

# Workshop on Simultaneous Combination of Spectroscopies with X-ray Absorption, Scattering and Diffraction

June 24-25<sup>th</sup>, 2010,  
Synchrotron SOLEIL  
L'Orme des Merisiers, Saint-Aubin, France

## Programme

### Thursday June 24<sup>th</sup>

09:30 - 10:15 *Registration and coffee*

10:15 - 10:25 **Welcome**  
*Valérie Briois*

10:25 - 11:15 **Plenary talk**  
Why Combining Vibrational Spectroscopy and Micro-spectroscopy with Synchrotron X-rays Based Techniques?  
*Paul Dumas*

#### **CATALYSIS SESSION 1**

**Chairperson: Paul Dumas**

11:15 - 11:45 Catalytic Solids in the Spotlights: Combining Synchrotron-radiation Techniques with Optical Spectroscopies  
*Bert M. Weckhuysen*

11:45 - 12:05 Three Years of User Operation: On Line Raman Scattering Combined with XRD and XAFS at non Ambient Conditions, Past and Future  
*Wouter Van Beek*

12:05 - 12:25 Combined DFT Modeling and Operando Techniques for Better Structure and Reactivity Understanding  
*Sylvain Cristol*

12:25 - 12:45 Co-Adsorption and Separation of CO<sub>2</sub>-CH<sub>4</sub> Mixtures in the Flexible MIL-53(Cr) MOF  
*Guillaume Clet*

12:45 - 14:00 *Lunch at SOLEIL restaurant*

#### **BIOLOGY SESSION**


**Chairperson: Andrew Thompson**

14:00 - 14:30 Incorporating Single Crystal Spectroscopy into a Macromolecular Crystallography Beamline and Exploiting X-ray Induced Luminescence of Macromolecular Crystals as a Metric for Radiation Damage  
*Arwen Pearson*

14:30 - 14:50 Correlated Single-crystal Spectroscopy and X-ray Crystallography at Beamline X26-C of the NSLS  
*Allen Orville*

14:50 - 15:10 Combining X-ray Diffraction and In-situ Optical Spectroscopy at the Swiss Light Source  
*Guillaume Pompidor*

15:10 - 15:30 Complementary Spectroscopy next to Structural Biology Beamlines of the ESRF – Cryobench v 3.0  
*Antoine Royant*

- 15:30 - 15:50 Raman-assisted X-ray Crystallography for Biomolecules at the Synchrotron  
*Philippe Carpentier*
- 15:50 - 16:30 Coffee break sponsored by Restauration Collective Casino 
- 16:30 - 19:00 Poster session, Commercial exhibitors, and Visit of SOLEIL
- 19:00 – 21:00 Buffet at SOLEIL restaurant
- 21:00 **Transfer by bus from SOLEIL to Le Guichet station and Massy-Palaiseau station and Denfert-Rochereau RER station (Paris)**

## Friday June 25<sup>th</sup>

- 09:00 – 09:50 **Plenary talk**  
UV-Visible absorption spectroscopy  
*Matthieu Refregiers*
- PHYSICS OF MATERIALS SESSION** **Chairperson: Sylvain Ravy**
- 09:50 - 10:20 Octahedra Instabilities in ABO<sub>3</sub> Perovskites: The Interest of Combining Raman and X-ray Scattering  
*Jens Kreisel*
- 10:20 - 10:40 Intercalation of Rubidium within Bundles of Carbon Nanotubes: “in situ” Coupling of XAS, Raman Spectroscopy and Conductivity Measurements  
*Laurent Alvarez*
- 10:40 - 11:00 In Situ Simultaneous Raman and High-Resolution X-ray Powder Diffraction Study of Transformations Occurring in Materials at Non-ambient Conditions  
*Marco Milanesio*
- 11:00 - 11:20 Coffee break
- 11:20 - 12:45 Round Table
- 12:45 - 14:00 Lunch at SOLEIL restaurant
- GENESIS OF NANOMATERIALS SESSION** **Chairperson: Matthieu Refregiers**
- 14:00 - 14:30 Nucleation and Growth of Nanoparticles Probed by /In Situ/ Synchrotron and Classical Spectroscopy Experiments  
*Fabienne Testard*
- 14:30 - 14:50 In-situ and Simultaneous UV-Vis/SAXS and UV-Vis/EXAFS Monitoring of ZnO Quantum Dots Formation  
*Celso Santilli*
- 14:50 - 15:10 Monitoring the Formation of Bismuth Molybdate Catalyst by Combining Synchrotron Radiation and Raman Spectroscopy  
*Chanapa Kongmark*
- 15:10 - 15:30 Early Stages of Crystallization of Complex Iron Molybdate Precursors in Levitated Droplets Monitored by Coupled X-ray Scattering and Raman Spectroscopy  
*Joerg Radnik*
- 15:30 - 15:50 Coffee break sponsored by Restauration Collective Casino 

**CATALYSIS SESSION 2****Chairperson: Virginie Moizan-Baslé**

- 15:50 - 16:10 A Combined XANES/Raman Study on Nanoparticulate  $V_2O_5$  in ZSM-5 for the Selective Oxidation of Propene  
*Katrine Lie Bøyesen*
- 16:10 - 16:30 Combining EXAFS with Complementary Techniques in Heterogeneous Catalysts Preparation  
*Xavier Carrier*
- 16:30 - 16:40 Conclusion