

PROGRAM (as of 30/08/2021)

P: Plenary / K: Keynote lecture / I: Invited Lecture / O: Oral Contribution



Tuesday (31/08/2021)

08:30 – 08:50: Online Registration

08:50 – 09:00: Opening - Welcome and Introduction

Chairperson: Vincenzo Palermo (Italian National Research Council (CNR), Italy)

09:00 – 09:45: **Klaus Müllen** (Max Planck Institute for Polymer Research, Germany) P

Small, Medium, Large - from Nanographenes to Graphene Nanoribbons and Graphene

09:45 – 10:25: **Elisa Molinari** (Modena University, Italy) K

The excitons that you might not expect

10:25 – 10:30: **Alberto Moscatelli** (Nature Publishing Group, UK)

Introduction to Nature Portfolio

10:30– 10:45: Break & Posters Session

Chairperson: Paolo Samori (Université de Strasbourg / CNRS, France)

10:45 – 11:15: **Eugenio Coronado** (ICMOL - Universidad de Valencia, Spain) I

2D magnetic materials based on molecular/2D heterostructures

11:15 – 11:45: **Andreas Hirsch** (University of Erlangen, Germany) I

Patterned Functionalization of Graphene and Inorganic 2D-Materials

11:45 – 12:00: **Jean-Francois Dayen** (Université de Strasbourg, France) O

Switchable Optoelectronic Devices based on Spin Crossover/Graphene Heterostructure

12:00 – 12:15: **Niklas Herrmann** (KU Leuven, Belgium) O

On-surface synthesis of an imine based 2D-COF using the 2-in-1 strategy: Characterisation at multiple length scales

12:15 – 12:30: **Sara Amar** (Centre de Recherche Paul Pascal, France) O

Zeolite-Templated Carbon: a Promising Material for Supercapacitors

12:30 – 12:45: **Marta Alcaraz Megias** (Universidad de Valencia, Instituto de Ciencia Molecular (ICMol), Spain) O

Continuous-flow synthesis of high-quality few-layer antimonene hexagons

12:45 – 13:45: Lunch Break

Chairperson: Claudia Backes (University of Heidelberg, Germany)

13:45 – 14:25: **Valeria Nicolosi** (Trinity College Dublin, Ireland) K

Processing and applications of two-dimensional nanosheet inks

14:25 – 14:40: **Miriam Rodriguez Gonzalez** (KU Leuven, Belgium) O

Multicomponent Covalent Chemical Patterning of Graphene

14:40 – 14:55: **Tim Nowack** (University of Heidelberg, Germany) O

Covalent functionalization of photoluminescent liquid-exfoliated WS₂ nanosheets

14:55 – 15:10: **Ji Liu** (Trinity College Dublin, Ireland) O

Electromagnetic interference shielding materials based on assembly of Ti₃C₂T_x MXene

15:10 – 15:25: **Manuela Melucci** (CNR-ISOF, Italy) O

Graphene composites for enhanced drinking water purification

15:25 – 15:55: Posters Session 1

15:55– 16:15: Break & Posters Session

Chairperson: Xinliang Feng (TU Dresden / cfaed, Germany)

- 16:15 – 16:45: **Claudia Backes** (University of Heidelberg, Germany) I
The role of defects in liquid-exfoliated nanosheets: from degradation to functionalisation
- 16:45 – 17:15: **Ute Kaiser** (Ulm University, Germany) I
Chemistry of low-dimensional materials on the atomic level
- 17:15 – 17:30: **Alessandro Kovtun** (CNR-ISOF, Italy) O
Graphene Oxide as promoter for chemical reactions monitored by X-Ray Photoelectron spectroscopy
- 17:30 – 17:45: **Michael Kinyanjui** (Ulm University, Germany) O
Imaging the atomic-scale effects of controlled disorder on an ordered electronic state in 2D quantum materials
- 17:45 – 18:00: **Vishnu Sreepal** (University of Manchester, UK) O
Two-Dimensional Covalent Crystals by Chemical Conversion of Thin van der Waals Materials
- 18:00 – 18:15: **Haoyuan Qi** (Ulm University, Germany) O
Towards atomic resolution imaging of beam-sensitive 2D polymers and metal-organic frameworks



Wednesday (01/09/2021)

// Workshop 1

Chairperson: Artur Ciesielski (University of Strasbourg, France)

- 09:00 – 09:30: **Steven De Feyter** (KU Leuven, Belgium) I
Formation and functionalization of 2D materials: a molecular approach
- 09:30 – 09:45: **Alex Boschi** (CNR-ISOF, Italy) O
Charge transport mechanisms in GRM thin films: interplay between different length scales
- 09:45 – 10:00: **Andrea Mescola** (Istituto Nanoscienze, CNR Nano S3, Italy) O
Frictional Response of Texture Induced Strained Graphene
- 10:00 – 10:15: **Michal Otyepka** (CATRIN, Palacký University Olomouc, Czech Republic) O
Graphene derivatives for energy storage

10:15– 11:00: Break & Posters Session

Chairperson: Steven De Feyter (KU Leuven, Belgium)

- 11:00 – 11:30: **Thomas Heine** (TU Dresden, Germany) I
Topological Two-Dimensional Polymers: a chemistry way towards quasiparticle physics
- 11:30 – 11:45: **Vito Di Noto** (University of Padova, Italy) O
Hierarchical Electrocatalysts for the oxygen reduction reaction with a Graphene “Core” and a Carbon Nitride “Shell” exhibiting a Low Pt loading
- 11:45 – 12:00: **Jinhua Sun** (Chalmers University of Technology, Sweden) O
Critical role of functional groups containing N and S on graphene surface for stable and fast charging Li-S batteries
- 12:00 – 12:15: **Alvaro Seijas-Da Silva** (ICMOL (Universidad de Valencia), Spain) O
Molecular Engineering of Hybrid Layered Double Hydroxides for Energy Applications
- 12:15 – 12:30: **David Bodesheim** (TU Dresden, Germany) O
In silico polymerization of 2D Polymers at water-surfactant monolayer interfaces
- 12:30 – 12:45: **Sebastian Grieger** (University of Heidelberg, Germany) O
Site selective oxidation of monolayered liquid-exfoliated WS₂ by shielding the basal plane through adsorption of a facial amphiphile
- 12:45 – 13:00: **Christopher Leist** (Ulm University, Germany) O
Neural-network-based investigation of defect-rich carbon monolayers

13:00 – 14:00: Lunch Break

// Workshop 2

Chairperson: Thomas Heine (TU Dresden, Germany)

- 14:00 – 14:30: **Giovanni Cuniberti** (TU Dresden, Germany) I
Hofstadter’s butterfly made labs accessible via 2D-COFs?
- 14:30 – 14:45: **Ganna Gryn’ova** (Heidelberg Institute for Theoretical Studies (HITS gGmbH), Germany) O
Nanographene Catalysts for the Oxygen Reduction Reaction

- 14:45 – 15:00: **Yingying Zhang** (TU Dresden, Germany) O
A statistical model for representing stacking disorder of 2D covalent organic frameworks
- 15:00 – 15:15: **Miki Bonacci** (Università di Modena e Reggio Emilia, Italy) O
Excitonic effects in graphene-like C3N
- 15:15 – 15:30: **Srdjan Stavrić** (University of Trieste, Italy) O
Carbide Formation at Graphene/Nickel Interface: The Decisive Role of Graphene Orientation
- 15:30 – 15:45: **Antonios Raptakis** (TU Dresden, Germany) O
Predicting the bulk modulus of single-layer 2D COFs from their molecular building-blocks properties

15:45– 16:45: Break & Posters Session

Chairperson: Andrea Candini (CNR-ISOF, Italy)

- 16:45 – 17:00: **Florian Arnold** (TU Dresden, Germany) O
The Importance of Relaxation Effects on the Properties of Twisted van der Waals Materials
- 17:00 – 17:15: **Donato Civita** (University of Graz, Austria) O
Single-molecule study of the intermediate steps in a coupling reaction
- 17:15 – 17:30: **Iosif Tantis** (RCPTM/ Czech Advanced Technology and Research Institute, Czech Republic) O
Covalently Interlinked Graphene Sheets with Sulfur-Chains Enable Superior Lithium Sulfur Battery Cathodes at Full-Mass Level
- 17:30 – 17:45: **Claudio Gasparini** (CNR-ISOF, Italy) O
Enhancing triboelectric performances of electrospun poly(vinylidene fluoride) with graphene oxide sheets
- 17:45 – 18:00: **Minghao Yu** (TU Dresden, Germany) O
High-power energy storage enabled by 2D layered materials
- 18:00 – 18:15: **Edoardo Raciti** (University of Trieste, Italy) O
Defect-modulated photocatalytic response in 2D carbon nitride: a joint computational and experimental study

// Workshop3

Chairperson: Valentina Benfenati (CNR, Italy)

- 09:00 – 09:30: **Lucia Gemma Delogu** (University of Padua, Italy) I
2Dmat Immune profiling by High-Dimensional Approaches
- 09:30 – 09:45: **Jinhua Li** (University of Chemistry and Technology Prague, Czech Republic) O
Electron Transfer Mediated Antibacterial Property of 2D Materials: From Graphene to MXene
- 09:45 – 10:00: **Giada Cellot** (International School for Advanced Studies (SISSA), Italy) O
Graphene oxide as nanotool to target dysfunctional neuronal plasticity: a synaptic approach to anxiety disorders
- 10:00 – 10:15: **Vasiliki Benekou** (CNR-ISOF, Italy) O
Tuning the electrode work function by deposition of chemically functionalized MXenes-An SPM study

10:15– 11:00: Break & Posters Session

Chairperson: Alberto Bianco (CNRS, France)

- 11:00 – 11:30: **Maurizio Prato** (Università di Trieste (biomaGUNE), Italy) I
Recent Developments in the Chemistry of Graphene and Other 2D Materials
- 11:30 – 11:45: **Barbara Zanfrognini** (CNR-ISOF, Italy) O
All-graphene flexible electrodes: novel platforms for wearable biosensing
- 11:45 – 12:00: **Kannan Balasubramanian** (Humboldt-Universität zu Berlin, Germany) O
Electrochemistry at the edge of a single graphene sheet
- 12:00 – 12:15: **Sara Khaliha** (CNR ISOF, Italy) O
The role of graphene oxide ‘defects’ on the adsorption of emerging water contaminants from water
- 12:15 – 12:30: **Lucas Jacquemin** (CNRS, France) O
Investigation of radical formation on chemically modified graphene oxide under near infrared irradiation
- 12:30 – 12:45: **Ylea Vlamidis** (Istituto Italiano di Tecnologia, Italy) O
CVD graphene coating of Cu cables for low voltage domestic and industrial wiring

12:45 – 14:00: Lunch Break

Industrial Forum

Chairperson: Vincenzo Palermo (Italian National Research Council (CNR), Italy)

- 14:00 – 14:20: **Francesco Gazza** (Centro Ricerche FIAT, Italy) |
Graphene: opportunities for multifunctional lightweight structures in automotive sector
- 14:20 – 14:40: **Maurizia Brunetti** (Gruppo Hera, Italy) |
Graphene oxide in the multi-barrier system provided by the Water Safety Plans
- 14:40 – 15:00: **Francesco Bonaccorso** (BeDimensional, Italy) |
Solution processed 2D crystals for energy applications
- 15:00 – 15:20: **Simone Ligi** (Graphene-XT, Italy) |
2D material for lubrication, a commercial application
- 15:20 – 15:35: **Antonio Bianchi** (ISOF-CNR, Italy) O
Graphene oxide coating of hollow fibers for simultaneous adsorption and filtration in water purification
- 15:35 – 15:55: **Cristina Bertoni** (Electrolux, Italy) / **Alessandro Migliavacca** (Rold R-Lab, Italy) O
Advanced water and air quality sensing through 2D nanomaterials for smart appliances and smart homes

15:55– 16:45: Break & Posters Session

Chairperson: Fouzia Hannour (Qatar Free Zones Authority, Qatar)

- 16:45 – 17:05: **Sabrina Conoci** (STMICROELECTRONICS - U. Messina, Italy) |
Carbon dots as radiosensitizers in tumor treatment
- 17:05 – 17:25: **Aldo Di Carlo** (University of Rome "Tor Vergata", Italy) |
The fundamental role of two-dimensional materials for perovskite solar modules and panels
- 17:25 – 17:45: **Rune Wendelbo** (Abalonyx, Norway) |
Abalonyx' expansion plan for GO production and applications
- 17:45 – 18:05: **Meganne Christian** (CNR/Graphene Factory, Italy) |
Opportunities for 2D materials to facilitate research in extreme environments



Thursday (02/09/2021)

Chairperson: Manuela Melucci (CNR-ISOF, Italy)

- 09:00 – 09:30: **Camilla Coletti** (IIT Pisa, Italy) |
Synthesis and Stabilization of Large-Scale Monolayer 1T'-MoTe₂
- 09:30 – 09:45: **Natalya Vassilyeva** (Instituto de Ciencia Molecular, Spain) O
Solution-processed Janus 2D-layers
- 09:45 – 10:00: **Luca Basta** (Scuola Normale Superiore, Italy) O
Selective Covalent Organic Functionalization of Patterned Graphene Via 1,3-Dipolar Cycloaddition
- 10:00 – 10:15: **Marco Gobbi** (CIC nanoGUNE, Spain) O
Tuning superconductivity in large-area NbSe₂ monolayers via molecular functionalization
- 10:15 – 10:30: **Ayush Tyagi** (Scuola Normale Superiore, Italy) O
Ultraclean high-mobility graphene on technologically relevant substrate
- 10:30 – 10:45: **Zhenyuan Xia** (IMS-Chalmers, Sweden) O
Electrophoretic deposition of graphene-related materials for positive electrodes in structural batteries

10:45– 11:00: Break & Posters Session

Chairperson: Camilla Coletti (IIT, Italy)

- 11:00 – 11:40: **Kian Ping Loh** (National University Singapore, Singapore) K
Covalent organic framework for energy applications
- 11:40 – 12:10: **Costas Galiotis** (FORTH/ ICE-HT and University of Patras, Greece) |
Real-Time monitoring and kinetic studies of graphene growth on solid and liquid copper
- 12:10 – 12:40: **Cecilia Mattevi** (Imperial College London, UK) |
Precise synthesis of 2D crystals for energy applications
- 12:40 – 13:10: **Gregory F. Schneider** (Leiden University, The Netherlands) |
From polycyclic aromatic hydrocarbons to nanopore-nanogap devices

13:10 – 14:00: Lunch Break

Chairperson: Gianaurelio Cuniberti (TU Dresden, Germany)

- 14:00 – 14:40: **Xinliang Feng** (TU Dresden, Germany) K
Advances in Organic 2D Crystals
- 14:40 – 14:55: **Andrea Candini** (CNR-ISOF, Italy) O
The use of graphene electrodes for nanodevices with low-dimensional materials: the case of 1D graphene nanoribbons
- 14:55 – 15:10: **Leonardo Martini** (Fondazione Istituto Italiano Tecnologia, Italy) O
Scalable high-mobility graphene/hBN heterostructure
- 15:10 – 15:25: **Letizia Ferbel** (Scuola Normale Superiore, Italy) O
Rb-functionalized epitaxial graphene on SiC(0001)
- 15:25 – 15:55: **Artur Ciesielski** (University of Strasbourg, France) I
Functionalized graphene oxide: A versatile platform for sensing
- 15:55 – 16:40: Posters Session 2

16:40– 17:00: Break & Posters Session

Chairperson: Francesco Bonaccorso (IIT, Italy)

- 17:00 – 17:30: **Cinzia Casiraghi** (University of Manchester, UK) I
Water-based and Defect-free 2D Material Inks: from Printed Electronics to Biomedical Applications
- 17:30 – 17:45: **Francesca Urban** (Universite de Strasbourg, France) O
Field emission from WSe₂: A vertical field effect transistor
- 17:45 – 18:00: **Elia Turco** (EMPA, Switzerland) O
Inducing carbon magnetism in nanographenes
- 18:00 – 18:15: **Ye Wang** (University of Strasbourg, France) O
Collective Dipole-Dominated Doping of Transition Metal Dichalcogenides: Orientation and Magnitude Control via the Supramolecular Approach



Friday (03/09/2021)

Chairperson: Ute Kaiser (Ulm University, Germany)

- 09:00 – 09:30: **Zdenek Sofer** (UCT Prague, Czech Republic) I
Chemistry of 2D graphene analogues – silicene and germanene
- 09:30 – 09:45: **Ji Ma** (TU Dresden, Germany) O
Curved Nanographenes and Graphene Nanoribbons: Bottom-up Synthesis and Characterizations
- 09:45 – 10:00: **Sebastiano Mantovani** (CNR-Isof Bologna, Italy) O
High-performance synthesis of functionalized graphene oxide nanosheets for water remediation
- 10:00 – 10:15: **Isaac Brotons Alcázar** (Universitat de Valencia, Spain) O
MnPS₃: Exfoliation and Stabilization with different Capping Agents

10:15– 10:45: Break & Posters Session

Chairperson: Xinliang Feng (TU Dresden / cfaed, Germany)

- 10:45 – 11:15: Posters Session 3
- 11:15 – 11:30: **Gangamalliah Velpula** (KU Leuven, Belgium) O
Graphene Meets Ionic Liquids: Fermi Level Engineering via Electrostatic Forces
- 11:30 – 11:45: **Chun Ma** (University of Strasbourg, France) O
Stitch up the Grain Boundaries in WS₂ Monolayers with Conjugated Molecules
- 11:45 – 12:00: **Hadi Arjmandi Tash** (Leiden University, The Netherlands) O
Water Surface Unlocks Chemo-Mechanical Properties of Graphene
- 12:00 – 12:15: **Lin Jiang** (Leiden University, The Netherlands) O
Pre-doped oxygenated defects activate nitrogen-doped graphene for the oxygen reduction reaction
- 12:15 – 12:45: **Stefano Agnoli** (University of Padova, Italy) I
Exploring the Flatland of 2D materials by electrochemical STM: visualization of the active sites for the hydrogen evolution reaction with atomic scale precision

12:45 – 13:45: Lunch Break

Chairperson: Vincenzo Palermo (Italian National Research Council (CNR), Italy)

13:45 – 14:15: **Valentina Benfenati** (CNR, Italy) |

Graphene interfaces and devices for selective modulation of glial cells

14:15 – 14:45: **Alberto Bianco** (CNRS Strasbourg, France) |

Carbon dots for photodynamic therapy and imaging

14:45 – 15:15: **Andrey Turchanin** (Friedrich Schiller University Jena, Germany) |

van der Waals and Lateral Heterostructures of Organic and Inorganic 2D Materials:

Synthesis and Device Applications

15:15 – 15:45: **Maurizio Peruzzini** (ICCOM CNR, Italy) |

Chemistry and Catalysis Mediated by 2D Black Phosphorus Decorated with Transition Metals Species

15:45 – 16:00: Closing remarks