

TENTATIVE PROGRAM (as of 04/11/2021)

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

Conference Time Zone – Madrid, Spain (GMT+1)



Tuesday (02/11/2021) – Plenary Session

- 09:00 – 09:40: **Andras Kis** (EPFL, Switzerland) K
Exciton manipulation and transport in 2D semiconductor heterostructures
- 09:40 – 09:55: **Andrea Liscio** (National Research Council of Italy (CNR), Italy) O
Multiscale Charge Transport in van der Waals Thin Films: Reduced Graphene Oxide as a Case Study
- 09:55 – 10:10: **Antonios Raptakis** (TU Dresden / Institute for Materials Science, Germany) O
Predicting the electronic gap of single-layer 2D COFs from their molecular building-blocks
- 10:10– 10:30: *Break*
- 10:30 – 11:00: **Daniel Neumaier** (AMO / University of Wuppertal, Germany) I
Graphene based flexible radio-frequency electronics: Current status and major challenges
- 11:00 – 11:30: **Wojciech Knap** (Université de Montpellier, France) I
Graphene Plasmonic Crystals for Terahertz radiation amplification
- 11:30 – 12:00: **Klaas-Jan Tielrooij** (ICN2, Spain) I
The thermal conductivity of the Dirac fluid at room temperature
- 12:00 – 12:30: **Guillaume Cassabois** (Université Montpellier, France) I
Deep-ultraviolet spectroscopy in hexagonal boron nitride: from bulk to monolayer
- 12:30 – 13:00: ePoster Session
- 13:00 – 14:00: *Lunch Break*
- 14:00 – 14:30: **Roman Gorbachev** (The University of Manchester, UK) I
Atomic reconstruction in twisted TMD interfaces and their electronic properties
- 14:30 – 14:45: **Francisco Sanchez-Ochoa** (Universidad Nacional Autonoma de Mexico, Mexico) O
Pseudo magnetization in twisted bilayer graphene under hydrostatic pressure
- 14:45 – 15:00: **Jesús Sánchez** (Universidad Nacional Autónoma de México, Mexico) O
Steering the current flow in twisted bilayer graphene
- 15:00 – 15:30: **Ke Wang** (University of Minnesota, USA) I
Mesoscopic Transport and Twistronics in Gate-defined Van der Waals Nanostructures
- 15:30 – 15:45: *Break*
- 15:45 – 16:15: **Emiliano Pallecchi** (IEMN-Univ. Lille, France) I
Non-volatile analog RF-switches based on 2D materials for 5G/6G applications
- 16:15 – 16:30: **Itai Epstein** (Tel Aviv University, Israel) O
Nanometer-scale Cavities for Mid-infrared Light Based on Acoustic-graphene-plasmons
- 16:30 – 17:10: **Tomas Palacio** (MIT, USA) K
The Coming of Age for Two-Dimensional Electronics
- 17:10 – 17:50: **Eric Pop** (Stanford University, USA) K
Electronic, Thermal, and (Some) Unusual Applications of 2D Materials
- 17:50 – 18:05: **Luca Francaviglia** (Lawrence Berkeley National Laboratory, USA) O
Optimized mapping of nanoscale heterogeneity in transition metal dichalcogenides enabled by sample design



Wednesday (03/11/2021) – Plenary Session

- 09:00 – 09:30: **Alberto Saiani** (University of Manchester, UK) I
Designing GO-Peptide hybrid hydrogels for tissue engineering applications
- 09:30 – 09:45: **Martin Šilhavík** (Institute of Physics of the Czech Academy of Sciences, Czech Republic) O
Synthesis of Superelastic Graphene Aerogels
- 09:45 – 10:15: **Lucia Gemma Delogu** (University of Padua, Italy) I
Biomedical applications of graphene: high dimensional approaches on immune cells
- 10:15 – 10:20: **Elena Pinilla Cienfuegos** (Universitat Politècnica de València, Spain) PF
Graphene functionalization with SARS-CoV-2 antibodies

10:20– 10:45: *Break*

- 10:45 – 11:15: **Laura Fumagalli** (University of Manchester, UK) I
Probing electric polarization on the atomic scale: the case of van der Waals heterostructures and water confined inside
- 11:15 – 11:30: **Konrád Kandrai** (Centre for Energy Research, Hungary) O
Evidence for room temperature quantum spin Hall state in the layered mineral jacutingaite (Pt₂HgSe₃)
- 11:30 – 11:45: **Zhaojun Li** (Uppsala University, Sweden) O
Mechanistic Insight to the Chemical Treatments of Monolayer Transition Metal Disulfides for Photoluminescence Enhancement
- 11:45 – 12:00: **Esteban Rodriguez** (Universidad de Chile, Chile) O
Spin-polarized tunable photocurrents
- 12:00 – 12:15: **Jose Mella** (University of Chile, Chile) O
The robustness of spin-polarized edge states in a two-dimensional semimetal without inversion symmetry
- 12:15 – 12:55: **Marija Drndić** (University of Pennsylvania, USA) K
Advances in room temperature 2D ferromagnets

12:55– 14:00: *Lunch Break*

- 14:00 – 14:30: **Yoshihiro Iwasa** (University of Tokyo, Japan) I
Emergent optical functionalities of van der Waals heterostructures of transition metal dichalcogenides
- 14:30 – 15:10: **Kin Fai Mak** (Cornell University, USA) K
Semiconductor moiré materials
- 15:10 – 15:40: **Kwabena Bediako** (University of California Berkeley, USA) I
Mapping intrinsic and extrinsic strain fields in moiré heterostructures

15:40 – 16:00: *Break*

- 16:00 – 16:15: **Stefan Jarić** (BioSense Institute, Serbia) O
Fast on-site detection of Ochratoxin A by the graphene-based field-effect transistors
- 16:15 – 16:30: **Fernando Jimenez Urbanos** (Fondation ciRFC, France) O
Ultrasensitive Mercury (II) Detection Platform by Engineering MoS₂-Based Field-Effect Transistors
- 16:30 – 16:45: **Prabhat Kumar** (Institute of Physics of the Czech Academy of Sciences, Czech Republic) O
3D-Graphene Based Pressure and Strain Sensor
- 16:45 – 17:00: **Enrique Munoz** (Pontificia Universidad Católica de Chile, Chile) O
Chemical sensing with graphene: A quantum field theory perspective
- 17:00 – 17:40: **Andrea Alu** (CUNY, USA)
Title to be defined



Wednesday (03/11/2021) – 2D-HAPES2021 // Workshop

- 09:00 – 09:45: **Michael Graetzel** (EPFL, Switzerland) P
Innovative spacer molecules for 2D perovskites enhance PV performance
- 09:45 – 10:25: **Stefaan De Wolf** (KAUST, Saudi Arabia) K
Perovskite tandem solar cells
- 10:25 – 11:00: *Break*
- 11:00 – 11:30: **Antonio Agresti** (Università degli Studi di Roma “Tor Vergata”, Italy) I
Title to be defined
- 11:30 – 12:00: **Sebastiano Bellani** (BeDimensional, Italy) I
Solution-processed 2D materials for perovskite solar cells
- 12:00 – 12:15: **Yang Li** (Institute of Microstructure Technology, Karlsruhe Institute of Technology, Germany) O
Photoluminescence and Amplified Spontaneous Emission in Quasi-2D and 3D Perovskite: Influences of Excitonic Versus Free Carrier Emission
- 12:15 – 12:45: **Danila Saranin** (NUST MISIS, Russia) I
2D materials for stabilization of p-i-n perovskite solar cells
- 12:45 – 14:00: *Lunch Break*
- 14:00 – 14:30: **Piotr Cegielski** (AMO GmbH, Germany) I
Perovskite On-Chip Lasers for Photonic Integrated Circuits
- 14:30 – 15:00: **George Kakavelakis** (University of Cambridge / CGC, UK) I
Perovskite solar cells based on layered materials
- 15:00 – 15:30: **Hanna Pazniak** (University of Duisburg-Essen, Germany) I
Mastering MXenes Properties for Application in Perovskite Solar Cells
- 15:30 – 16:10: **Barry P. Rand** (Princeton University, USA) K
Brighter metal halide perovskite light emitting diodes via heat management
- 16:10 – 16:40: *Break*
- 16:40 – 17:10: **Ferry Prins** (UAM / IFIMAC, Spain) I
Exciton Transport in 2D Metal-Halide Perovskites
- 17:10 – 17:50: **Wanyi Nie** (Los Alamos National Laboratory, USA) K
Carrier transport and device applications of 2D perovskite materials
- 17:50 – 18:05: **Eugenia Vasileiadou** (Northwestern University, USA) O
Stability of 2D Hybrid Lead Halide Perovskites: Perspective from Bulk Crystals and Thin Films



Thursday (04/11/2021) – Plenary Session

09:00 – 09:30: Andrew J. Pollard (National Physical Laboratory, UK)	I
Advances in Standardisation and Quality Control	
09:30 – 10:00: Chao Gao (GaoxiTech/Zhejiang University, China)	I
Title to be defined	
10:00 – 10:15: Yui Ogawa (NTT Basic Research Laboratories, NTT Corporation, Japan)	O
Real-time monitoring of graphene CVD growth using ultraviolet reflection	
10:15 – 10:30: Rasuole Lukose (IHP, Germany)	O
Transfer of Graphene from 200 mm Epitaxial Si/Ge(100) Wafers and it's post-processing	
 10:30– 11:00: <i>Break</i>	
 11:00 – 11:15: Vincent Malesys (ONERA, France)	O
Development of a graphene and fluorographene based gas sensor	
11:15 – 11:30: Hossein Beydaghi (Bedimensional S.p.A, Italy)	O
Advanced 3D printed electrode based on Si and wet-jet milled few layers graphene for Li-ion batteries	
11:30 – 11:45: Viktor Sanderyd (Graphmatech , Sweden)	O
Metal-Graphene Composites – Challenges and Opportunities	
11:45 – 12:15: Kari Hjelt (Chalmers Industrial Technic, Sweden)	I
Commercialization of Graphene Flagship research	
12:15 – 12:45: Johan Ek Weis (SIO Grafen, Sweden)	I
Sweden aims to be in the top 10 countries at using graphene for industrial needs	
12:45 – 13:15: Gordon Harling (CMC Microsystems, Canada)	I
An overview of research and resources in Canada	
 13:15 – 14:00: <i>Lunch Break</i>	
 14:00 – 14:30: Claudia Backes (University of Kassel, Germany)	I
Production of organic nanomaterials by liquid phase exfoliation	
14:30 – 15:00: Ageeth Bol (Eindhoven University of Technology, The Netherlands)	I
Tailoring 2D transition metal chalcogenides by atomic layer deposition	
15:00 – 15:15: Ling-Xuan Qian (University of Electronic Science and Technology of China, China)	O
High-quality graphene growth via roll-to-roll chemical vapor deposition	
15:15 – 15:30: Aleksandra Dabrowska (University of Warsaw, Poland)	O
Two Stage Epitaxial Growth of Boron Nitride – Advantages and Prospects	
15:30 – 15:45: Siddika Mertdinç (Istanbul Technical University, Turkey)	O
Synthesis of multilayer graphene encapsulated iron nanoparticles using chemical vapor deposition from Fe-sulphate based precursors	
 15:45 – 16:15: <i>Break</i>	
 16:15 – 16:45: Luiz Gustavo Cancado (UFMG, Brazil)	I
Metrological framework for quality control of mass-produced graphene	
16:45 – 17:00: Miguel Sinusia Lozano (Universitat Politècnica de València, Spain)	O
PECVD of Graphene on sapphire substrates: A Design of Experiments (DoE) approach	
17:00 – 17:15: David Bodesheim (TU Dresden, Germany)	O
In silico polymerization of 2D Polymers at water-surfactant monolayer interfaces	
17:15 – 17:30: Xiaoyan Zhang (Chalmers University of Technology, Sweden)	O
Chemical functionalization of 2D materials	
17:30 – 17:45: Jaime Sánchez (Chalmers University of Technology, Spain)	O
All-Electrochemical nanofabrication of stacked ternary metal sulfide/graphene electrodes for high performance alkaline batteries	



Thursday (04/11/2021) - 2D-HAPES2021 // Workshop

- 09:00 – 09:40: **Giulia Grancini** (Università degli studi di Pavia, Italy) K
 Understanding and Optimizing Interface Energetics and Processes: an essential step towards efficient and stable 2D/3D perovskite solar cells
- 09:40 – 09:55: **Saba Gharibzadeh** (Karlsruhe Institute of Technology, Germany) O
 Simultaneous Interfacial and Grain-Boundary Passivation for Highly Efficient Inverted Methylammonium-Free Perovskite Solar Cells
- 09:55 – 10:10: **Yury Kapitonov** (St.Petersburg State University, Russia) O
 Hybrid Organic-Inorganic Halide Post-Perovskite 3-Cyanopyridinium Lead Tribromide
- 10:10 – 10:25: **Mala Maruthi** (Indian Institute of Technology, India) O
 Broad emission from the structural distortions induced by substituting trivalent element Sb³⁺ in low dimensional halide perovskites
- 10:25– 11:00: *Break*
- 11:00 – 11:30: **Byungha Shin** (KAIST, Korea) I
 Efficient, Stable Silicon Tandem Cells Enabled by Anion-engineered Wide-Bandgap Perovskites Semiconductor Series
- 11:30 – 12:10: **Shengzhong Liu** (Shaanxi Normal University, China) K
 Title to be defined
- 12:10 – 12:25: **Kshetra mohan Dehury** (Indian Institute of Technology Delhi, India) O
 Linear and Nonlinear Optical Excitons in Primary Cyclic Ammonium Based Inorganic-Organic Hybrid
- 12:25 – 13:00: ePoster Session
- 13:00 – 14:00: *Lunch Break*



Friday (05/11/2021) – Plenary Session

- 09:00 – 09:15: **Oliver Burton** (University of Cambridge, UK) O
A Peeling Systematic Study: Holistic Catalyst Design for 2D Material Application
- 09:15 – 09:30: **Mirko Frappa** (ITM-CNR, Italy) O
Enhancement of PVDF-based membranes with 2D materials for efficient performance in Membrane Distillation and Membrane Crystallization
- 09:30 – 09:45: **Rodolfo Fernández-Martínez** (CIEMAT, Spain) O
Suitability of NiO-ZnO-rGO sorbents for removal of hydrogen sulphide at intermediate temperatures
- 09:45 – 10:00: **Nikodem Szpak** (University of Duisburg-Essen, Germany) O
Gradient-index electron optics in graphene p-n junctions
- 10:00 – 10:15: **Ekaterina Sukhanova** (Institute of Biochemical Physics NM Emanuel, Russia) O
2D carbon-metal frameworks for photochemical reactions promotion
- 10:15 – 10:30: **Vit Jakubsky** (Nuclear Physics Institute of the CAS, Czech Republic) O
Super-Klein tunneling of Dirac fermions through electrostatic gratings in graphene
- 10:30– 11:00: *Break*
- 11:00 – 11:15: **Aleksandr Rodin** (Yale-NUS College, Singapore) O
Julia Library for QFT in Graphene
- 11:15 – 11:30: **Fernan Saiz** (King Abdullah University of Science and Technology, Saudi Arabia) O
Atomistic Modelling of Point Defects in Amorphous and Crystalline Phases of Ultra-thin Boron Nitride
- 11:30 – 11:45: **Jeremy A Good** (Cryogenic Ltd, UK) O
Title to be defined
- 11:45 – 12:15: **Hanako Okuno** (CEA, France) I
Title to be defined
- 12:15 – 12:30: **Jakub Jagiełło** (Łukasiewicz Research Network–Inst. of Microelectronics and Photonics, Poland) O
Determining the number of graphene layers based on Raman response of the SiC substrate
- 12:30: *Closing*