

Programme

Journée Sciences & Techniques SOLEIL

Lundi 02 octobre 2023 – Amphithéâtre SOLEIL

Présentations Orales 1^{ère} Partie

Horaires & Durées	Prénom & Nom - Division Groupe ou Ligne	Titre des Présentations
09h25 – 09h30	Introduction par la Direction Scientifique	

SESSION A

Chair : Andrea ZITOLLO

09h30-09h50 (20 min)	Anthony BEAUVOIS EXP-Ligne ROCK	<i>First photocatalysis experiments at ROCK: overall water splitting by Metal-Organic Framework</i>
09h50 – 10h10 (20 min)	Francisco-Jose IGUAZ-GUTIERREZ - EXP - Détecteurs	<i>DANTE: A digital pulse processor for XAFS and XRF experiments</i>
10h10 – 10h30 (20 min)	Laura HENRY EXP – Ligne PSICHE	<i>Caractérisation multi-échelles de la matière en conditions extrêmes de pression et température sur la ligne PSICHÉ : développements récents et futurs.</i>

10h30 - 10h45 : Pause-Café

SESSION B

Chair : Nicolas HUBERT

10h45 – 11h10 (25 min)	Filipe ALVES, Christer ENGBLOM, Sébastien DUCOURTIEUX, Javier PEREZ – DAI+EXP	<i>Le projet Nanoprobe sur SWING</i>
11h10 – 11h30 (20 min)	Marie Sophie DIAS-FERNANDES – EXP- Ligne LUCIA	<i>The electrocatalytic properties of porous heterofunctional materials by electrochemistry and x-ray absorption spectroscopy</i>
11h30 – 11h50 (20 min)	Yassine OUBAID EXP – Ligne CRISTAL	<i>Iron Based Chalcogenide Spin Ladder BaFe2S3</i>
11h50 – 12h10 (20 min)	Francesco PAPARONI EXP – Ligne SAMBA	<i>Tuning of the catalytic OER performances of maghemite via Ni doping - An operando XAS study</i>

12h10 – 13h30 : Pause-Déjeuner au self du restaurant d'entreprise

Présentations Orales 2^{ème} Partie

SESSION C

Chair : Nicolas BECHU

13h30 – 13h55 (25 min)	Cédric BOURGOIN DAI -Alignement Métrologie	<i>Démonstration 'live' des nouveaux instruments de mesure: bras de mesure et scanner de numérisation 3D</i>
13h55 - 14h15 (20 min)	Felix SERVANT EXP – Ligne DESIRS	<i>Statistical analysis for mass spectrometry</i>
14h15 - 14h35 (20 min)	Gwenaëlle ABEILLE DAI + EXP- ISAC	<i>PLUSS (PLateforme d'Urbanisation de Synchrotron SOLEIL) et une 1^{ere} application mise en oeuvre sur cette plateforme, l'ASE (Application Suivi des Echantillons)</i>
14h35 - 14h55 (20 min)	Beatriz BARATA EXP – Ligne ROCK	<i>XAS hyperspectral imaging: in situ monitoring of the impregnation and drying of CoMoP hydrodesulfurization catalysts</i>

14h55 - 15h10 : Pause-Café

SESSION D

Chair : Benedikt LASSALLE

15h10 - 15h30 (20 min)	Anastassiya KHAN EXP – Ligne SAMBA	<i>Unveiling the origin of improved hydrogen evolution reaction activity of novel FeMoS catalysts: an operando XAS study</i>
15h30 - 15h50 (20 min)	Zhengxuan FAN DAI – Ingénierie Mécanique	<i>Modélisation thermomécanique des chambres à vide de l'anneau de stockage Soleil II.</i>
15h50 - 16h10 (20 min)	Federico CAPONE EXP – GALAXIES	<i>Development of in operando XPS solution for the study of battery interfaces</i>
16h10 - 16h30 (20 min)	Marine FOURNIER EXP – Ligne PLEIADES	<i>Coupling a magnetic bottle time-of-flight spectrometer with a liquid micro-jet device on PLEIADES beamline</i>
16h30 - 16h45 (15 min)	Présentation des Posters (2 minutes pour chaque participant(e))	
16h45 - 16h50 (5 min)	Conclusion par Jean DAILLANT	
16h50 - 17h45	Session poster & Apéritif-cocktail + Délibération du jury	

SESSION POSTERS

«Un prix du meilleur poster sera remis uniquement pour les jeunes chercheurs (postdoctorants, thésards, ingénieurs, master)»

Auteur(s)	Divisions / Lignes	Sélectionné pour le prix du meilleur poster : oui / non	Titre des posters
Marie ANDRAE	EXP-Groupe-Detecteurs	OUI	<i>UFXC : A medium-sized photon counting pixel detector developed at SOLEIL</i>
Andrew KING	EXP-Ligne PSICHE	NON	<i>"Advanced diffraction techniques at the PSICHE beamline, Synchrotron SOLEIL"</i> A. King, N. Guignot, P. Piault, P. Chauvigne, L. Henry, Y. Le Godec, H. Proudhon, J.-P. Itié
Francesco LA PORTA	EXP-Ligne ROCK	OUI	<i>In operando characterization of Li ion battery with Raman Spectroscopy and XAS</i>
Benedikt LASSALLE	EXP-Ligne LUCIA	NON	<i>"Electrocatalytic Reduction of CO2 to Light Hydrocarbons Using Iron Phthalocyanine in a Flowing System".</i> Si-Thanh Dong, Chen Xu, Benedikt Lassalle-Kaiser
Alexandre MOUTARDIER	DAI/Diagnostics	OUI	<i>Study of visible synchrotron radiation monitor on SOLEIL Booster</i>
Angela POTET	DAI/GMI	OUI	<i>L'onduleur bi périodique, un élément d'insertion innovant pour SOLEIL II</i>
Andrew THOMPSON	EXP-Ligne PX1	NON	<i>La microscopie cryo-electronique a SOLEIL</i> Auteurs E. Larquet, P. Montaville, P. Legrand, T. Isabet, P. Hollander, V. Rouam, A. Thompson
Frank WIEN	EXP-Ligne DISCO	NON	<i>Membrane Perturbation Caused by the Bacterial Riboregulator Hfq and Consequences for Bacterial Communication</i> Auteur : F.Turbant

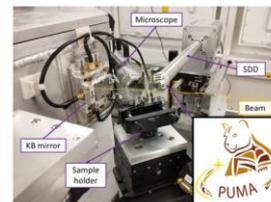
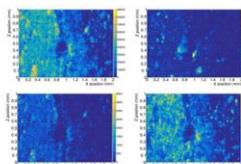
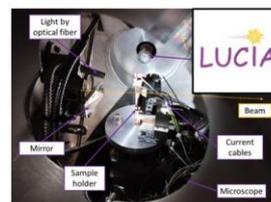
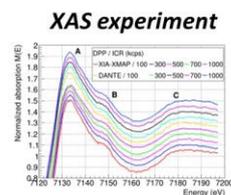


Quelques illustrations des Présentations Orales

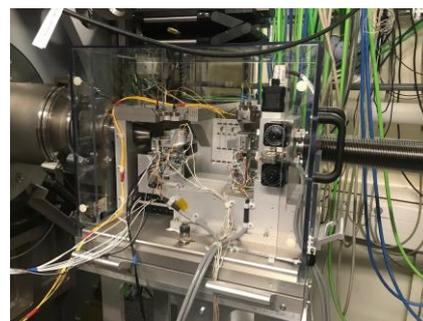
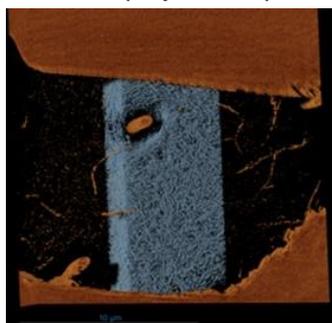
Anthony BEAUVOIS – EXP – Ligne ROCK
 «First photocatalysis experiments at ROCK: overall water splitting by Metal-Organic Framework»



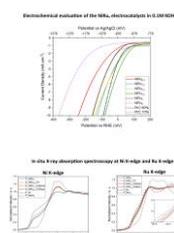
Francisco-Jose IGUAZ-GUTIERREZ - EXP - Détecteurs
 «DANTE: A digital pulse processor for XAFS and XRF experiments»



Filipe ALVES, Christer ENGBLOM, Sébastien DUCOURTIEUX, Javier PEREZ – DAI+EXP
 « Le projet Nanoprobe sur SWING »



Marie Sophie DIAS-FERNANDES – EXP- Ligne LUCIA
 «The electrocatalytic properties of porous heterofunctional materials by electrochemistry and x-ray absorption spectroscopy»



Yassine OUBAID – EXP – Ligne CRISTAL
 «Iron Based Chalcogenide Spin Ladder *BaFe₂S₃*»



Iron Based Chalcogenide Spin Ladder *BaFe₂S₃*
 Yassine Oubaid¹, A. Roll², D. Bounoua¹, A. Forget¹, P. Fertey¹, M. Versaelli¹, P. Foury-Leyrieux¹, V. Gallinet¹

¹ Université Paris-Saclay, CNRS, Laboratoire de Physique des Solides, 91405, Orsay, France
² Centre National de la Recherche Scientifique, Sorbonne Université, Sorbonne Paris Cité, 75013 Paris, France
³ ISEA, Laboratoire Léon Brillouin, Université Paris-Saclay, Gif-sur-Yvette, France

Introduction

- The Family of iron-based superconductors (FeSC) exhibits a multitude of relevant degrees of freedom (magnetic, structural, orbital...)
- In particular a family of $BaFe_2X_3$ ($X = S, Se$) introduces a spin ladder structure (quasi-one-dimensional 1D factor motif).
- Our work focuses on $BaFe_2S_3$ it crystallizes in an orthorhombic structure (Cmca space group) with a 1D ladder behavior at ambient conditions.

Context

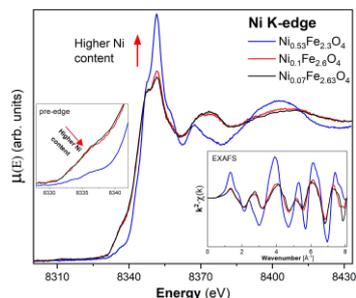
- Pressure induced superconductivity appears near the insulator-metal transition in the iron-based chalcogenides in which the stripe magnetic order plays a major role in stabilizing the superconducting phase.
- The motivation was the simplicity to theoretically model this 1D system and understand the mechanism of superconductivity.
- At ambient conditions, $BaFe_2S_3$ has a stripe order and $BaFe_2Se_3$ has a block magnetic order even though the only difference is a small distortion of the iron ladders.

The ladders are formed by edge-shared FeS_4 tetrahedra.

Phase diagram of $BaFe_2S_3$

Stripe order Block order

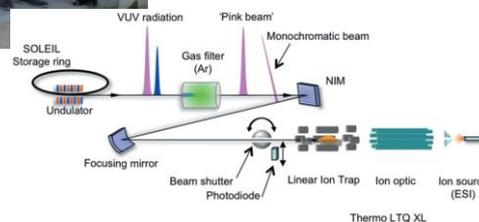
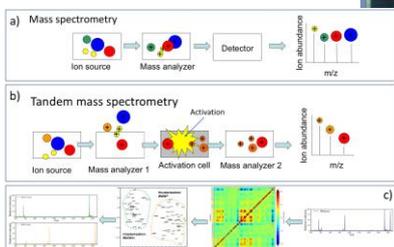
Francesco PAPARONI - EXP – Ligne SAMBA
 «Tuning of the catalytic OER performances of maghemite via Ni doping - An operando XAS study»



Cédric BOURGOIN – DAI -Alignement Métrologie
 «Démonstration 'live' des nouveaux instruments de mesure: bras de mesure et scanner de numérisation 3D»

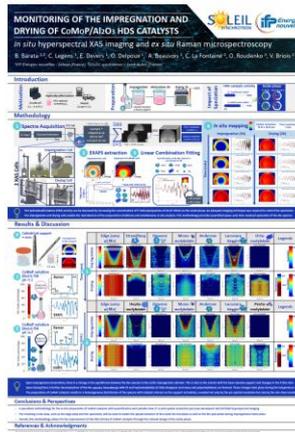


Felix SERVANT – EXP – Ligne DESIRS
 «Statistical analysis for mass spectrometry»



Beatriz BARATA – EXP – Ligne ROCK

«XAS hyperspectral imaging: in situ monitoring of the impregnation and drying of CoMoP hydrosulfurization catalysts»



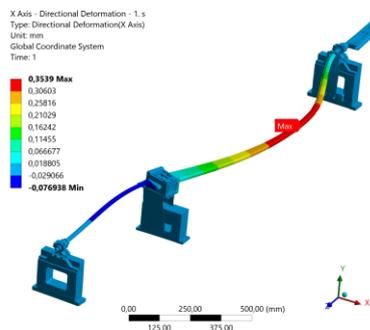
Anastassiya KHAN – EXP – Ligne SAMBA

«Unveiling the origin of improved hydrogen evolution reaction activity of novel FeMoS catalysts: an operando XAS study»



Zhengxuan FAN – DAI – Ingénierie Mécanique

«Modélisation thermomécanique des chambres à vide de l'anneau de stockage Soleil II».



Federico CAPONE – EXP – GALAXIES

«Development of in operando XPS solution for the study of battery interfaces»



Marine FOURNIER – EXP – Ligne PLEIADES

«Coupling a magnetic bottle time-of-flight spectrometer with a liquid micro-jet device on PLEIADES beamline»

