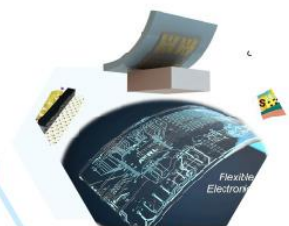
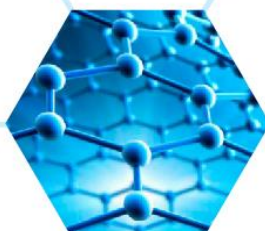
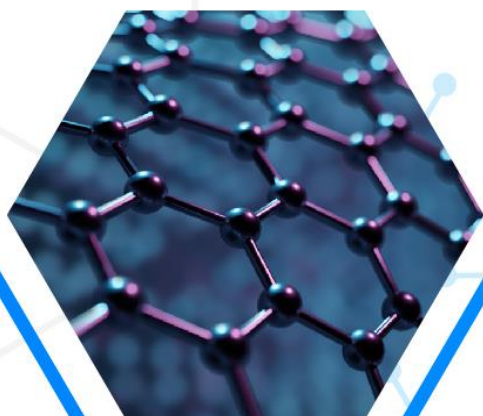


RPGR

Bengaluru, India — 2023

RECENT PROGRESS IN GRAPHENE AND 2D MATERIALS RESEARCH

20-23 NOVEMBER 2023 | VENUE: THE LALIT ASHOK BENGALURU



Program Schedule

MONDAY, 20 November, 2023

Registration Opens: 08:00

Welcome Note: 8:50-9:00, Grand Ballroom (GBR)

Session 1A, GBR, Session Chair: Arindam Ghosh

1A-1	09:00-09:30	[Keynote] Ajay Sood Insights into Quantum Topological Materials using Ultrafast Time Resolved Second Harmonic Generation
1A-2	09:30-10:00	[Invited] Ajay Soni Multibody Interactions and Symmetry Breaking Across the Charge Density Wave Transition of Transition Metal Dichalcogenides
1A-3	10:00-10:15	[Contributed] Medha Dandu Unveiling the spatial correlations of moiré excitons in WS ₂ /WSe ₂ through hyperspectral monochromated EELS
1A-4	10:15-10:30	[Contributed] Sourabh Jain Excited-state trions: parallels between van der Waals semiconductors and 2D quantum wells

Session 1B, Lalit 1-2, Session Chair: Kausik Majumdar

1B-1	09:00-09:30	[Invited] Vinod Menon Strong light-matter interaction in van der Waals materials
1B-2	09:30-10:00	[Invited] Sajal Dhara Towards Realization of Non-Hermitian PT-symmetry in Microcavity Exciton-Polaritons
1B-3	10:00-10:15	[Contributed] Tamaghna Chowdhury Tensile strain induced brightening of momentum forbidden dark excitons in monolayer WS ₂
1B-4	10:15-10:30	[Contributed] Sarthak Das Electrical control over valley polarization for charge excitonic species

Session 1C, Lalit 3-4, Session Chair: Atindra Nath Pal

1C-1	09:00-09:30	[Invited] Yoshihiro Iwasa Nonlinear transport and diode effect in transition metal dichalcogenide superconductors
1C-2	09:30-10:00	[Invited] Erik Henriksen Probing graphene with infrared light, and infrared light with graphene
1C-3	10:00-10:15	[Contributed] Radhika Soni Planar tunneling in twisted moiré heterostructures
1C-4	10:15-10:30	[Contributed] Nasir Ali Quantum Criticality of Ambipolar Metal-Insulator Transitions in Black Phosphorus

Inauguration Ceremony: 10:30-10:45, Grand Ballroom (GBR), Special Invitee- Bharat Ratna Prof. CNR Rao

COFFEE BREAK, 10:30-11:00

Session 2A, GBR, Session Chair: Ashish Arora		
2A-1	11:00-11:30	[Keynote] Young Hee lee Van der Waals Layered Magnetic Semiconductors
2A-2	11:30-12:00	[Invited] Andras Kis Exciton Manipulation and Transport in 2D Semiconductor Heterostructures
2A-3	12:00-12:15	[Contributed] Shreya Paul Stark shift of anisotropic excitons in few-layer ReS ₂
2A-4	12:15-12:30	[Contributed] Santosh Kumar Single photon emitters in monolayer WS ₂ emitting in the visible spectral range
Session 2B, Lalit 1-2, Session Chair: Debjani Karmakar		
2B-1	11:00-11:30	[Invited] Abhishek K. Singh Machine Learning Framework for Discovery of Novel Materials
2B-2	11:30-12:00	[Invited] Hridis Kumar Pal Effect of nonlocal interlayer hopping in twisted bilayer graphene
2B-3	12:00-12:15	[Contributed] Debasis Dutta Intrinsically nonreciprocal bulk plasmons in noncentrosymmetric magnetic heterostructures
2B-4	12:15-12:30	[Contributed] Pilkyung Moon Quasicrystalline Resonant States and Geometry of van der Waals Quasicrystals
Session 2C, Lalit 3-4, Session Chair: Adarsh K. V.		
2C-1	11:00-11:30	[Invited] Prasana Kumar Sahoo Electronic Grade 2D Lateral Heterostructures and Devices
2C-2	11:30-11:45	[Contributed] Pinaka Pani Tummala Vapor transport deposition of Transition Metal Tellurides (TMTs) and Ultra-Thin Tellurium nanosheets through Simulation-Guided Tellurization
2C-3	11:45-12:00	[Contributed] Martin Wilken Single source precursor pathway towards CVD of MoS ₂ thin films
2C-4	12:00-12:15	[Contributed] Naresh Shyaga Synthesis of Pristine and Nitrogen-Doped Graphene using solid precursors via CVD for SERS application
2C-5	12:15-12:30	[Contributed] Jean-Pierre Glauber Exploring gas phase processed tungsten sulfides for gas sensing applications
LUNCH BREAK: 12:30-14:00		
Poster session 1, Exhibition Hall		
P1	14:00-15:30	Poster Session
COFFEE BREAK: 15:30-16:00		

Session 3A, GBR, Session chair: Anindya Das		
3A-1	16:00-16:30	[Keynote] Andrea Ferrari Layered materials as a platform for quantum technologies
3A-2	16:30-17:00	[Invited] Manish Chhowalla Ultra-clean contacts on 2D semiconductors
3A-3	17:00-17:15	[Contributed] Debasish Biswasray Contact resistance for Metal-TMD heterostructures: Ab initio study
3A-4	17:15-17:30	[Contributed] Bikas C. Das Multifunctional Memristors Based on Two-Dimensional Layered Materials
Session 3B, Lalit 1-2, Session chair: Vidya Kochat		
3B-1	16:00-16:30	[Invited] Young-Woo Son Roles of interactions in layered materials
3B-2	16:30-17:00	[Invited] Johannes Lischner Electrons, excitons and phonons in moiré materials from atomistic simulations
3B-3	17:00-17:15	[Contributed] Devarshi Chakrabarty Exceptional Points in a Non-Hermitian anisotropic exciton-polariton pair system
3B-4	17:15-17:30	[Contributed] Anuj Kumar Singh Engineering of excitonic lineshape and valley dynamics in two dimensional semiconductors using low cost strain tuning
Session 3C, Lalit 3-4, Focus session on Startups and Hiring, Session Chair: U. Chandni		
3C-1	16:00-16:20	Manjunath Jyothinagar, KAS Technologies
3C-2	16:20-16:40	Gayathri HN, Quan2DTechnologies Pvt. Ltd.
3C-3	16:40-17:00	Deep Talukdar, Cryo Nano
3C-4	17:00-17:20	Solomon Jones, Terracarb Pvt. Ltd.
3C-5	17:20-18:00	Networking Session

TUESDAY, 21 November, 2023

Session 4A, GBR, Session Chair: Erik Henriksen

4A-1	09:00-09:30	[Keynote] Changgu Lee Electrical characterization of 2D ferromagnetic materials
4A-2	09:30-10:00	[Invited] Jorge Vallejo-Bustamante Singular orbital diamagnetism and paramagnetism in graphene
4A-3	10:00-10:15	[Contributed] Aparna Parappurath Band structure sensitive photoresponse in twisted bilayer graphene proximitized with WSe ₂
4A-4	10:15-10:30	[Contributed] Sk Md Obaidulla Room-temperature photoinduced interlayer exciton emission in atomically thin 2D-transition metal dichalcogenide/Organic van der Waals heterostructure

Session 4B, Lalit 1-2, Session Chair: Bent Weber

4B-1	09:00-09:30	[Invited] Saptarshi Das A Graphene-based smart "Electronic Tongue" for highly selective chemi-sensing
4B-2	09:30-10:00	[Invited] Saurabh Lodha Few-layer 2D TMD-based photo and strain detectors
4B-3	10:00-10:15	[Contributed] Pranav One-step simultaneous liquid phase exfoliation-induced chirality in graphene and their chirality-mediated microRNA delivery
4B-4	10:15-10:30	[Contributed] Sudarsan Majumder Ultra-thin chemically derived graphene electrodes for bottom-contacted organic thin-film transistors

Session 4C, Lalit 3-4, Session Chair: Ananth Govind Rajan

4C-1	09:00-09:30	[Invited] Amit Kumar Agarwal Intrinsic Hall and longitudinal non-linear charge transport
4C-2	09:30-10:00	[Invited] Wang Yao Layertronics and quantum geometric properties in twisted bilayers
4C-3	10:00-10:15	[Contributed] Debottam Mandal Dissipationless intrinsic third-order Hall effect
4C-4	10:15-10:30	[Contributed] N. Bijoy Are devices made with twisted bilayers of MoSe ₂ stable against sliding?

COFFEE BREAK, 10:30-11:00

Session 5A, GBR, Session Chair: Hridis Pal		
5A-1	11:00-11:30	[Keynote] Priya Mahadevan Why do twisted bilayers behave differently from their untwisted counterparts?
5A-2	11:30-12:00	[Invited] Jeil Jung Atomistic modeling of single and double moire patterned graphene and hexagonal boron nitride multilayer systems
5A-3	12:00-12:15	[Contributed] Takaaki V. Joya Shift current response in twisted double bilayer graphene
5A-4	12:15-12:30	[Contributed] Swastik Sahoo Straintronics Using the 2D-Xenes Platform
Session 5B, Lalit 1-2, Session Chair: M.M. Shaijumon		
5B-1	11:00-11:30	[Invited] Sandhya Susarla Atomic scale imaging of excitons in twisted two-dimensional materials
5B-2	11:30-12:00	[Invited] Goki Eda Upconversion light emission in plasmonic van der Waals tunnel diodes
5B-3	12:00-12:15	[Contributed] Navaneeth Krishnan K. Two-Dimensional MoS ₂ Photodetector: Role of Grain Boundaries and Optic-Nerve Functionality
5B-4	12:15-12:30	[Contributed] Pawan Kumar 200 mm Industrial reactor-based monolayer TMDCs growth and defectivity optimization
Session 5C, Lalit 3-4, Focus session on Scientific Publishing, Session Chair: Manish Jain		
5C-1	11:00-11:30	[Invited] Mayra Castro , Springer Nature
5C-2	11:30-12:00	[Invited] Hari Dahal , Physical Review Materials (APS)
5C-3	12:00-12:30	[Invited] Thomas Sharp , IOP Publishing
LUNCH BREAK: 12:30-14:00		
RPGR International Advisory Board (IAB) meeting, Lalit Board Room, 12:30-1.30 PM		
Poster session 2, Exhibition Hall		
P2	14:00-15:30	Poster Session
COFFEE BREAK: 15:30-16:00		

Session 6A, GBR, Focus session on Quantum technologies, Session Chair: Manish Chhowalla		
6A-1	16:00-16:30	[Keynote] Klaus Ensslin Graphene Quantum devices
6A-2	16:30-17:00	[Invited] Bent Weber Towards quantum electronics and optoelectronics with individual point defects in 2D semiconductors
6A-3	17:00-17:30	[Invited] Chandan Kumar Harnessing 2D Van der Waals Materials for Quantum Sensing Technology
Session 6B, Lalit 1-2, Session Chair: Jeil Jung		
6B-1	16:00-16:30	[Invited] Debjani Karmakar Spin-dynamical magnetism in 2D-Kagome plane of Superconducting AV ₃ Sb ₅ (A = Cs, Rb, K)
6B-2	16:30-17:00	[Invited] Madhav Prasad Ghimire Pressure induced evolution of Fermi surface and de Haas-van Alphen effect in CsV ₃ Sb ₅
6B-3	17:00-17:15	[Contributed] Sayan Kanungo Asymmetric Interlayer Chalcogen Pairing Induced Type 2 Band Alignment and Energy Bandgap Reduction in Two Dimensional Bilayer Janus SnS ₂
6B-4	17:15-17:30	[Contributed] Kanchan Ulman Excitons and Exciton-Phonon Coupling in Organic-2D material Heterostructures
Session 6C, Lalit 3-4, Session Chair: TBC		
6C-1	16:00-16:30	[Invited] Ritesh Agarwal 3D Twistronic Photogalvanic Effect - A New Paradigm of Light-Matter Interaction in a Twisted Coordinate Frame
6C-2	16:30-17:00	[Invited] U. Chandni Spin-orbit coupling enhanced valley ordering and orbital magnetism in twisted bilayer graphene
6C-3	17:00-17:15	[Contributed] Albert F. Rigosi Using Graphene and 2D Topological Insulators as a Global Standard for Quantum Electrical Units
6C-4	17:15-17:30	[Contributed] Atindra Nath Pal Detection of nontrivial topology driven by charge density wave in a layered semi-Dirac metal
Young Researchers' meet up and networking session, GBR		
YRM	17:30-18:00	Panelists: Vidya Kochat (IIT Kharagpur), Ashish Arora (IISER Pune), Ananth Govind Rajan (IISc Bangalore)

WEDNESDAY, 22 November 2023

Session 7A, GBR, Session Chair: Akshay Naik

7A-1	09:00-09:30	[Keynote] Hyeonsik Cheong Optical Spectroscopy of Twisted Transition Metal Dichalcogenide Heterostructures
7A-2	09:30-10:00	[Invited] Akshay Singh Creating and measuring useful defects in 2D semiconductors
7A-3	10:00-10:15	[Contributed] Atikur Rahman Effect of Dielectric Environment on the Optoelectronic Properties of Mixed-Dimensional van der Waals Heterostructures
7A-4	10:15-10:30	[Contributed] Mayank Chhaperwal >10 MHz emission rate from monolayer-based single photon emitter array

Session 7B, Lalit 1-2, Session Chair: Alexey Berdyugin

7B-1	09:00-09:30	[Invited] Denis Bandurin Teratronics in the flatland: recent advances and novel applications
7B-2	09:30-10:00	[Invited] Mayank Shrivastava Two-Dimensional Materials: Technological Challenges Ahead
7B-3	10:00-10:15	[Contributed] Krishna Prasad Maity Opto-electronic neuromorphic devices based on van der Waals ferroelectric heterostructures
7B-4	10:15-10:30	[Contributed] Chithra H. Sharma Addressing the mini-bands in MoS ₂ moiré superlattices

Session 7C, Lalit 3-4, Session Chair: Bharti Singh

7C-1	09:00-09:30	[Invited] Adarsh K. V. Photoexcitation on low dimensional semiconductors and bulk single crystals: A playground for optical properties
7C-2	09:30-10:00	[Invited] Andrea Capasso Optimized production techniques for 2D crystal-based technology
7C-3	10:00-10:15	[Contributed] Ramesh Rajarapu Phase selective Synthetic 3R phase sword like MoS ₂
7C-4	10:15-10:30	[Contributed] Manasi Mandal Precise Fermi-level engineering in a topological Weyl semimetal via fast ion implantation

COFFEE BREAK, 10:30-11:00



Session 8A, GBR, Session Chair: Priya Mahadevan		
8A-1	11:00-11:30	[Keynote] Stephan Roche Topological Spin Transport in Quantum Materials and Entanglement
8A-2	11:30-12:00	[Invited] Mei Yin Chou Origin of Magic Angles in Twisted Bilayer Graphene: The Magic Ring
8A-3	12:00-12:30	[Invited] Abir De Sarkar DFT perspectives on valleytronics and flexible piezo-spintronics in selected functional 2D materials
Session 8B, Lalit 1-2, Session Chair: Tanuja Mohanty		
8B-1	11:00-11:30	[Invited] Anjana Devi New Chemical Vapor Deposition Approaches to 2D Materials
8B-2	11:30-12:00	[Invited] Jae-Hyun Lee Layer-engineered atomic spalling of vdW crystals
8B-3	12:00-12:15	[Contributed] Manvi Verma Optical and structural characterization of epitaxially grown monolayer MoS ₂ on miscut c-Al ₂ O ₃
8B-4	12:15-12:30	[Contributed] Daya S. Dhungana Two Dimensional Silicene-Stanene Heterostructure
Session 8C, Lalit 3-4, Session Chair: Sajal Dhara		
8C-1	11:00-11:30	[Invited] Aveek Bid Tuning topological bands in graphene
8C-2	11:30-12:00	[Invited] Alexey Berdyugin Giant magnetoresistance of Dirac plasma in high-mobility graphene
8C-3	12:00-12:15	[Contributed] Nitin Kumar Kondo Resonance in Magnetic Fe Atoms Self-Assembled on Monolayer Stanene
8C-4	12:15-12:30	[Contributed] Aniket Majumdar Observation of Klein-Schwinger effect in ultra-high mobility graphene
LUNCH BREAK: 12:30-14:00		



Session 9A, GBR, Session Chair: Atikur Rahman		
9A-1	14:00-14:30	[Invited] Ageeth Bol Advanced atomic layer deposition cycle schemes for large-area synthesis of 2D transition metal dichalcogenides
9A-2	14:30-15:00	[Invited] M. M. Shaijumon Engineered 2-D Heterostructures for Electrocatalysis
9A-3	15:00-15:15	[Contributed] Vijaykumar Murugan Bandgap engineering of monolayer Mo1-xWxS2 ternary alloys grown by gas-phase CVD
9A-4	15:15-15:30	[Contributed] H S S Ramakrishna Matte Solution Processing of Low-dimensional Materials and Applications
Session 9B, Lalit 1-2, Focus session on Diversity in STEM and Academia, Session Chair: Shobhana Narasimhan		
9B-1	14:00-14:45	Interactive workshop on Diversity
9B-2	14:45-15:30	Panel Discussion: Madhav Prasad Ghimire (Tribhuvan University, Nepal), Arvind Narrain (National Law School of India University), Ranjini Bandyopadhyay (Raman Research Institute)
Session 9C, Lalit 3-4, Session Chair: Denis Bandurin		
9C-1	14:00-14:30	[Invited] Michael Rohlfing Intra- and inter-layer excitons of two-dimensional semiconductors on substrates and in magnetic fields
9C-2	14:30-15:00	[Invited] Kausik Majumdar Van der Waals heterojunctions for quantum device applications
9C-3	15:00-15:15	[Contributed] V.S. Volkov Giant optical anisotropy in van der Waals materials
9C-4	15:15-15:30	[Contributed] Nitesh Singh Stable and deterministic source of single photons in layered hexagonal boron nitride at room temperature
COFFEE BREAK, 15:30-16:00		
Industry session, GBR, Session chair: Rajendra Singh		
I-1	16:00-16:25	[Invited] Deshdeep Sahadev , Quazar Technologies Pvt. Ltd. High-end cost-effective indigenous instruments for two dimensional materials
I-2	16:25-16:50	[Invited] Syam Parayil Venugopalan , ASML 2D materials at the edge of device scaling engines
I-3	16:50-18:00	Panel Discussion: Suraj Rengarajan (Applied Materials), N. Sainathan (Tata Steel), Rajeev Gautam (Horiba), Mangesh Kulkarni (Oxford Instruments), Partha Parthasarathy (Micron Technology)

THURSDAY, 23 November 2023

Session 10A, GBR, Session Chair: Prasana Kumar Sahoo

10A-1	09:00-09:30	[Keynote] Michael Fuhrer Two-Dimensional Topological Materials for Low-Voltage Transistors
10A-2	09:30-10:00	[Invited] Anindya Das Electric field tunable superconductivity in near magic-angle twisted bilayer graphene
10A-3	10:00-10:15	[Contributed] Ipsita Das Magnetic field driven states in magic-angle twisted bilayer graphene
10A-4	10:15-10:30	[Contributed] Ayshi Mukherjee Magic-angle twisted trilayer graphene: Inhomogeneous twisted superconductor showing competing magnetic order

Session 10B, Lalit 1-2, Session Chair: Manish Jain

10B-1	09:00-09:30	[Invited] Mikito Koshino Topological moiré trilayers
10B-2	09:30-10:00	[Invited] Ananth Govind Rajan Computational Modeling of the Synthesis and Applications of Nanoporous 2D Materials
10B-3	10:00-10:15	[Contributed] Sapta Sindhu Paul Chowdhury Anomalous Phonon Thermal Transport in Germanene Monolayer
10B-4	10:15-10:30	[Contributed] Shinjan Mandal Electron-phonon interactions in twisted bilayer Graphene

Session 10C, Lalit 3-4, Focus session on Academia-Industry Translation, Session Chair: Arindam Ghosh

10C-1	09:00-09:30	[Invited] Barbaros Oezylmaz 2D Amorphous Materials and their Properties: From Ultra-Low k Dielectrics to Ferromagnetism in Co doped 2D NbSe ₂
10C-2	09:30-10:00	[Invited] Aravind Vijayaraghavan Graphene Technologies - from Lab to Market
10C-3	10:00-10:30	NIL

COFFEE BREAK, 10:30-11:00

Session 11A, GBR, Session Chair: Aweek Bid		
11A-1	11:00-11:30	[Keynote] Mandar M. Deshmukh Superconducting van der Waals devices for quantum technology
11A-2	11:30-12:00	[Invited] Ashish Arora Magneto-optics of neutral and charged excitons in 2D materials: low fields versus high fields
11A-3	12:00-12:15	[Contributed] Saisab Bhowmik Valley polarized malleable bands near half filling in twisted bilayer graphene
11A-4	12:15-12:30	[Contributed] Priya Tiwari Experimental observation of spin-split energy dispersion in high-mobility single-layer graphene/WSe ₂ heterostructures
Session 11B, Lalit 1-2, Session Chair: Vishwanath Balakrishnan		
11B-1	11:00-11:30	[Invited] Bharti Singh Progress in PVDF and 2D Layered Materials based Nanocomposites for Energy Harvesting Applications
11B-2	11:30-11:45	[Contributed] Rajeev Mehta Evaluation of Nano-Reinforced Epoxy Coatings for Enhanced Corrosion Inhibition in Reinforcing Bars in Concrete Structures
11B-3	11:45-12:00	[Contributed] Vidya Kochat Raman spectroscopic studies of lattice dynamics and electronic structure evolution in twisted bilayer 2D materials
11B-4	12:00-12:15	[Contributed] Siri Chandana Amarakonda Augmenting the oxidation resistance of two-dimensional MXenes: A study on the role of antioxidants in aqueous dispersions
11B-5	12:15-12:30	[Contributed] Aparna Rathi Extremely large osmotic power with arrays of Angstrom scale capillaries of vermiculite
Session 11C, Lalit 3-4, Session Chair: Sreedhara M B		
11C-1	11:00-11:30	[Invited] Tomoki Machida Symmetry engineering and subband electronics using van der Waals assembly of transition metal dichalcogenides
11C-2	11:30-12:00	[Invited] Hongtao Yuan Symmetry-Breaking-Induced Emergent Non-linear Phenomena at Van der Waals Heterostructures
11C-3	12:00-12:15	[Contributed] A. Mohapatra Tuneable thermal conductivity of multi-layer graphene: Role of turbostraticity and local curvature
11C-4	12:15-12:30	[Contributed] Sonal Maheshwari Cost effective route to produce Graphene from pet coke
LUNCH BREAK: 12:30-14:00		



Session 12A, GBR, Session Chair: Ageeth Bol		
12A-1	14:00-14:30	[Invited] Kenneth S Burch Detecting Emergent Quasi-particles in 2D Materials
12A-2	14:30-15:00	[Invited] Tanuja Mohanty Tuning of linear and non-linear optical properties of 2D semiconducting materials
12A-3	15:00-15:15	[Contributed] Sudipta Majumder Understanding the Origin of High Mobility in Mo Foil Grown Monolayer MoS ₂ Transistors
12A-4	15:15-15:30	[Contributed] Sreedhara MB Asymmetric "misfit" layered compounds: Chemical affinity outwits the entropy at high-temperature solid-state reactions
Session 12B, Lalit 1-2, NIL		
Session 12C, Lalit 3-4, Session Chair: Chandan Kumar		
12C-1	14:00-14:30	[Invited] Viswanath Balakrishnan Nanomanufacturing, Mechanical Reliability and Stability of 2D Materials
12C-2	14:30-15:00	[Invited] Pramoda Kumar Nayak CVD synthesis of twisted 2D homo/hetero-bilayers for twistrionics
12C-3	15:00-15:15	[Contributed] Isha Atrey Completely trilayer graphene dispersion provides film of high specific capacitance
12C-4	15:15-15:30	[Contributed] Abdul Kaium Mia Self-Powered Metal–Semiconductor–Metal 2D WS ₂ monolayer Photodetector with Asymmetric Contacts
COFFEE BREAK, 15:30-16:00		
CLOSING CEREMONY, 16:00-16:30, GBR		

