

2D MATERIALS 2019 - International Congress on Graphene, 2D Materials and Applications

30th September - 04th October 2019, Sochi Olympic Park, Sochi, Russia

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Time	Monday, September 30th
16:00 20:00	Registration [Reception Desk of the Omega Sochi Hotel]
18:00 20:00	Welcome Reception [Omega Restaurant of the Omega Sochi Hotel]
Time	Tuesday, October 1st

8:00 16:00	Registration [Entrance to the Sirius Park (Conference Venue)]
9:00 9:10	Opening Ceremony [Dostoevsky Hall]
9:10 9:55	Manish Chhowalla "Van der Waals contacts and single atom catalysis on 2D materials" (Plenary) Session Chair: Luis Martin-Moreno [Dostoevsky Hall]
10:00 10:45	Alexey Kavokin "Qubits based on split-ring polariton condensates" (Plenary) Session Chair: Luis Martin-Moreno [Dostoevsky Hall]
10:45 11:15	Coffee Break

Session: "Fundamental science of graphene and 2D materials beyond graphene I", Session Chair: Dmitry Svintsov [Green Hall]	Session: "Terahertz Technologies and Applications I", Session Chair: Dmitry Ponomarev [Blue Hall]	Session: "Quantum Technologies and Quantum Materials I", Session Chair: Stanislav Straupe [Purple Hall]
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11:15 11:45	Artem Mishchenko "Quantum Hall effect and topological surface states in Bernal and rhombohedral graphite films" (Keynote)	11:15 11:45	Taiichi Otsuji "Terahertz light amplification and lasing in current-driven graphene-channel transistor structures" (Keynote)	11:15 11:45	Georgiy Shlyapnikov "Two-dimensional bosonic systems in disorder" (Keynote)
11:45 12:15	Denis Bandurin "Electron hydrodynamics: introduction and status" (Keynote)	11:45 12:15	Gregory Goltsman "Superconducting terahertz hot-electron and normal metal bolometer" (Keynote)	11:45 12:15	Alex Fedorov "Quantum technologies in Russia: from fundamental physics to applications" (Keynote)
12:15 13:45	Lunch Break				
13:45 14:30	Andrey Chuvilin "Accessibility of chemical kinetics via direct atomic imaging in an electron microscope" (Plenary) Session Chair: Pablo Alonso Gonzalez [Green Hall]				

Time		Tuesday, October 1st						
Session: "Fundamental science of graphene and 2D materials beyond graphene II", Session Chair: Andrey Chuvilin [Green Hall]			Session: "Terahertz Technologies and Applications II", Session Chair: Angela Vasanelli [Blue Hall]			Session: "Quantum Technologies and Quantum Materials II", Session Chair: Alex Fedorov [Purple Hall]		
14:30	14:50	Sergey Kubatkin "Polymer-encapsulated molecular doped epigraphene for quantum resistance metrology" (Invited)	14:30	14:50	Federica Bianco "Terahertz detection by 2D materials: millimeter scales to nano" (Invited)	14:30	14:50	Stanislav Straupe "Reconfigurable laser-written integrated photonic circuits for linear optical quantum computing" (Invited)
14:50	15:20	Sergey Kubatkin "Towards quantum-limited coherent detection of terahertz waves in charge-neutral graphene" (Keynote)	14:50	15:10	Georgy Fedorov "Tunable graphene based plasmonic interferometer as a terahertz radiation detector" (Invited)	14:50	15:10	Evgeniy Kiktenko "Towards improving tomography efficiency of noisy intermediate-scale quantum devices" (Invited)
15:20	15:40	Valentin Kachorovskii "Critical phenomena in clean and disordered membranes: application to graphene" (Invited)	15:10	15:30	Denis Fateev "Conversion of electromagnetic wave into propagating plasmon in a periodic graphene structure" (Invited)	15:10	15:25	Tuhin Kumar Maji "Role of functional ligands of graphene oxide in GO/MoSe2 heterostructure to control electronic, optical and quantum transport" (Oral)
			15:30	15:45	Mikhail Morozov "Deceleration of terahertz plasma waves in tapered heterostructure with active graphene pumped by optical plasmons" (Oral)	15:25	15:40	Mikhail Gubin "The generation of surface plasmon-polaritons by using hybrid opto-plasmonic scheme with quantum dots in the proximity of graphene" (Oral)
15:40	16:10	Coffee Break						
Session: "Fundamental science of graphene and 2D materials beyond graphene III", Session Chair: Sergey Kubatkin [Green Hall]			Session: "Terahertz Technologies and Applications III", Session Chair: Manfred Helm [Blue Hall]			Session: "Theory and simulation of 2D materials", Session Chair: Felipe Perez-Rodriguez [Purple Hall]		
16:10	16:40	Alexey Kuzmenko "Terahertz and infrared spectroscopy of Landau levels in 2D Dirac materials" (Keynote)	16:10	16:30	Michele De Regis "Terahertz frequency metrology" (Invited)	16:10	16:30	Samuel Magorrian "Interband and intersubband transitions in monolayer and few-layer InSe" (Invited)

Time		Tuesday, October 1st						
16:40	17:10	Pablo Alonso Gonzalez "Nanooptics in 2D materials" (Keynote)	16:30	16:50	Igor Ilyakov "Detection and generation of THz pulses with the use of lithium niobate sandwich-structure and other birefringent materials" (Invited)	16:30	16:50	Zhenhai Wang "Prediction of 2D materials beyond graphene in USPEX" (Invited)
17:10	17:30	Javier Martín-Sánchez "Strain tuning of quantum light in 2D materials" (Invited)	16:50	17:10	Kirill Kuznetsov "Generation of terahertz radiation in antennas based on epitaxial films of semiconductors and topological insulators" (Invited)	16:50	17:10	Pavel Sorokin "Diamondization on 2D level. Can graphene be used in fabrication of ultrathin diamond film?" (Invited)
17:30	17:50	Tobias Stauber "Kohn-Luttinger superconductivity and chirality in twisted bilayer graphene" (Invited)	17:10	17:30	Alexander Sobolev "A distributed terahertz metasurface with cold-electron bolometers for cosmology missions" (Invited)	17:10	17:30	Vladimir Stegailov "Atomistic simulation studies of thermal stability of graphite and nucleation of carbon nanostructures" (Invited)
			17:30	17:50	Rustam Khabibullin "Limiting factors to the performance and operation frequency range of terahertz quantum cascade laser based on GaAs/AlGaAs heterostructures" (Invited)	17:30	17:45	Petr Zhilyaev "State of trapped matter inside graphene nanobubble" (Oral)

Time		Wednesday, October 2nd						
Luis Martin-Moreno "Polariton anomalous Hall effect in TMDs" (Plenary)								
9:10	9:55	Session Chair: Aran Garcia-Lekue [Dostoevsky Hall]						
Kaustav Banerjee "Overcoming fundamental bottlenecks in nanoelectronics with 2D materials" (Plenary)								
10:00	10:45	Session Chair: Aran Garcia-Lekue [Dostoevsky Hall]						
10:45	11:15	Coffee Break						
Session: "Spectroscopy and microscopy of 2D materials I", Session Chair: Alexey Kuzmenko [Purple Hall]			Session: "Electronics, photonics, optoelectronics, and plasmonics I", Session Chair: Tobias Stauber [Green Hall]			Session: "Terahertz Technologies and Applications IV", Session Chair: Yahya Moubarak Meziani [Blue Hall]		
11:15	11:45	Maria Asensio "Imaging quantum electronic states in 2D materials using NanoARPES" (Keynote)	11:15	11:45	Klaas-Jan Tielrooij "Ultrafast dynamics of charge and heat in 2D materials" (Keynote)	11:15	11:45	Victor Ryzhii "Graphene/Black Phosphorus-Arsenic Heterostructures and their terahertz and infrared device applications" (Keynote)
11:45	12:15	Hugen Yan "Infrared studies of few-layer black phosphorus" (Keynote)	11:45	12:15	Aran Garcia-Lekue "2D carbon-based nanoelectronics" (Keynote)	11:45	12:15	Angela Vasanelli "Semiconductor quantum plasmonics" (Keynote)
12:15	13:45	Lunch Break						
Session: "Spectroscopy and microscopy of 2D materials II", Session Chair: Alexey Kuzmenko [Purple Hall]			Session: "Electronics, photonics, optoelectronics, and plasmonics II", Session Chair: Pablo Alonso Gonzalez [Green Hall]			Session: "Terahertz Technologies and Applications V", Session Chair: Igor Minin [Blue Hall]		
13:45	14:05	Victor Aristov "Nanostructured graphene: growth mechanism, structure, properties, and potential applications" (Invited)	13:45	14:05	Pablo Ares "Ultrahigh pressure local tuning of graphene electronic properties" (Invited)	13:45	14:15	Manfred Helm "THz relaxation dynamics and nonlinear optics in graphene" (Keynote)
14:05	14:25	Jan Vavra "Real space mapping of polaritons in 2D materials" (Invited)	14:05	14:25	Elena Mishina "2D-semiconductor based electronic devices" (Invited)	14:15	14:45	Boris Gorshunov "Terahertz response of water molecules in conditions of nanoconfinement" (Keynote)

Time		Wednesday, October 2nd							
14:25	14:45	Alexander Chernov "Optical and magnetic properties of graphene nanoribbons with embedded Co atoms" (Invited)	14:25	14:45	Felipe Perez-Rodriguez "Nonlocal optical effects in hyperbolic metamaterials with 2D superconductors" (Invited)	14:45	15:00	Liudmila Alyabyeva "Effect of chemical pressure on terahertz electrodynamics of substituted barium hexaferrite" (Oral)	
14:45	15:00	Jean-Philippe Tetienne "Imaging magnetism and charge transport in 2D materials with a quantum diamond microscope" (Oral)	14:45	15:05	Bernd Beschoten "Room temperature spin lifetimes reaching 100 ns in MoSe2" (Invited)	15:00	15:20	Oleg Minin "All-optical ultrafast THz modulator based on nanostructured wavelength scaled cubic particle with graphene monolayer" (Invited)	
15:00	15:15	Dmitry Yakubovsky "Scanning near-field microscopy analysis of ultra-thin gold films on two-dimensional MoS2" (Oral)	15:05	15:25	Tetiana Slipchenko "Excitation of plasmon-polaritons in magnetized charge-neutral graphene" (Invited)				
15:20	16:00	Coffee Break							
Session: "Growth and synthesis of graphene and other 2D materials I", Session Chair: Hugen Yan [Purple Hall]			Session: "Electronics, photonics, optoelectronics, and plasmonics III", Session Chair: Klaas-Jan Tielrooij [Green Hall]			Session: "Quantum Technologies and Quantum Materials III" and "Terahertz Technologies and Applications VI", Session Chair: Alex Fedorov & Leonardo Viti [Blue Hall]			
16:00	16:20	Vaidotas Miseikis "Crystals on demand: seeded growth of graphene for high-performance optoelectronics" (Invited)	16:00	16:20	Ekaterina Khestanova "Control of polariton linewidth in a 2D semiconductor coupled to optical bound states in the continuum" (Invited)	16:00	16:20	Alexey Rubtsov "Collective fluctuations in correlated 2D materials: key to understanding of high-Tc superconductivity in cuprates" (Invited)	
16:20	16:40	John Parthenios "CVD production of transition metal dichalcogenides and their heterostructures" (Invited)	16:20	16:40	Aleksey Kozikov "Interlayer exciton manipulation in van der Waals heterostructures" (Invited)	16:20	16:40	Ilya Besedin "Quantum computing with superconducting circuits" (Invited)	
16:40	17:00	Victor Koroteev "Chemical vapor deposition of anisotropic single layers" (Invited)	16:40	17:00	Gennady Panin "2D photoresistive memory" (Invited)	16:40	17:00	Gregory Goltsman "Single-photon photodetectors" (Invited)	

Time		Wednesday, October 2nd							
17:00	17:20	Dumitru Dumcenco "Recent advances in growth of Van der Waals magnetic materials" (Invited)	17:00	17:15	Kirill Voronin "Photogating in graphene field-effect phototransistors: theory and observations" (Oral)	17:00	17:20	Ilya Semerikov "Quantum computing and clocks with trapped ions" (Invited)	
17:20	17:40	Andrey Markeev "Synthesis of large area two-dimensional MoS2 films by sulfurization of atomic layer deposited MoO3 thin film" (Invited)	17:15	17:30	Yuri Vasilyev "Terahertz photoresponse of meander-patterned graphene" (Oral)	17:20	17:35	Vladimir Kuznetsov "Multi-walled carbon nanotube aerogels in quasi-optical terahertz beams" (Oral)	
17:40	17:55	Irina Antonova "Growth of Bi2Se3/graphene heterostructures with high carrier mobility" (Oral)	17:30	17:45	Igor Zagorodnev "Axisymmetric plasma mode in two-dimensional disk" (Oral)	17:35	17:50	Zarina Gagkaeva "On the nature of terahertz and radiofrequency relaxations in Eumelanin" (Oral)	
17:55	18:10	Luna Li "Development status and prospects of graphene in China" (Oral)	17:45	18:00	Elena Titova "Terahertz plasmons in grating-coupled large-area graphene transistors" (Oral)	17:50	18:10	Igor Minin "Fano-induced subdiffraction near-field focusing in masked 2D diffraction grating" (Invited)	

Time		Thursday, October 3rd					
		Jin Zhang "Chirality controlled growth of horizontal carbon nanotubes array with designed catalysts" (Plenary)					
9:00	9:45	Session Chair: Valentyn Volkov [Dostoevsky Hall]					
		Session: "Electronics, photonics, optoelectronics, and plasmonics IV", Session Chair: Maria Asensio [Green Hall]		Session: "Electrical, optical, thermal and mechanical properties of 2D materials I", Session Chair: John Parthenios [Purple Hall]		Session: "2D materials for applications & Innovation and commercialization I", Session Chair: Elena Polyakova [Blue Hall]	
10:00	10:30	Chee Wei Wong "Ultrafast solitons and frequency combs in graphene-nitride heterostructures" (Keynote)		10:00	10:30	Konstantinos Papagelis "Probing the mechanical properties of two-dimensional materials by optical spectroscopy" (Keynote)	
10:00	10:30	Di Wei "Introduction of Beijing Graphene Institute" (Keynote)					
10:30	11:00	Coffee Break					
		Session: "Electronics, photonics, optoelectronics, and plasmonics IV", Session Chair: Maria Asensio [Purple Hall]		Session: "Electrical, optical, thermal and mechanical properties of 2D materials I", Session Chair: Konstantinos Papagelis [Purple Hall]		Session: "2D materials for applications & Innovation and commercialization I", Session Chair: Valentyn Volkov [Blue Hall]	
11:00	11:30	Andres Castellanos-Gomez "Straintronic devices based on 2D materials" (Keynote)		11:00	11:30	Elena Obraztsova "Graphene in non-linear optics" (Keynote)	
11:00	11:30	Kaihui Liu "Stacking-dependent interlayer couplings in 2D materials" (Keynote)					
11:30	11:50	Nicolas Stenger "Strong light-matter interactions in tungsten disulfide coupled to single-crystalline gold nanodisks" (Invited)		11:30	11:50	Vladimir Kuznetsov "Graphene blocks in real multiwalled carbon nanotubes" (Invited)	
11:30	11:50	Elena Polyakova "Critical overview of performance of 2D materials and composites" (Keynote)					
11:50	12:10	Stefano Azzini "2D materials-surface plasmons heterostructures: chiral emitters in chiral optical near fields at room temperature" (Invited)		11:50	12:05	Alexander Polyakov "WS2 nanotubes dressed in gold and silver: synthesis, optoelectronic properties, and NO2 sensing" (Oral)	
11:50	12:10	Olesya Kapitanova "Redox processes in graphene oxide for storing and converting energy" (Oral)					
12:15	13:45	Lunch Break					

Time		Thursday, October 3rd			
Session: "Terahertz Technologies and Applications VII", Session Chair: Reyes Calvo [Blue Hall]		Session: "Electrical, optical, thermal and mechanical properties of 2D materials II", Session Chair: Dmitry Svintsov [Purple Hall]			
13:45	14:15	Leonardo Viti "Terahertz optoelectronics with 2D materials" (Keynote)	13:45	14:05	Joseph Sulpizio "Imaging electron flow in nanostructures, from the ballistic to the hydrodynamic regime" (Invited)
14:15	14:35	Yahya Moubarak Meziani "Terahertz detection using graphene based asymmetric dual grating gates FET" (Invited)	14:05	14:25	Moshe Ben Shalom "Momentum, supercurrent, and heat flow in ballistic graphene" (Invited)
14:35	14:55	Dmitry Ponomarev "Optical light confinement in terahertz antennas" (Invited)	14:25	14:40	Yuri Vasilyev "Formation of p-n junction by edge doping in atomically thin materials" (Oral)
14:40	14:55	Dmitry Mylnikov "Fast mid- infrared photodetection using graphene" (Oral)	14:40	14:55	Ilya Klimovskikh "Massive Dirac fermions in graphene and topological insulators" (Oral)
15:00	15:30	Coffee Break			
15:30	17:00	Electronic Poster Presentation [Green Hall] [Red Hall] [Blue Hall] [Purple Hall]			
18:30	21:30	Conference Banquet			

Time		Friday, October 4th			
Session: "Electronics, photonics, optoelectronics, and plasmonics IV", Session Chair: Jose Caridad [Green Hall]		Session: "Growth and synthesis of graphene and other 2D materials II", Session Chair: Andres Castellanos [Purple]			
9:10	9:40	Timur Shegai "Strong light-matter coupling using TMDC nanophotonics" (Keynote)	9:10	9:40	Yanfeng Zhang "Wafer scale syntheses and application explorations of transition metal dichalcogenides" (Keynote)
9:40	10:00	Denis Baranov "Nanophotonics with anisotropic transition metal dichalcogenide nanoantennas" (Invited)	9:40	10:00	Ke Chen "Conformal growth of multiscale graphene microstructures" (Invited)
10:00	10:30	Coffee Break			
Session: "Electronics, photonics, optoelectronics, and plasmonics IV", Session Chair: Aleksey Kozikov [Green Hall]		Session: "2D materials for applications", Session Chair: Dmitry Ponomarev [Blue Hall]			
10:30	11:00	Bin Yu "Nano-devices enabled by 2D materials and heterostructures" (Invited)	10:30	10:50	Sergey Novikov "Plasmonic properties of nanostructured graphene with silver nanoparticles" (Invited)
11:00	11:20	Reyes Calvo "Spin to charge interconversion in graphene-TMD heterostructures" (Invited)	10:50	11:10	Maxim Rybin "Tailoring of electronic structure of CVD graphene by functionalization" (Invited)
11:20	11:40	Jose Caridad "A graphene-edge ferroelectric molecular switch" (Invited)	11:10	11:25	Gleb Tselikov "Plasmonic metasurfaces for probing two-dimensional materials" (Oral)
11:40	12:00	Dmitry Svintsov "Hydrodynamic plasmons in graphene" (Invited)	11:25	11:40	Amit Srivastava "Facile preparation of lightweight CNT/MoS ₂ -rGO nanocomposite for X-band electromagnetic interference shielding" (Oral)

Time		Friday, October 4th			
12:00	12:15	Aleksandr Petrov "Perturbation theory for two-dimensional hydrodynamic plasmons" (Oral)	11:40	11:55	Andrey Vyshnevyy "Understanding coherence of metal-semiconductor plasmonic and photonic nanolasers" (Oral)
12:15	13:30	Lunch Break			
13:30	14:00	Closing Ceremony [Dostoevsky Hall]			
14:30	20:00	Social Program (High Adventure Park SKYPARK)			