TENTATIVE PROGRAM (as of 14/02/2018)

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

THURSDAY (22/02/2018)

08:15 – 09:00: Registration

09:00 – 09:15: Opening Ceremony- Welcome and Introduction.

09:15 – 09:45: **Tony F. Heinz** (Stanford University, USA)  
*Many-body effects in 2D semiconductors - tuning both the optical and electronic properties of atomically thin materials*

09:45 – 10:15: **Joshua A. Robinson** (Pennsylvania State University, USA)  
*Atomically-Thin Materials and Heterostructures*

10:15– 10:45: Coffee Break / Poster Session & Exhibition

10:45 – 11:15: **Francesco Bonaccorso** (IIT-Graphene Labs / BeDimensional, Italy)  
*2D-crystals-based composites for energy applications*

11:15 – 11:30: **Argyrios Varonides** (University of Scranton, USA)  
*New modeling for thermionic-photo-current and open-circuit voltage in Graphene/Insulator/n-Si (GIS) Schottky Solar Cells*

11:30 – 11:45: **Andrew Pollard** (National Physical Laboratory (NPL), UK)  
*Standardisation of terminology and measurement for graphene and related 2D materials*

11:45 – 12:15: **Elisa Riedo** (ASRC-CUNY, USA)  
*Diamene: Ultrahard Single Layer Diamond formed from two-layer Epitaxial Graphene upon Impact*

12:15 – 13:15: Luch (offered by the organization)

13:15 – 14:00: Poster Session & Exhibition

14:00 – 14:30: **Mark C. Hersam** (Northwestern University, USA)  
*Printable Two-Dimensional Nanomaterial Inks for Electronic and Energy Applications*

14:30 – 15:00: **Emanuel Tutuc** (The University of Texas, USA)  
*Graphene-based Interlayer Tunneling Field-Effect Transistors: Device Physics and Applications*

15:00 – 15:30: **Aron Cummings** (ICN2, Spain)  
*Spin transport in graphene interfaced with strong spin-orbit materials*

15:30– 16:00: Coffee Break / Poster Session & Exhibition

16:00 – 16:30: **Jean-Christophe Charlier** (UCLouvain, Belgium)  
*Electronic and optical properties of strained graphene and borophene*

16:30 – 16:45: **Liangbo Liang** (Oak Ridge National Laboratory, USA)  
*Predictive models for low-frequency Raman scattering in 2D materials*

16:45 – 17:00: **Issai Shlimak** (Bar Ilan University, Israel)  
*Optical and electrical properties of CVD grown monolayer graphene samples subjected to ion irradiation*

17:00– 17:15: **Jun Yan** (University of Massachusetts Amherst, USA)  
*Luminescent emission from 1s, 2s, 3s and 4s excitons of monolayer WSe2 in high magnetic fields*
17:15 – 17:30: Albert Rigosi (National Institute of Standards and Technology, USA)  
Probing the dielectric response of the interfacial buffer layer in epitaxial graphene via optical spectroscopy  
17:30 – 18:00: Rudolf Tromp (IBM Thomas J. Watson Research Center, USA)  
18:00 – 18:15: Damien Tristant (Rensselaer Polytechnic Institute, USA)  
Dynamical Stability of Supported Black and Blue Phosphorus  
18:15 – 18:30: Valentina Cantatore (Chalmers University of Technology, Sweden)  
Multi-Purpose Functionalization of Boron-Doped Graphene: insights from in silico experiments

FRIDAY (08/02/2018)

Parallel Session I: Production

08:45 – 09:15: Tom Fedolak (Graphenea Inc., USA)  
The Scaling of Reproducible Graphene for Industry Use  
09:15 – 09:30: William H. Douglas (2DLayer , USA)  
2D TMDC Materials Foundry and Wafer-Scale Synthesis  
09:30 – 09:45: Yaping Zhao (Shanghai Jiao Tong University, China)  
Scalable production of defect-free graphene sheets using rotor–stator mixer in supercritical CO2 and their applications  
09:45 – 10:00: Micah Green (Texas A&M University, USA)  
Scalable production of pristine graphene using electrochemical exfoliation  
10:00 – 10:15: Kyungnam Kang (Stevens Institute of Technology, USA)  
A study on the growth of WS2 homobilayers with controlled 0 and 60 degree stacking using two-step van der Waals epitaxy  
10:15 – 10:30: Neeraj Mishra (Instituto Italiano di tecnologia @NEST, Italy)  
Scalable metal-free CVD growth of graphene on sapphire  
10:30 – 11:00: Coffee Break / Poster Session & Exhibition

Parallel Session I: Applications

11:00 – 11:30: Elena Polyakova (Graphene Laboratories Inc., USA)  
Recent Progress in Commercialization of Graphene-based Thermoplastic and Thermoset Composites  
11:30 – 11:45: Tero Kulmala (SwissLitho AG, Switzerland)  
Low Damage NanoFabrication for 2D Material Devices and Beyond  
11:45 – 12:00: Yenny Hernandez (Universidad de los Andes, Colombia)  
Large thermoelectric figure of merit in graphene layered devices at low temperature

Parallel Session II: Applications

08:45 – 09:15: Vittorio Pellegrini (Graphene Labs – IIT, Italy)  
Graphene composites: from lab to market  
09:15 – 09:30: Maria Iliut (University of Manchester, UK)  
Graphene and water-based elastomers thin-film composites  
09:30– 10:00: Ray Gibbs (Haydale, UK)  
Near term commercial applications for Graphene, Composites and Conductive Pastes  
10:00 – 10:30: Kuan-Tsae Huang (AzTrong, USA/Taiwan)  
Challenges of Graphene Battery Commercialization  
10:30 – 11:00: Coffee Break / Poster Session & Exhibition

11:00 – 11:30: Yaqing Bie (MIT, USA)  
A MoTe2 LED and photodetector for silicon photonics
11:30 – 11:45: Mustafa Eginligil (Nanjing Tech University, China)
Light polarization and carrier density dependence of photocurrent in few layer graphene and monolayer MoS2
11:45 – 12:00: Junhui He (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences (CAS), China)
Highly Conductive Free-Standing Reduced Graphene Oxide Thin Films for Fast Photoelectric Devices

Parallel Session III: "Graphene and 2D Materials" Worldwide Initiatives

09:00 – 09:30: Kari Hjelt (Chalmers Industrial Technic, Sweden)
Graphene Flagship: bridging the gap from research to commercialization
09:30 – 10:00: Andy Zhou (Grafoid Inc., Canada)
Grafoid: Collaboration Is the Key to Graphene’s Commercialization
10:00 – 10:30: Antonio Correia (Phantoms Foundation, Spain)
"Graphene and 2D Materials" EUREKA Cluster: Fostering European Competitiveness

10:30 – 11:00: Coffee Break / Poster Session & Exhibition

Parallel Session III: Characterization

11:00 – 11:15: Heather Hill (National Institute of Standards and Technology, USA)
Probing the Charge Density Wave State in Bulk to Monolayer 2H-TaSe2 by Raman Spectroscopy
11:15 – 11:30: Barry Brennan (NPL, UK)
How Clean is My Graphene?: Understanding the Impact of Contamination Using ToF-SIMS Characterization
11:30 – 11:45: Andy Huber (neaspec GmbH, Germany)
THz Near-field Nanoscopy at 25 Nanometer Spatial Resolution
11:45 – 12:00: Stefan Hummel (GETec Microscopy GmbH, Austria)
Correlative in-situ AFM & SEM mechanical analysis of suspended 2D materials
12:00 – 12:15: Andrey Krayev (Horiba Scientific, USA)
Nanoscale Heterogeneities in Monolayer MoSe2 and WSe2 Revealed by Correlated SPM and TERS
12:15 – 12:30: Shan Zou (National Research Council Canada, Canada)
Characterization of solution processable graphene related materials

12:30 – 14:00. Lunch

Plenary Session

14:00 – 14:30: Kostas Kostarelos (The University of Manchester, UK)
The Transformation of Graphene and 2D Materials into Biomaterials
14:30 – 14:45: Irene de Lazaro (University of Manchester, UK)
A Graphene Oxide 2D Platform for Intracellular siRNA Delivery
14:45 – 15:00: Genhua Pan (University of Plymouth, UK)
Graphene biosensors for label-free detection of DNA and protein disease biomarkers
15:00 – 15:15: Patrick Senet (Université de Bourgogne Franche-Comté, France)
Monitoring the translocation of single polypeptides through MoS2 nanopores from ionic current fluctuations, lessons from all-atom molecular dynamics simulations

15:15 – 16:00: Coffee Break / Poster Session & Exhibition

16:00 – 16:30: Philip Kim (Harvard University, USA)
Electronic and Optoelectronic Physics in the van der Waals Heterojunctions
16:30 – 17:00: Paolo Samori (Université de Strasbourg, France)
When molecular science meets 2-D materials: combining multiple functions
17:00 – 17:15: Tengfei Cao (CUNY, USA)
Pressure-induced phase transition of bilayer epitaxial graphene: Computations meet the experiment
17:15 – 17:30: Enrique Munoz (Pontificia Universidad Catolica de Chile, Chile)
Analytic approach to magneto-strain tuning of electronic transport through a graphene nanobubble: perspectives for a strain sensor
17:30 – 17:45: Michael Zwolak (National Institute of Standards and Technology, USA)
Graphene deflectometry for sensing molecular and ionic processes at the nanoscale
17:45 – 18:00: Aravind Vijayaraghavan (University of Manchester, UK)
Capacitive pressure and touch sensors with suspended graphene-polymer heterostructure membranes
18:00 – 18:30: Cory Dean (Columbia University, USA)
Tunable degrees of Freedom in van der Waals heterostructures

18:30: Closing and GrapheneforUS2019 announcement