SILS 2019

Annual Meeting of the
Italian Synchrotron Radiation Society

Camerino 9-11 September 2019

Campus of the University of Camerino

Programme Booklet

UNICAM
Università di Camerino
1336

SILS
SOCIETÀ ITALIANA LUCE DI SINCROTRONE
ITALIAN SYNCHROTRON RADIATION SOCIETY

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Programme

Monday, September 9, 2019		
12:30	14:30	**Registration**
14:30	15:15	**Welcome & Introduction** *C. Pettinari (Unicam), D. Vitali (Unicam), A. Trapananti (Unicam), A. Di Cicco (Unicam/SILS), C. Spinella (CNR), S. Gross (ESUO), A. Marcelli (MAECI)* *Room: Aula 3*
15:15	16:00	**Plenary Lecture 1** *Diamonds: a deep journey into the Earth* **F. Nestola** (University of Padova) *Room: Aula 3*
16:00	16:30	**Coffee Break**
16:30	18:30	**Large Scale Facilities updates** *16:30* **S. Lizzit** (ELETTRA) *Current status and future perspectives of Elettra and FERMI* *17:00* **P. Raimondi** (ESRF) *Twenty six years of operation of the ESRF Synchrotron and the EBS Project* *17:30* **S. Pascarelli** (European XFEL) *The European XFEL: start of user operation and first results* *18:00* **R. Pompili** (LNF-INFN) *From SPARC_LAB to EuPRAXIA@SPARC_LAB* *Room: Aula 3*
18:30	19:30	**Tribute to Carlo Lamberti** *18:30* ***Ricordo di Carlo*** *(P. D'Angelo and other colleagues)* *18:50* **L. Mino** (University of Torino) *Direct writing of conductive channels in TiO_2 single crystals by a synchrotron X-ray nanobeam* *19:10* **A. Martini** (University of Torino) *Retrieving quantitative structural information from XANES spectra by means of Multivariate and Machine Learning Approaches* *Room: Aula 3*
19:30		**Welcome Party** *University Campus*

Tuesday, September 10, 2019

09:00	09:45	**Plenary Lecture 2** *Ultra-modern synchrotron-based microscopes for the study of ancient materials: a review of applications to Roman/Italian artefacts and/or by Italian researchers* **M. Cotte** (ESRF) *Room: Aula 3*
09:45	10:00	**Commercial presentation** *Breakthrough Lab X-ray Techniques approaching Synchrotron Beamline Performances* **S. Paziani** (Quantum Design Europe) *Room: Aula 3*
10:00	10:30	**Coffee Break**
10:30	13:10	**MS2 - Photon based multi-dimensional (2D/3D/4D) imaging from VUV to X-rays** *Chairpersons: C. Giannini/C. Masciovecchio* *Room: Aula 2* *10:30* KN1: **I. Robinson** (University College London) *4D Bragg Coherent Diffraction Imaging of Nanocrystals using XFELs* *11:00* O1: **C. Callegari** (Elettra Sincrotrone Trieste) *Diffraction imaging of helium nanodroplets with the FERMI Free Electron Laser* *11:20* O2: **F. Capotondi** (Elettra Sincrotrone Trieste) *Study fast-demagnetization processes using FERMI seeded-FEL* *11:40* O3: **M. Zambrano** (University of Camerino) *The use of synchrotron-based X-ray microtomography for the pore network quantitative and computational fluid dynamics experiments on porous carbonate rocks* *12:00* O4: **M. Romano** (Ludwig Maximilian University) *High resolution X-ray Phase Contrast Imaging for studying the effects of novel radiotherapies* *12:20* O5: **A. Moliterni** (IC-CNR) *Single-crystal synchrotron X-ray diffraction study of new anthracene derivatives compounds* *12:40* O6: **G. Campi** (IC - CNR) *Complex nanoscale geometry in functional materials as seen by synchrotron x-ray micron beam techniques*
		MS3 - Synchrotron based characterization of surfaces and interfaces *Chairpersons: G. Aquilanti/S. Colonna* *Room: Aula 3* *10:30* KN1: **A. Baraldi** (University of Trieste) *The enticing interaction of graphene with atoms, molecules, clusters and surfaces* *11:00* KN2: **V. Feyer** (Forschungszentrum Jülich-PGI) *Molecular Orbital Tomography: efficient method to study the adsorption geometry and electronic structure* *11:30* O1: **I. Grimaldi** (University of Calabria) *Comparative study of electronic band structure of Pb(Sn)-based topological insulators* *11:50* O2: **C. Puglia** (Uppsala University) *Comparing free and adsorbed TPA: electronic structure modification induced by the molecule-surface interaction* *12:10* O3: **I. Carlomagno** (Elettra Sincrotrone Trieste) *Investigating excimer laser effects on ZnO nanorods properties through a multi-scale approach* *12:30* O4: **G. Contini** (ISM-CNR) *1D and 2D polymers via on-surface Ullmann coupling: intermediate reaction steps to growth extended ordered structures* *12:50* O5: **G. Gotter** (IOM-CNR) *Unexpected electron correlation (Coulomb and exchange) at the nanoscale probed by Auger Photo-Electron Coincidence Spectroscopy: size and bias effects*
13:10	15:00	**Lunch** **&** **Poster Session**

15:00	16:40	**MS1 - Multi-techniques approach for in-situ/in operando studies** *Chairpersons: R. Arletti/S. Gross* *Room: Aula 2* *15:00* KN1: **T. L. Sheppard** (KIT) *Harnessing X-ray (Spectro)microscopy for Chemical Imaging of Heterogeneous Catalysts* *15:30* O1: **M. Giorgetti** (University of Bologna) *Dynamic Processes in Metal Hexacyanoferrate-based Batteries Revealed by Operando XAS and XRD* *15:50* O2: **D. Lizzit** (Elettra Sincrotrone Trieste) *On the hydrogenation of the Graphene/Ni(111) system* *16:10* O3: **L. Monico** (ISTM - CNR) *Probing the chemistry of cultural heritage materials via different 2D XANES-based approaches: the alteration processes of pigments and carbonatation of calcium-based consolidants into limestone matrix*	**Open Session 1** *Chairperson: P. D'Angelo* *Room: Aula 3* *15:00* O1: **G. Aquilanti** (Elettra Sincrotrone Trieste) *X-ray fluorescence beamline at Elettra Sincrotrone Trieste: a versatile tool for structural and chemical investigations* *15:20* O2: **E. Principi** (Elettra Sincrotrone Trieste) *FEL time-resolved methods for monitoring ultrafast structural and electronic changes in condensed matter* *15:40* O3: **L. Paolasini** (ESRF) *Mixed Spin-Quadrupole-Phonon modes in UO_2 Studied by Inelastic X-ray Scattering* *16:00* O4: **A. Verna** (University of Roma Tre) *Magnetic proximity effect in Co/Pt multilayer investigated through X-ray resonant magnetic reflectivity* *16:20* O5: **P. Dolcet** (Karlsruhe Institute of Technology) *Increasing the performance of Pd/Al_2O_3 and Pd/CeO_2 catalysts for total methane oxidation by pre-reduction*
16:40	17:00	**Coffee Break**	
17:00	18:00	*17:00* O4: **F. Tajoli** (University of Padova) *Effect of space confinement on crystallization of molybdenum oxide synthetized by inverse miniemulsion –an in-situ SAXS/WAXS study* *17:20* O5: **G. Confalonieri** (University of Modena and Reggio Emilia) *Pressure and zeolite Framework Type Cooperation Effect in the Differential Absorption of Ethanol and Water from the Azeotrope Solution: the case of Si-Chabazite* *17:40* O6: **G. Cruciani** (University of Ferrara) *Assessing by in situ synchrotron powder diffraction the effect of enhanced ferroelastic domain switching in zeolite ZSM-5 in order to tailor the secondary induced mesoporosity*	*17:00* O6: **R. Cimino** (LNF - INFN) *Synchrotron Radiation studies of relevance to Accelerator R&D* *17:20* O7: **F. Offi** (University of Roma Tre) *Quantum size and surface effects on the electronic structure of Yb thin films* *17:40* O8: **R. Flammini** (ISM-CNR) *Evidence of quantum well states at the Ag/β-Si_3N_4(0001)/Si(111) interface*
18:00	19:15	**SILS Members Assembly** *Room: Aula2*	
20:00		**Social Dinner** *Ristorante Pappafò* *Via Montagnano 98, Camerino*	

Wednesday, September 11, 2019

09:00	09:45	**Plenary Lecture 3** *High resolution Resonant Inelastic X-ray Scattering for the study of correlated material* **G. Ghiringhelli** (Polytechnic University of Milano) *Room: Aula 3*
09:45	10:30	**SILS Awards and Prizes** Best PhD thesis Awards SILS young researcher Award SILS outstanding scientist Award *Room: Aula 3*
10:30	11:00	**Coffee Break**

11:00 – 13:30

MS4 - Advanced Radiation Sources: State-of-the-art and future applications

Chairpersons: E. Chiadroni, F.Stellato
Room: Aula 2

11:00 KN1: **L. Giannessi** (ELETTRA Sincrotrone Trieste)
FERMI: the first externally seeded Free Electron Laser in the extreme ultraviolet and soft X-ray spectral regions

11:30 O1: **S. Di Mitri** (Elettra Sincrotrone Trieste)
Laser-Slicing at a Diffraction Limited Storage Ring

11:50 O2: **G. Rossi** (University of Milano)
MariX, an advancedMHz-class repetition rate X-ray source for linear regime time-resolved spectroscopy and photon scattering

12:10 O3: **A. De Vita** (IOM-CNR)
A novel high repetition rate HHG source for the study of time-resolved electronic and magnetic structure of strongly correlated systems

12:30 O4: **S. Lupi** (University of Rome "La Sapienza")
High-Intensity Terahertz and Mid-Infrared Radiation: Production and Opportunities in Condensed Matter Research

12:50 O5: **L. Gelisio** (DESY)
Structural evolution of Platinum nanostructured thin films driven by ultrashort IR radiation

13:10 O6: **M. Coreno** (ISM-CNR)
Shedding light on low density matter with novel XUV light sources

Young Investigators session

Room: Aula 3

11:00 KN1: **F. Coppari** (Lawrence Livermore National Laboratory)
A new phase transition in laser-shock compressed gold from X-ray diffraction at the Dynamic Compression Sector beamline

11:30 **Recipient of the best PhD thesis Award SILS**
2019 Best PhD thesis award talk

11:42 O1: **E. Giangrisostomi** (Helmholtz Zentrum Berlin)
Directional sub-fs charge transfer dynamics in 1T-TaS_2

11:54 O2: **J. S. Pelli Cresi** (ISM-CNR)
Structural modifications in cerium oxide ultrathin films induced by reduction

12:06 O3: **F. Zarotti** (University of Rome Tor Vergata)
Surface x-ray diffraction investigation of the interface structure of Yttrium doped Barium Zirconate proton conductor grown on different substrates

12:18 O4: **M. Bogar** (CERIC-ERIC)
In Situ GISAXS Investigation of PtNi Alloy Under Operational Conditions of PEM Fuel Cells

12:30 O5: **F. Tavani** (University of Rome "La Sapienza")
Investigating chemical reactions in the millisecond time scale through coupled X-Ray Absorption and UV-Vis spectroscopies

12:42 O6: **I. Schiesaro** (University of Rome Tre)
Copper Coordination Compounds Conjugated to Gold Nanoparticles as InnovativeAnticancer Drugs: Structural Investigation Carried Out by Synchrotron Radiation-Induced Techniques

12:54 O7: **G. Fazio** (University of Rome "La Sapienza")
Structural investigation of $HgCl_2$ solvation structure using X-Ray Absorption Spectroscopy

			13:06 O8: **S. Pollastri** (CERIC-ERIC) *In-situ time resolved XAS investigation of Mg in magnesium-potassium phosphate cements* *13:18* O9: **F. Galdenzi** (University of Rome Tre) *Iron rich amphiboles: a study on correlated structural and electrical properties*
13:30	15:00	**Lunch**	
15:00	17:30	**Open Session 2** *Room: Aula 2* *15:00* O1: **M. A. Muñoz-Marquez** (CIC EnergiGUNE) *Study of the reaction mechanisms of dry room gases on metallic lithium anodes for Li-ion batteries using in-situ ambient pressure X-ray photoelectron spectroscopy* *15:20* O2: **D. Oliveira de Souza** (Elettra Sincrotrone Trieste) *Experimental Aspects and Analysis Strategies for in Operando XAS experiments of catalysts in Electrochemistry* *15:40* O3: **A. Puri** (IOM-CNR) *XAFS comparative study of the crystal structure formation and evolution in $Ln_2M_2O_7$ (Ln = Gd, Tb, Dy; M = Ti, Zr)* *16:00* O4: **D. Medas** (University of Cagliari) *Zinc chemical speciation in bivalve shells from a polluted site* *16:20* O5: **A. Guarnaccio** (ISM - CNR) *From thiophene building blocks to conjugated molecular systems for OLEDs: an investigation by synchrotron spectroscopies* *16:40* O6: **F. Vita** (Marche Polytechnic University) *The Unconventional Nature of the Nematic Phase of Bent-Core Liquid Crystals Revealed by X-ray Diffraction*	**Satellite workshop "Coherence of UV-SoftX beams, a contribution to its exploitation"** *Chairpersons: S. Nannarone G. Stefani* *Room: Aula 3* *15:00* O1: **L. Avaldi** (ISM - CNR) *Examples of coherence in atomic and molecular photoionization by a single photon (synchrotron radiation) and few photons (FEL)* *15:25* O2: **S. Lupi** (University of Rome "La Sapienza") *Terahertz and Infrared Synchrotron Radiation: Coherence helps its use?* *15:50* O3: **G. Margaritondo** (Ecole Polytechnique Federale de Lausanne) *Microtomography with Coherent Synchrotron Radiation: Mapping the Human Brain* *16:15* O4: **C. R. Natoli** (LNF-INFN) *Some odd consequences of self-coherence in the photo-diffraction and photo-absorption processes* *16:40* O5: **G. Rossi** (University of Milano) *Measuring linear and nonlinear response by the photoelectric effect: first order diffraction and higher-order in 3D and 2D systems* *17:05* O6: **S. Turchini** (ISM - CNR) *Opportunities for spatial coherent spectroscopies in the VUV-X ray energy range*
17:30	17:45	**Closing ceremony** *Farewell and coffee*	

List of Posters

P1: A. Balerna *"Structural characterization of hybrid Au-CuO Nanoparticles and their role in Selective Benzyl Alcohol Oxidation"*

P2: M. Franca *"Electronic and magnetic properties of quaternary spinel ferrites prepared by low-temperature hydrothermal synthesis: a combined XAS-XMCD investigation"*

P3: F. Tajoli *"Following crystallization of ZnS nanostructures in confined space by in-situ and time-resolved SAXS"*

P4: S. J. Rezvani *" Structure rearrangements induced by lithium insertion in metal alloying oxide spinel structure studied by x-ray absorption near-edge spectroscopy"*

P5: S. J. Rezvani *"Structurally induced effects on electronic properties of the semiconducting one dimensional systems"*

P6: R. Parmar *"Structural evolution of Lithium Manganate cathodes during charge/discharge cycles"*

P7: A. Minelli *" Charge density wave and framework instabilities in monophosphate tungsten bronzes"*

P8: Y. Mijiti *"New internally heated diamond anvil cell for fast heating and cooling rates at high pressure"*

P9: Y. Mijiti *"Collapse of itinerant ferromagnetism in CoS_2 under pressure: An x-ray absorption spectroscopy study"*

P10: F. C. Adamo *" X-ray probing of surface anchoring in films of bent-core liquid crystals"*

P11: G. Confalonieri *" High Pressure Intrusion of Electrolyte Aqueous Solution into Si-LTA Zeolite"*

P12: L. Gigli *" Structural characterization of Ga-Ferrierite, combining synchrotron high pressure XRPD and XAS experiments"*

P13: R. Arletti *"High pressure behavior of the hybrid material $AlPO_4$-5+azobenzene: an in situ synchrotron X-ray diffraction study"*

P14: F. Arzilli *"A new vision of kinetic processes in geosciences: 3D and in situ 4D X-ray microtomography"*

P15: F. Arzilli *"The evidence of mixing between basalt and rhyolite unraveled by microanalysis and X-ray microtomography"*

P16: A. Puri *"Earth and Environmental Sciences at LISA"*

P17: A. Witkowska *"Structural investigations of niobium-doped bioactive calcium-phosphate glass-ceramics by means of spectroscopic studies"*

P18: P. Andreozzi *"Mechanistic Study of the Nucleation and Conformational Changes of Polyamines in Presence of Phosphate Ions"*

P19: A. Terzi *"Sub and supramolecular investigation of the impact of tissue engineering's protocols on equine type-I collagen structural features"*

P20: G. Biella *"Brain and brain vessel X-ray synchrotron microbeams and microtomography for Chronic Pain studies and treatments"*

P21: A. Di Cicco *" Revisiting the probing depths of soft x-ray absorption techniques by Constant Initial State photoemission experiments"*

P22: F. Stellato *"A Coherent Imaging XUV-FEL users end-station for the EuPRAXIA@SPARC_LAB Free Electron Laser"*

P23: F. Villa *" A photon beamline for the water window FEL at EuPRAXIA@SPARC_LAB"*

P24: S. Di Mitri *"Generation of Coherent Sub-Picosecond THz Transition Radiation in Parasitic Mode to a*

Free Electron Laser"

P25: S. Di Mitri *"Simple and Robust Free-Electron Laser Doubler for Full Control of Two-Pulse Two-color FEL operation"*

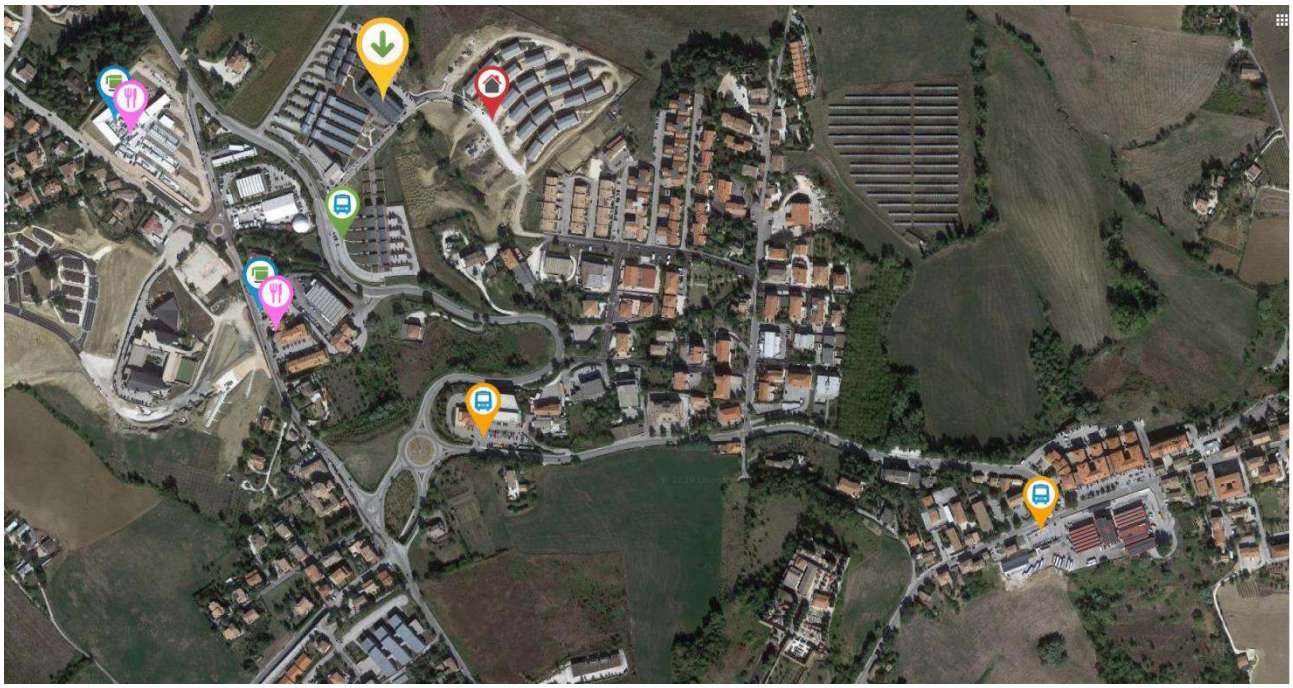
P26: P. Carrara *"A novel beamline for advanced photoelectron spectroscopy with narrowband extreme ultraviolet high harmonics at variable high repetition rate"*

P27: A. Puri *"Developing new beamline instrumentation at LISA"*

P28: M. Faiferri *"The design of research infrastructures"*

P29: G. Giuli *"V K-edge XANES spectra of V model compounds and V-bearing phosphate glasses: a Full Multiple Scattering study"*

Useful maps



Conference Venue

Restaurant

Coffeeshop

Bus stop for/to Castelraimondo (railway station)

Bus stop for/to Roma

Student residences

SILS 2019 Timetable

	Monday September 9	Tuesday September 10	Wednesday September 11
09:00		Plenary Lecture 2	Plenary Lecture 3
09:45		Commercial presentation	SILS awards
10:00		Coffee break	
10:30		MS2 / MS3	Coffee break
11:00			MS4 / Young investigators session
12:30	Registration		
13:00			
13:10		Lunch & poster session	Lunch
14:30	Welcome & Introduction		
15:00		Open Session 1 / MS1	Open Session 2 / Satellite workshop "Coherence of UV-SoftX beams, a contribution to its exploitation"
15:15	Plenary Lecture 1		
16:00	Coffee break		
16:30	Large scale facilities updates		
16:40		Coffee break	
17:00		Open Session 1 / MS1	
17:30			Closing ceremony & Farewell coffee
18:00		SILS members assembly	
18:30	Tribute to Carlo Lamberti		
19:30	Welcome party		
20:00		Social dinner	

MS1 - Multi-techniques approach for in-situ/in operando studies

MS2 - Photon based multi-dimensional (2D/3D/4D) imaging from VUV to X-rays

MS3 - Synchrotron based characterization of surfaces and interfaces

MS4 - Advanced Radiation Sources: State-of-the-art and future applications