

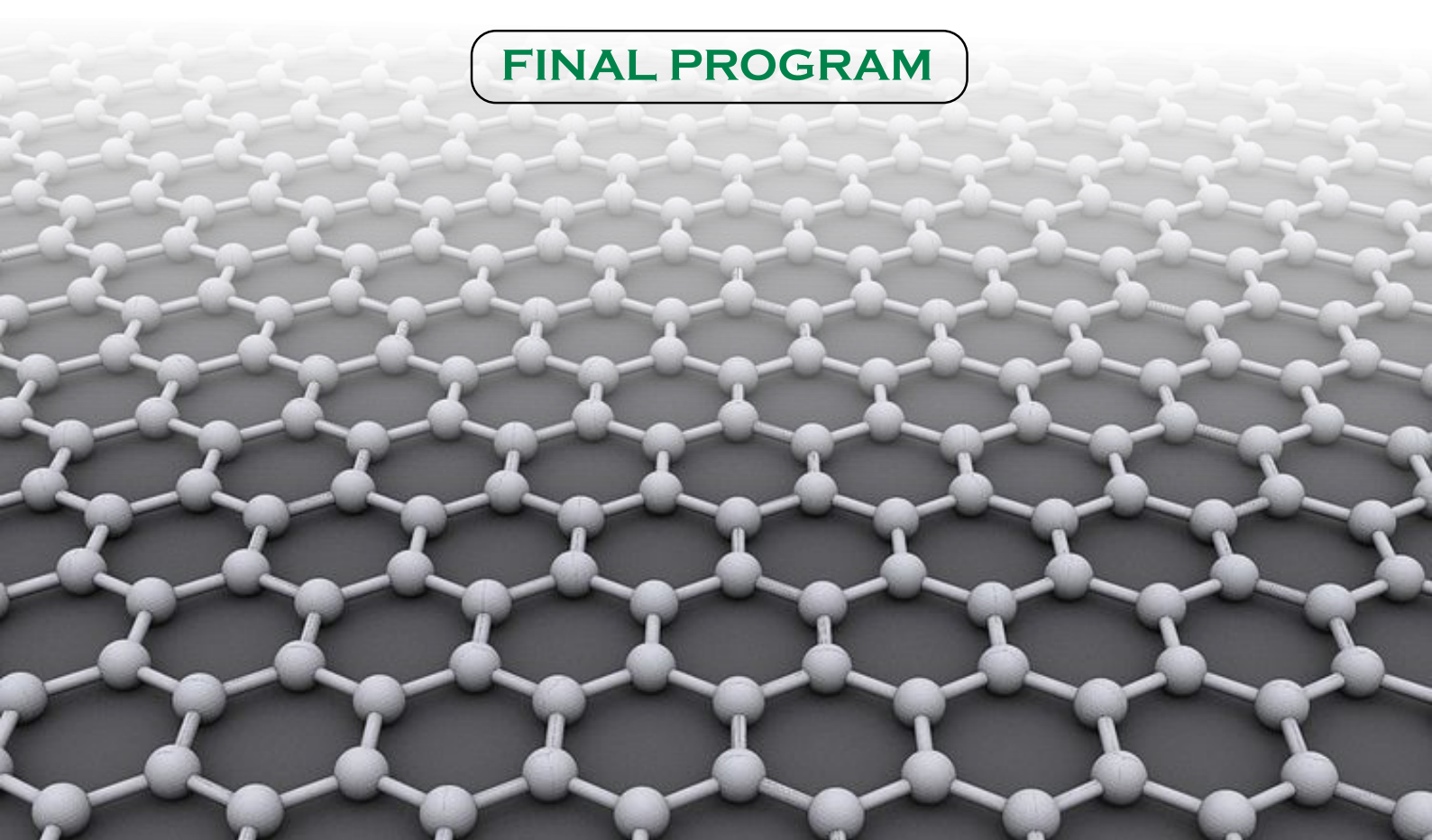
CONMAT2021

Global Summit on Condensed Matter Physics

October 18-20, 2021 Valencia, Spain

Location: Sercotel Sorolla Palace
Avinguda de les Corts Valencianes, 58, 46015, Valencia, Spain

FINAL PROGRAM



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MONDAY OCTOBER 18, 2021

09:00-09:15 Registrations

09:15-09:30 Opening Ceremony

09:30-10:10 Title: Simulating Dropland: Computational Design of Soft Mesoscale Materials
Sauro Succi, Italian Institute of Technology, Italy P

10:10-10:50 Title: Neuromorphic Photonics
Lorenzo Pavesi, University of Trento, Italy P

10:50-11:05 Coffee Break- Foyer

11:05-11:45 Title: Structural Characterization of Biomembranes by Neutron Scattering
Giovanna Fragneto, Institut Laue-Langevin, France P

11:45-12:15 Title: Direct and Inverse Magnetocaloric Effects in $Y_{0.9}Pr_{0.1}Fe_2D_{3.5}$ Deuteride
Valérie Paul-Boncour, ICMPE/CNRS, France K

12:15-12:45 Title: Noble Metal Single Atom Catalysis on Ceria
Rita Magri, Università di Modena e Reggio Emilia, Italy K

12:45-12:50 Group Photo

12:50-13:30 Lunch - Restaurant

13:30-14:00 Title: The TeraFERMI Beamline as a Powerful Tool for Nonlinear Studies on Dirac Materials
Andrea Perucchi, Elettra-Sincrotrone Trieste, Italy K

14:00-14:30 Title: New Bistable Molecular Materials for Nanoelectronics Applications
Aurelian Rotaru, Stefan cel Mare University, Romania K

14:30-15:00 Title: Computational Study and Design of 2D Materials: From Battery to Sensing Applications
Mohsen Asle Zaeem, Colorado School of Mines, USA K

Session: 1 Theory of Condensed Matter, Semiconductor Physics & Energy Materials
Session Chair: **Stefania Pagliara**, Italy

15:00-15:25 Title: Photoinduced Modulation of the Excitonic Resonance via Coupling with Coherent Phonons in Bismuth Triiodide Semiconductor
Stefania Pagliara, Università Cattolica del Sacro Cuore, Italy I

15:25-15:50 Title: Emission Properties and Optical Gain Performance of Lanthanide-Based Chloride Double Perovskites in the Near Infrared
Daniela Marongiu, University of Cagliari, Italy I

15:50-16:15 Title: Metal-Insulator-Metal Thin Film Stack: Avoided Crossing between Stack Modes Giving Rise to an Output Photon Flux Enhancement
Georges Raseev, Centre National De La Recherche Scientifique, France I

16:15-16:30 Coffee Break- Foyer

16:30-16:55 Title: Color-Tuning in Photosynthetic Pigment-Protein Complexes
Arvi Freiberg, Tartu University, Estonia I

16:55-17:20	Title: Direct Measurement of Photocarrier Radiative Decay Rates in Hybrid Perovskites Thin Films Angelica Simbula , University of Cagliari, Italy	
17:20-17:45	Title: Modelling and Development of μ -Thermoelectric Generators with High Output Electrical Powers Bertrand Lenoir , Université de Lorraine, France	
17:45-18:10	Title: Huygens Scatterers with Self-Assembled Meta-Atoms Alexandre Baron , University of Bordeaux, France	
18:10-18:35	Title: Very Low-Temperature Heteroepitaxy of $\text{Ge}_{1-y}\text{Sn}_y$ Binary Alloy using Chemical Vapour Deposition Pedram Jahandar , University of Warwick, UK	

End of Day 1

TUESDAY OCTOBER 19, 2021

Session: 2 Magnetism, Spintronics & Statistical Physics

Session Chair: Pascale Foury, France

09:00-09:25	Title: Combination of Magnetism and Superconductivity in the Pressurized BaFe_2Se_3 Spin Ladder Pascale Foury , Université Paris Saclay, France	
09:25-09:50	Title: Preparation, Magnetic Properties and Excitations in Rare-Earth $\text{A}_2\text{B}_2\text{O}_7$ Oxides Milan Klicpera , Charles University, Faculty of Mathematics and Physics, Czech Republic	
09:50-10:15	Title: From Structural to Magnetic Properties of Metallo-Porphyrines in Fe-based Spinterfaces Alberto Luigi Brambilla , Politecnico di Milano, Italy	
10:15-10:40	Title: Giant Caloric and Multicaloric Effects in Magnetic Shape Memory Alloys Adrià Gràcia Condal , University of Barcelona, Spain	
10:40-11:05	Title: Capillary Condensation and Depinning Transitions in Open Slits Alexandr Malijevsky , Czech Academy of Sciences, Czech Republic	
11:05-11:20	Coffee Break-Foyer	
11:20-11:45	Title: Development of Perturbation Theories for Spin-Orbit Coupling and Correlation in Molecules and Periodic Systems, and their Implementation in the CRYSTAL Code Jacques K Desmarais , University of Turin, Italy	
11:45-12:10	Title: Nuclear Spectroscopies for Understanding the Effect of Structural Defects on Shape Memory Alloys' Martensitic Transformation Fernando Plazaola , University of the Basque Country, UPV/EHU, Spain	
12:10-12:35	Title: Understanding Giant Magnetic Switching at Low Fields Mikel Holcomb , West Virginia University, USA	
12:35-13:00	Title: Magneto-Optical Estimation of Carrier Lifetime in GeSn Alloys Simone Rossi , University of Milan-Bicocca, Italy	
13:00-13:40	Lunch - Restaurant	

Session: 3 Strongly Correlated and Disordered Systems & Solid State Physics		
Session Chair: Joanna Depciuch, Poland		
13:40-14:05	Title: In Situ Observations of Dynamic Processes such as: Absorption, Accumulation Place and Interaction of Gold Nanoparticles having Different Shapes, with Living Cells, in Liquid Environments Directly in the Nanolive 3D CX-A Microscope Joanna Depciuch , Institute of Nuclear Physics, Polish Academy of Science, Poland	I
14:05-14:30	Title: Modeling and Simulation of Two-Dimensional Single-Electron Dynamics Josef Weinbub , TU Wien, Austria	I
14:30-14:55	Title: Neuromorphic Computing with a Metallic Nano-Junctions Network Bruno Paroli , Università degli Studi di Milano, Italy	I
14:55-15:20	Title: Low-Magnetic Field- and Temperature-dependent Raman Response and Tunable Berry Phase in Thin Films of $\text{Pb}_{0.77}\text{Sn}_{0.23}\text{Se}$ Sanaz Mehdipour , University of Salamanca, Spain	I
15:20-15:45	Title: Rational Band Engineering Leads to Enhanced Thermoelectric Performance of Fe_2VAl -type Heusler Compounds Alexander Riss , TU Wien, Austria	I
15:45-16:00	Coffee Break-Foyer	
16:00-16:25	Title: Scalable Disordered Hyperuniform SiGe Architectures Obtained by Solid-State Dewetting Monica Bollani , Photonic and Nanotechnology Institute, Italy	I
16:25-16:50	Title: Ultra-High Solubility of Al and Enhanced Thermopower in $\text{Fe}_2\text{VAl}_{1+x}$ Michael Parzer , TU Wien, Austria	I
16:50-17:15	Title: Anderson Transition: A Novel Route towards High Thermoelectric Performance Fabian Garmroudi , TU Wien, Austria	I
End of Day 2		
WEDNESDAY OCTOBER 20, 2021 Virtual Presentations		
Starts@ Beijing, ASIA (GMT + 8)		
09:00-09:10	Introduction	
09:10-09:50	Title: Open Issues in High-Temperature Superconducting Cuprates and Advanced Spectroscopic Studies Atsushi Fujimori , University of Tokyo, Japan	P
09:50-10:30	Title: Pressure Dependence of Electronic Structures and Luminescence Characteristics of Garnet TANABE Setsuhisa , Kyoto University, Japan	P
10:30-11:10	Title: Photoalignment and Photopatterning of Azodye Nanolayers: New Technology for Liquid Crystal Devices Vladimir G. Chigrinov , Hong Kong University of Science and Technology, Hong Kong	P
11:10-11:40	Title: Diluted Magnetic Semiconductors in Flatland Dinh Loc Duong , Sungkyunkwan University, South Korea	K

11:40-12:05	Title: Kondo Coherence and Quantum Criticality in Ferromagnetic SmN William Holmes-Hewett , Victoria University of Wellington, New Zealand	
12:05-12:30	Title: Metal-Insulator Transition of Corundum-Type Ti_2O_3 Films Kohei Yoshimatsu , Tohoku University, Japan	
12:30-12:55	Title: Magnetostriction and Magnetic Quantum Number Specific Magnetic Hysteresis Curves in a Nano-Structured Co/Fe Multilayer Film Hiroshi Sakurai , Gunma University, Japan	
12:55-13:20	Title: Interfacial Phenomena of Presentation between Liquid Iron and Molten Oxides using Electrostatic Levitation under Microgravity Conditions Masahito Watanabe , Gakushuin University, Japan	
13:20-13:45	Title: Higher-Order Topological Insulators in Classical Waves and Their Dynamics Biye Xie , University of Hong Kong, Hong Kong	
13:45-14:10	Title: Development of Magnetic Tunnel Junctions with Bulk Perpendicular $L1_0$ -FePd Material for Ultralow-Energy Spin Memory Devices Delin Zhang , Tiangong University, China	
14:10-14:35	Title: Theory of Magnetism-Induced Negative Thermal Expansion in Inverse Perovskite Antiferromagnets Masahito Mochizuki , Waseda University, Japan	
14:35-15:00	Title: Large Seebeck Coefficient due to Phonon- and Paramagnon-Drag Based on Linear Response Theory Masao Ogata , University of Tokyo, Japan	
15:00-15:25	Title: Nonlinear Behaviors on Semiconductors by THz Free-Electron-Laser Akinori Irizawa , Osaka University, Japan	
15:25-15:50	Title: Design of Low-Supply-Voltage Phase-Locked Loops for Emerged Applications: An Overview Zhao Zhang , Chinese Academy of Sciences, China	
15:50-16:15	Title: Photo-Induced Valence Transition of SmS Shin Ichi Kimura , Osaka University, Japan	
16:15-16:40	Title: Development of Permanent Magnets for Ultra-Small Stepping Motors Masaki Nakano , Nagasaki University, Japan	
16:40-17:05	Title: Onsager's Scars in Disordered Spin Chains Naoyuki Shibata , University of Tokyo, Japan	
17:05-17:30	Title: Characterization of 2D Materials and Devices by STM Chun-Liang Lin , National Yang Ming Chiao Tung University, Taiwan	
17:30-17:55	Title: Insulator-Metal Transition by Non-Adiabatic Quantum Lattice Fluctuations in Trans-Polyacetylene Norikazu Tomita , Yamagata University, Japan	
17:55-18:20	Title: Tunable Tunneling Magneto-Dielectric Response via Heterostructure Routes Yang Cao , Tohoku University, Japan	

18:20-18:45	Title: LDA+DMFT Approach to Resonant Inelastic X-ray Scattering in Correlated Materials Atsushi Hariki , Osaka Prefecture University, Japan	I
18:45-19:10	Title: Spin Current Generation and Detection in Uniaxial Antiferromagnetic Insulators Junxue Li , Southern University of Science and Technology, China	I
19:10-19:35	Title: A Stable Twisted Bilayer Black Phosphorus in 2O-tαP Phase: Dynamical Origin, Physical Fingerprints, Electronic Dispersions, and Thermal Conductivity Douxing Pan , University of Science and Technology Beijing, China	I
THURSDAY OCTOBER 21, 2021 Virtual Presentations		
Starts@ London, UK (GMT+1)		
09:00-09:40	Title: Surprises, Puzzles and Ongoing Discoveries on Superconductivity in Condensed Matter Sciences Mukunda P Das , Australian National University, Australia	P
09:40-10:10	Title: Structure, Energetic, and Electronic Properties of Layered Perovskites and Influence of a Key Structure Feature: A-Site Ion Movements (Jefferson) Zhe Liu , University of Melbourne, Australia	K
10:10-10:50	Title: Recent Progress in 3D Printing of Thermoplastic Polymer Composites Zhou Kun , Nanyang Technological University, Singapore	P
10:50-11:30	Title: Rational Design of Semiconductor Heterojunctions for Photocatalysis Gianfranco Pacchioni , University of Milano-Bicocca, Italy	P
11:30-11:55	Title: Chemistry of Single Layer Graphene on Ni(111): Adsorption and Reactions under Cover Luca Vattuone , University of Genoa & CNR-IMEM, Italy	I
11:55-12:20	Title: Non-Noble Metal Nanostructures Prepared by Oblique-Angle Deposition onto Nanorippled Surfaces for Plasmonic Applications David Babonneau , Centre National de la Recherche Scientifique, France	I
12:20-12:45	Title: Quantum Spin Hall Constrictions Niccolo Traverso Ziani , Università degli studi di Genova, Italy	I
12:45-13:10	Title: A Josephson Phase Battery Elia Strambini , Nest Istituto Nanoscience-CNR, Italy	I
13:10-13:35	Title: X-ray Induced Dynamics in Oxide Glasses as a Probe of Network Connectivity Giovanna Pintori , Ca' Foscari University of Venice, Italy	I
13:35-14:00	Title: High Pressure Effects on U L3 X-ray Absorption in Partial Fluorescence Yield Mode and Single Crystal X-ray Diffraction in the Heavy Fermion Compound UCd11 Farzana Nasreen , University of Nevada, USA	I
14:00-14:40	Title: Multi-Physics Simulation to Address Challenges in Energy Storage Wei Lu , University of Michigan, USA	P

14:40-15:05	Title: Accurate Calculation of Excited State Properties of Electrons in Material at 100 PetaFLOP/s Mauro Del Ben , Lawrence Berkeley National Laboratory, USA	
15:05-15:30	Title: Current-Induced Nonlinear Optical Response in Topological Semimetals Kazuaki Takasan , University of California, USA	
15:30-15:55	Title: Superconductivity Pairing Behavior in Quantum Materials Roxanne M Tutchton , Los Alamos National Lab, USA	
15:55-16:20	Title: The Li-F-H Ternary System at High Pressures Tiange Bi , University at Buffalo, USA	
16:20-16:45	Title: Cycling Excitation Process for Signal Amplification in Disordered Materials Yu Hwa Lo , UCSD, USA	
16:45-17:10	Title: Analogue Ionically-Coupled Multi-Terminal Memristors Based on Plasma-Treated MoS ₂ Layers Xiaogan Liang , University of Michigan, USA	
17:10-17:35	Title: Optical N-Invariant of Graphene's Topological Viscous Hall Fluid Todd Van Mechelen , Purdue University, USA	
17:35-18:00	Title: Spintronics without Semiconductors Richard Spitzer , Integrated Magneto Electronics, USA	
FRIDAY OCTOBER 22, 2021 Virtual Presentations		
Starts@ London, UK (GMT+1)		
09:00-09:25	Title: First-Principles Calculations of Higher-Order Elastic Constants Sławomir P Łepkowski , Polish Academy of Sciences, Poland	
09:25-09:50	Title: Heat and Mass Transfer Processes in Optically Nonlinear Dispersed Systems under the Action of Electromagnetic Waves Uvarova Lyudmila , Moscow State University of Technology, Russia	
09:50-10:15	Title: Topological Properties of Weyl Semimetals Dima Cheskis , Ariel University, Israel	
10:15-10:40	Title: Hot Carrier Cooling Dynamics in Two-Dimensional Hybrid Perovskites Jun Yin , King Abdullah University of Science and Technology, Saudi Arabia	
10:40-11:05	Title: Exchange Bias: Myth and Reality Debajyoti De , The Neotia University, India	
11:05-11:30	Title: Ion Beams, Lasers and Gamma Radiations in Nano Science and Nano Technology Anand P Pathak , University of Hyderabad, India	
11:30-11:55	Title: Prospects for Isotope Materials Science Vladimir G Plekhanov , Fonoriton Sci. Lab, Estonia	
11:55-12:20	Title: Phase Diagrams of Water-Ammonia Ices Mixtures at Extreme P-T Conditions Sandra Ninet , Institut de Minéralogie et de Physique des Milieux Condensés, France	

12:20-12:40	Title: Controllable Topological Superconductivity in Superconductor Ferromagnet Heterostructures Livanas Giorgos , National Technical University of Athens, Greece	Poster
12:40-13:05	Title: Perspectives on Electrically Pumped Ge/SiGe QW THz Emitters Luca Persichetti , Roma Tre University, Italy	
13:05-13:30	Title: Electron Viscosity, Elasticity and Nonlocal Current Response Probed by Optical Spectroscopy in Isotropic and Anisotropic Solid-State Systems Davide Valentinis , Karlsruhe Institute of Technology, Germany	
13:30-13:55	Title: Carbon Ordering in Martensite - Its Thermoelastic and Anelastic Consequences Philippe Maugis , Aix-Marseille University, France	
13:55-14:20	Title: Optical Tweezers to Investigate Biosensors at the Single Molecule Level Anna Maria Zaltron , Università di Padova, Italy	
14:20-14:45	Title: Hydrodynamical Description for Magneto-Transport in the Strange Metal Phase of Bi-2201 and LSCO Martina Meinero , Università degli Studi di Genova, Italy	
End of the Conference		

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