coffee & Tea   |

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| Wed2a: Diffraction imaging - Applications<br>Chair: Karina Thanell<br>Room: L1 | Wed2b: Tomography<br>Room: L2<br>Chair: Timm Weitkamp<br>Room: L2  |  |
| 11:35 - 11:55  | Makoto Hirose - High-resolution imaging XAFS using X-ray ptychography - Osaka University, Japan  | Christian Schlepütz - 4D tomography at sustained kHz frame rates: Introducing GigaFROST - PSI, CH                      |
| 11:55 - 12:15  | Friedrich Prade - Revealing water transport in microporous systems with grating based X-ray dark-field tomography - TU Munich, Germany | Kadri-Aditya Mohan - TIMBIR-A method for high temporal resolution tomographic reconstructions - Purdue University, USA |
| 12:15 - 12:35  | Poster Talks (2 min each)  |  |
| 12:35 - 14:35  | Lunch, Exhibition & Posters  |  |
| Free afternoon   |  |  |

| Thursday 18th August              |   |
|-----------------------------------|---|
| 08:30 - 17:30                     | Registration and information desk open  |
| Chair: David Paterson<br>Room: L1 |   |
| Thu1: Plenary III                 |   |
| 9:00 - 9:45                       | James McNally - Biological applications and future developments in cryo soft X-ray microscopy - Helmholtz Centre Berlin - Germany |
| 9:45 - 10:15                      | Eva Pereiro - Increasing spatial resolution in full field soft X-ray nanotomography of cells - ALBA, Spain                        |
| 10:15 - 10:45                     | Anne l'Hullier - High-order harmonic generation sources and applications - Lund University, Sweden                                |
| 10:45 - 11:15                     | Coffee & Tea  |

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| Thu 2a: Energy II<br>Chair: Luca Gregoratt<br>Room: L1 | Thu2b: Weak contrast<br>Chair: Liz Duke<br>Room: L2  |  |
| 11:15 - 11:35  | Michael Stükelberger - XRF meets XBIC: In-situ and operando measurements from crystal growth to solar cell performance - Arizona State University, USA | Junjing Deng - Fly-scan ptychography and fluorescence imaging of frozen-hydrated samples - Northwestern University, USA                    |
| 11:35 - 11:55  | Felix Hofmann - Coherent X-ray Measurements of the Full, Three-Dimensional Lattice Strain Tensor in Ion-Implanted Nano-Crystals - Oxford, UK           | Karolina Stachnik - Towards multimodal biological imaging using simultaneous ptychography and X-ray fluorescence - DESY Hamburg, Germany   |
| 11:55 - 12:15  | Hendrik Ohldag - Time-resolved magnetic microscopy of spin current driven magnetization dynamics - Stanford University, USA                            | Yuki Takayama - Cryogenic coherent diffraction imaging of biological samples with synchrotron and X-ray laser - University of Hyogo, Japan |
| 12:15 12:35  | Lucia Aballe - Direct imaging of the magnetoelastic on the subnanosecond timescale - ALBA, Spain   | Ryan Tappero - Can cryo-cooling mitigate chemical changes for hydrated samples? - BNL, USA   |
| 12:35 - 13:40  | Lunch, Exhibition & Posters  |  |

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| Thu3a: Diffraction Imaging - Techniques<br>Chair: Yong Chu<br>Room: L1 | Thu3b: Elemental contrast and spectromicroscopy<br>Chair: Burkhard Kaulich<br>Room: L2 |
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| 13:40 - 14:00 | Esther Tsai - Optimization based ptychography with extended depth of field - PSI, CH                    | David Shapiro - Near Edge X-ray Refraction Fine Structure Microscopy - ALS, USA  |
| 14:00 - 14:20 | Ruslan Kurta - Multiple wavelength resonant fluctuation X-ray scattering - European XFEL, Germany       | Benedikt Rösner - Microspectroscopic Insight into the Resistivity Switching of Individual Ag-TCNQ Nanocrystals - PSI, CH             |
| 14:20 - 14:40 | Jan Geilhufe - The time-resolved X-ray imaging using Fourier-transform holography - MBI Berlin, Germany | Christopher Egan - Spectroscopic X-ray tomography: 3D chemical imaging in the laboratory - Manchester University, UK                 |
| 14:40 - 15:00 | Martin Holt - Three dimensional structural microscopy by single angle Bragg ptychography - ANL, USA     | David Paterson - Megapixels per minute: Chemical imaging with fast X-ray fluorescence microscopy - Australian Synchrotron, Australia |
| 15:00 - 15:30 | Coffee & Tea, Exhibition & Posters  |  |

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| Chair: Stephen Urquhart<br>Room: L1 |   |
| Thu4: Plenary IV                    |   |
| 15:30 - 16:00                       | Christopher Russo - Determining physical limits of electron cryomicroscopy for structural biology - MRC Laboratory of Molecular Biology Cambridge, UK |
| 16:00 - 16:30                       | Andrew Ulvestad - 3D X-ray Imaging of Defect Dynamics in Nanostructured Materials - ANL, USA  |
| 16:30 - 16:50                       | Werner-Meyer Ilse Award   |
| 16:45 - 17:05                       | Poster Prize Presentation   |
| 19:30 - 22:30                       | Conference Dinner - Oxford Town Hall  |

| Friday 19th August            |   |
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| 08:30 - 12:00                 | Registration and information desk open  |
| Chair: Hans Hertz<br>Room: L1 |   |
| Fri1: Plenary V               |   |
| 9:00 - 9:30                   | Andreas Schropp - Magnified X-Ray Phase-Contrast Imaging at the LCLS - DESY Hamburg, Germany                |
| 9:30 - 10:00                  | Yeukuang Hwu - Full-field imaging with synchrotron and FEL X-rays - Institute of Physics, Taiwan            |
| 10:00 - 10:30                 | Johanna Weker - In-situ X-ray microscopy and spectromicroscopy during electrochemical reactions - SLAC, USA |
| 10:30 - 10:50                 | Coffee & Tea  |

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| Fri2: Closing session<br>Chair: Chris Jacobsen<br>Room: L1 |   |
| 10:50 - 11:10  | Ian McNulty - Conference Summary - ANL, USA                                     |
| 11:10 - 11:30  | Henry Chapman, Future perspectives for X-ray microscopy - DESY Hamburg, Germany |
| 11:30 - 11:50  | Update XRM 2018, Vote results XRM 2020 & Farewell.                              |
| 12:00 - 16:00  | Travel to Diamond, Lunch and Tours  |