Cultural and Natural Heritage
ESRF-EBS workshop
22-24 January 2020

STREAMLINE

ESRF-EBS
Extremely Brilliant Source

Wednesday 22 January

09:00-09:30	REGISTRATION FOR PARTICIPANTS ATTENDING THE INTRODUCTION (OPTIONAL)
OPTIONAL INTRODUCTION FOR NEWCOMERS	
09:30-09:35	**Welcome and introduction** (M. Cotte)
09:35-10:00	**The ESRF in a few words** (J. Susini)
10:00-10:25	**Basic principles of X-ray tomography** (P. Tafforeau)
10:25-10:45	*Coffee break*
10:45-11:10	**Basic principles of X-ray diffraction** (C. Dejoie)
11:10-11:35	**Basic principles of X-ray spectroscopy** (M. Cotte)
11:35-12:00	**Applying via peer-reviewed proposals and writing good proposals** (J. McCarthy)
11:30-12:30	REGISTRATION FOR PARTICIPANTS NOT ATTENDING THE INTRODUCTION
12:00-13:30	*Lunch at the EPN campus restaurant*
13:30-13:45	**Welcome and introduction to EBS** (F. Sette)
13:45-14:00	**Scopes and objectives of the workshop** (M. Cotte)
SESSION I – PALAEONTOLOGY I	
14:00-14:40	**10 Years of Synchrotron and Sediba** Lee BERGER, University of the Witwatersrand, Johannesburg
14:40-15:00	**Synchrotron X-ray imaging enables 3D quantification of bone microstructures across fossil and modern bird-line archosaurs** Dennis VOETEN, Department of Organismal Biology, Uppsala University
15:00-15:40	**Digging virtually into large fossils using synchrotron X-ray microtomography** Vincent FERNANDEZ, Natural History Museum, London
15:40-16:10	*Coffee break*
SESSION II - MATERIALS, PROCESSES AND CHAÎNES OPÉRATOIRES I	
16:10-16:50	**Cultural Heritage & Synchrotron Radiation: Quo Vadis?** Koen JANSSENS, Faculty of Science, University of Antwerp
16:50-17:10	**Colour Enamels in the Modernist Catalan stained glasses from Barcelona** Marti BELTRAN, University of Catalonia, Barcelona
17:10-17:30	**Complementary use of SR and neutrons for heritage study at NRC "Kurchatov institute"** Elena TERESCHENKO, National Research Centre “Kurchatov Institute”, Moscow
17:30-18:30	Poster clips
18:30-20:30	Poster session and buffet dinner (apéritif dinatoire)

Thursday 23 January

SESSION III – CONSERVATION AND ALTERATION	
09:00-09:40	**Probing the degradation mechanisms of artists' pigments by different 2D XANES-based approaches** Letizia MONICO, Universita di Perugia - ISTM
09:40-10:00	**The criticality of synchrotron techniques in developing new conservation strategies to characterise and stabilise marine archaeological artefacts** Eleanor SCHOFIELD, Mary Rose Trust, HM Naval Base, Portsmouth
10:00-10:20	**3D Visualization of the Effect of Light Aging on Orpiment Pigment Particles** Fréderique BROERS, Rijksmuseum Amsterdam, Conservation and Science, Amsterdam
10:20-10:50	*Coffee break*
SESSION IV - MATERIALS, PROCESSES AND CHAÎNES OPÉRATOIRES II	
10:50-11:30	**Structural studies of historical inorganic pigments using synchrotron radiation: capacities and future applications** Victor GONZALEZ, Science Department, Rijksmuseum, Amsterdam
11:30-11:50	**Shed light on the schematic paintings of Savoy: the use of µXRD to understand the painted wall** Emilie CHALMIN, University Savoie Mont Blanc, CNRS, EDYTEM (UMR 5204)
11:50-12:10	**Burning before painting: Synchrotron Radiation X-ray and Micro-XRF based Characterisation of rock art pigments from Karim Cave, Sangkulirang-Mangkalihat site, East Borneo, Indonesia** Moh Mualliful ILMI, Institute of Technology, Bandung
12:10-13:40	*Lunch at the EPN campus restaurant*
SESSION V - INKS AND PAPYRUS	
13:40-14:00	**Structural and spectroscopic analyses of ancient black pigments from Roman archaeological sites** Maria Cristina GAMBERINI, University of Modena, Department of Life Science
14:00-14:20	**Elephantine: Challenges and first results on papyrus research** V. LEPPER and H.-E. MAHNKE, Ägyptisches Museum und Papyrussammlung Berlin
14:20-14:40	**Retrieval of the lost literature from the Herculaneum Papyri with the XRF Microscopy** Luxi LI, Advanced Photon Source APS
SESSION VI - DEEP LEARNING	
14:40-15:00	**Visibility Enhancement of Heritage Materials Through Deep Learning** James BRUSUELAS, University of Kentucky, Computer Science Department
15:00-15:20	**Automated Segmentation of Microtomography Imaging Using Machine Learning** Johann BRIFFA, University of Malta
15:20-15:50	*Coffee break*
SESSION VII - PALAEONTOLOGY II	
15:50-16:30	**Three-dimensional virtual bone histology of early tetrapods revealed by synchrotron light** Sophie SANCHEZ, Uppsala University, Department of Organismal Biology
16:30-16:50	**A lost world in sausage-shaped packages: synchrotron microtomography of fossil droppings as a tool for investigating ancient ecosystems** Per AHLBERG, Department of Organismal Biology, Uppsala University
16:50-17:10	**X-ray Raman scattering: A hard X-ray probe for the study of cultural and natural heritage** Rafaella GEORGIOU, IPANEMA c/o synchrotron SOLEIL
Transfer to Grenoble Museum	
18:30-20:00	Social programme: General public conference & private access at the Grenoble Museum
20:00-22:00	Workshop Dinner: Patio of Grenoble Museum

Friday 24 January

TUTORIALS (2) / PRACTICAL (1)	
09:00-10:15	PyMca ROI Imaging & Phase identification / Tomography
10:15-10:45	*Coffee break*
BEAMLINES POST ESRF-UPGRADE PHASE 2	
10:45-10:50	**Introduction** (M. Cotte)
10:50-11:10	**X-ray tomography beamlines** (P. Tafforeau)
11:10-11:30	**X-ray diffraction beamlines** (C. Dejoie)
11:30-11:50	**X-ray absorption beamlines** (M. Cotte)
11:50-12:10	To be confirmed (ILL)
12:10-13:30	*Lunch at the EPN campus restaurant*
BEYOND INSTRUMENTS AND DATA COLLECTION	
13:30-13:40	**Introduction** (M. Cotte)
13:40-14:10	**Access models** (J. McCarthy)
14:10-14:25	**Proprietary research** (E. Mitchell)
14:25-14:50	**Data policy and data management** (A. Goetz)
14:50-15:30	Discussion and Conclusions
Transfer to Grenoble City Centre	
16:00-18:00	Social programme: Visit of Grenoble street art