



# EBS workshop on Sample Modulation by High Photon Densities: Desired and Undesired Effects

ESRF, Grenoble, France

ESRF auditorium

## PROGRAMME

Wednesday 11<sup>th</sup> December 2019

13:00 – 14:00 Registration in the ESRF Central Building entrance hall

Session 1 – Chair person: A. Popov

14:00 – 14:30 Welcome/Introduction **J. Susini**  
*ESRF Director of Research*

14:30 – 15:00 Radiation Damage in Macromolecular Crystallography:  
What metrics are useful? **E. Garman**  
*University of Oxford, UK*

15:00 – 15:30 Serial Data Collection Approaches and Dose Slicing in  
Protein Crystallography **I. Tews**  
*Institute for Life Sciences,  
Southampton, UK*

15:30 – 16:00 Mitigation of Radiation Damage in Biological SAXS on  
High Brilliance Synchrotrons **M. Schroer**  
*EMBL Hamburg, Germany*

16:00 – 16:30 Coffee

Session 2 – Chair person: P. Glatzel

16:30 – 17:00 Large field-of-view scanning SAXS of mammalian cells **S. Köster**  
*Georg-August University of  
Göttingen, Germany*

17:00 – 17:20 Cu reduction in X-Ray Absorption Spectroscopy  
Experiments **S. Morante**  
*Universita di Roma Tor Vergata,  
Rome, Italy*

17:20 – 17:40 How to tame your beamline: Unwanted effects of X-rays  
in surface grafted copper (II) organometallics and copper  
exchanged zeolites, how they manifest, and what might  
be done about them? **M. Newton**  
*ETH Zürich, Switzerland*

17:40 – 18:00 X-ray induced metal-to-metal electron transfer in a  
cyanido-bridged [Fe<sub>2</sub>Co<sub>2</sub>] square molecules **A. Rogalev**  
*ESRF*

18:00 – 21:00 Poster Session and buffet dinner



## Thursday 12th December 2019

### Session 1 – Chair person: A. Rogalev

09:00 – 09:30	Sample Modulation in Core Level Spectroscopies	<b>S. Schroeder</b> <i>University of Leeds, UK</i>
09:30 – 10:00	Playing music by throwing a piano down the stairs: X-Ray Spectroscopy on Luminescent Materials	<b>L. Amidani</b> <i>HZ DresdenRossendorf, Germany</i>
10:00 – 10:20	Beam-induced effects on surfaces and interfaces	<b>H. Reichert</b> <i>Director of Research, ESRF</i>
10:20 – 10:40	Decoupling beam Damage from electrochemical degradation in hydrogen fuel cells using Cerrelative Spectromicroscopy	<b>I. Martens</b> <i>ESRF</i>
10:40 – 11:10	Coffee	

### Session 2 – Chair person: B. Ruta

11:10 – 11:40	Monitoring and Mitigating Radiation Damage during Synchrotron Examination of Ancient Materials	<b>L. Bertrand</b> <i>IPANEMA/Synchrotron Soleil, Gif-sur-Yvette, France</i>
11:40 – 12:00	Radiation Damage of Paint Samples during $\mu$ XRD Mapping. Follow-Up with $\mu$ FTIR Mapping	<b>M. Cotte</b> <i>ESRF</i>
12:00 – 12:20	Effects of irradiation during tomography on ancient DNA: understanding the problem and bringing solutions.	<b>P. Tafforeau</b> <i>ESRF</i>
12:20 – 14:00	Lunch	

### Session 3 – Chair person: T. Narayanan

14:00 – 14:30	From small molecules to proteins, from UHV to solution and from interfaces to bulk studies: a Synchrotron Field Report	<b>F. Schreiber</b> <i>Universität Tübingen, Germany</i>
14:30 – 15:00	Some strategies to keep under control radiation damage in Soft Matter	<b>L. Cristofolini</b> <i>Universita di Parma, Italy</i>
15:00 – 15:30	X-Ray diffraction from muscle: Radiation Damage and how to deal with it	<b>M. Reconditi</b> <i>University of Florence, Italy</i>
15:30 – 16:00	Coffee	

### Session 4 – Chair person: M. Cotte

16:00 – 16:30	Tuning the functional properties of Oxides by means of High-Power X-Ray Nanobeams	<b>V. Bonino</b> <i>Univ. degli Studi di Torino, Italy</i>
16:30 – 17:00	X-Ray Induced Dynamics in Oxide Glasses: A Desired or Undesired Effect?	<b>B. Ruta</b> <i>UCB Lyon 1, France</i>
17:00 – 17:20	Solution to Beam Induced Dynamics in Oxide Glasses measured by X-Ray Photon Correlation Spectroscopy	<b>Y. Chushkin</b> <i>ESRF</i>
17:20 – 17:40	Avoiding Multiphoton Artefacts in Time-Resolved Pump Probe Experiments	<b>M. Grünbein</b> <i>MPI for Medical Research, Heidelberg, Germany</i>
17:40 – 18:00	Single-Event-Effects induced by pulsed X-rays in microelectronic components for space applications	<b>E.T. Capria</b> <i>ESRF</i>
18:00 – 18:30	Discussion	
18:30 – 21:00	Aperitif & Workshop Dinner	



## Friday 13th December 2019

### Session 1 – Chair person: M. Burghammer

09:00 – 09:30	Resolution and Dose Dependence of Radiation Damage in Biomolecular Systems	<b>R. Thorne</b> <i>Cornell University, USA</i>
09:30 – 10:00	Radiation damage in serial synchrotron crystallography at cryo- and room temperatures	<b>M. Weik</b> <i>IBS, Grenoble, France</i>
10:00 – 10:30	Inception of Electronic Damage of Matter by Photon-driven Post-ionization Mechanisms	<b>W. Blachucki</b> <i>Polish Academy of Sciences, Poland</i>
10:30 – 11:00	Coffee	

### Session 2 – Chair persons: all organisers

11:00 – 12:10	Discussion	
12:15 – 13:30	Lunch	
14:00	End of workshop	