



TENTATIVE PROGRAM (as of 19/02/2020)

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



Thursday (20/02/2020)

08:00 – 08:45: *Registration*

08:45 – 09:00: *Opening Ceremony - Welcome and Introduction.*

09:00 – 09:30: **Walter A. de Heer** (Georgia Institute of Technology, USA) K

An epigraphene platform for coherent 1D nanoelectronics

09:30 – 10:00: **Jeewan Kim** (MIT, USA) K

Mixed-dimensional stackable electronics enabled by freestanding 2D/3D materials

10:00 – 10:20: **Denis Bandurin** (MIT, USA) I

Viscous electronics in graphene

10:20– 11:00 *Coffee Break / Poster Session & Exhibition*

11:00 – 11:30: **Alan C. Seabaugh** (University of Notre Dame, USA) K

2D Esaki junctions, Schottky-barrier and tunnel field-effect transistors, and the path to applications

11:30 – 11:50: **Bruno Dlubak** (CNRS/Thales - Université Paris-Saclay, France) I

2D Materials for Magnetic Tunnel Junctions

11:50 – 12:20: **Dmitri Basov** (Columbia University, USA) K

Plasmonic Nanostructures

12:20 – 12:35: **Viacheslav Semenenko** (University at Buffalo, USA) O

Plasmons in 1D Periodic Graphene Structures: S-Matrix Retrieving and T-Matrix Model Verification

12:35 – 13:30: *Lunch (offered by the organization) -Poster Session & Exhibition*

13:30 – 14:00: *Poster Session & Exhibition*

14:00 – 14:30: **Mark Hersam** (Northwestern University, USA) K

Solution-Processed 2D Materials for Next-Generation Lithium-Ion Batteries

14:30 – 14:45: **Mohamed Boukhicha** (BNL/SBU, USA) O

Large Scale LiC6 for Electronic Applications

14:45 – 15:15: **Frank Koppens** (ICREA/ICFO, Spain) K

Stacking and twisting 2D materials for quantum nano-optoelectronics

15:15 – 15:45: **Jing Kong** (MIT, USA) K

Synthesis of two-dimensional materials via chemical vapor deposition

15:45 – 16:00: **Benjamin Huet** (The Pennsylvania State University, USA) O

Mass production of CVD graphene, reliable transfer, and co-integration with TMDs

16:00 – 16:45: *Coffee Break / Poster Session & Exhibition*

16:45 – 17:15: **Joshua A. Robinson** (Pennsylvania State University, USA) K

Metals at the Atomic Limit

17:15 – 17:35: **Elisa Riedo** (NYU, USA) I

Pressure activated phase transitions in 2D materials

17:35 – 17:55: Shengxi Huang (PennState University, USA)	I
Janus Monolayer-Induced Abnormal Interlayer Coupling in 2D Heterostructures	
17:55– 18:10: Anshuman Kumar (IIT Bombay, India)	O
Engineering valley coherence in two dimensional heterostructures	
18:10– 18:30: Bruno Schuler (Lawrence Berkeley National Laboratory, USA)	I
Atomic Defects in 2D Semiconductors - From Chemical Doping to Quantum Technologies	



Friday (21/01/2020)

Parallel Session - I

09:00– 09:15: Francesco Lavini (NYU, USA)	O
Elasticity Measurements of Ultra-hard, Ultra-stiff Graphene Film via Atomic Force Microscopy Modulated Å-Indentation	
09:15 – 09:30: Piers Turner (National Physical Laboratory, UK)	O
International Interlaboratory Comparison of Raman Spectroscopy for CVD-grown Graphene	
09:30 – 09:45: Maruda Shanmugasundaram (HORIBA Scientific, USA)	O
Dry Transfer of van der Waals Crystals for Nanoscale Characterization of Buried Interfaces	
09:45 – 10:00: Nils Goedecke (Heidelberg Instruments Nano – SwissLitho AG, Switzerland)	O
Tools for precise shaping and non-invasive contacting of 2D materials	
10:00 – 10:15: Xiaoyu Jia (Max-Planck Institute for Polymer Research, Germany)	O
Kinetic Ionic Permeation and Interfacial Doping of Supported Graphene	

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

Parallel Session - II

09:00– 09:20: David Schmeltzer (City College of the City University of New York, USA)	I
Superconductivity in Graphene Induced by the Rotated Layer	
09:20 – 09:35: Sheikh Ahmed (University of Virginia, USA)	O
Using Novel Properties of Graphene for Designing Efficient Infrared Photodetectors	
09:35 – 09:50: Hong Seok Kang (Jeonju University, South Korea)	O
First-Principles Study of 2D Materials for Photochemical/Electrochemical Applications	
09:50 – 10:05: Maya Narayanan Nair (CUNY Advanced Science Research Center, USA)	O
Functionalization of graphene	
10:05 – 10:20: Subin Sahu (National Institute of Standards and Technology, USA)	O
Optimal transport and colossal ionic mechano-conductance in graphene crown ethers	

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

Parallel Session - III

10:45 – 11:05: Avetik Harutyunyan (Honda Research institute USA Inc., USA)	I
New mechanism for the growth of 2D materials	
11:05 – 11:25: Archana Venugopal (Texas Instruments, USA)	I
Graphene and the Analog Landscape	
11:25 – 11:45: Avery Luedtke (MilliporeSigma, USA)	I
Democratizing Two-Dimensional Materials	
11:45 – 12:05: Julien Petrizelli (Graphene Production, France)	I
State of the graphene market and industrial applications	
12:05 – 12:25: Cameron Runté (Grafoid Inc, Canada)	I
Introducing FLLTER, a division of Grafoid Inc for economical, sustainable, and scalable graphene-based water treatment	
12:25 – 12:40: Albert Rigosi (National Institute of Standards and Technology, USA)	O
Atypical quantized resistances in millimeter-scale epitaxial graphene p-n junctions	

Parallel Session - IV

10:45 – 11:05: Cory Dean (Columbia University, USA) Rotatable van der Waals Heterostructures	I
11:05 – 11:25: Xiaoyang Zhu (Columbia University, USA) Disassembling 2D van der Waals crystals into macroscopic monolayers and reassembling into artificial lattices	I
11:25 – 11:45: James Teherani (Columbia University, USA) New techniques for doping and contacts to 2D materials	I
11:45 – 12:00: Qianhui Shi (Columbia University, USA) Fractional quantum Hall effect in transition metal dichalcogenides	O
12:00 – 12:15: Sanghoon Chae (Columbia University, USA) 2D materials for light emission and phase modulation	O
12:15 – 12:30: Yusong Bai (Columbia University, USA) 1D Moire' excitons	O
12:40 – 14:00: <i>Lunch</i>	
14:00 – 15:00: Round table (Moderator Mauricio Terrones)	
15:00 – 15:30: Andrea Alu (CUNY-ASRC, USA) Hybrid Metasurfaces for Enhanced Light-Matter Interactions and Extreme Polariton Manipulation	K
15:30 – 16:00: Vinod Menon (CUNY, USA) Control of light-matter interaction in van der Waals materials	K
16:00 – 16:20: Gabriele Grosso (ASRC/CUNY, USA) Control of quantum light emission from 2D materials	I
16:20 – 16:45: <i>Coffee Break / Poster Session & Exhibition</i>	
16:45 – 17:15: Tony Low (University of Minnesota, USA) Pushing the fundamental limits of 2D plasmons	K
17:15 – 17:45: Sergio O. Valenzuela (ICREA/ICN2, Spain) Spin-orbit proximity phenomena and tunable spin-to-charge conversion in graphene	K
17:45 – 18:00: L. Antonio Benítez (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) Gate-tunable spin anisotropy in graphene – WS ₂ heterostructures at room temperature	O
18:00 – 18:15: Benoit Van Troeye (Rensselaer Polytechnic Institute, USA) Soliton signature in the phonon spectrum of twisted bilayer graphene	O
18:15 – 18:35: Ajit Srivastava (Emory University, USA) Single photons, phonons and spins in atomically thin WSe ₂	I
18:35: Closing and GrapheneForUS2021 announcement	