5th INTERNATIONAL FALL SCHOOL ON ORGANIC ELECTRONICS – 2019 (IFSOE-2019)

Organizers

Division of Chemistry and Material Science of Russian Academy of Sciences

The Ministry of Science and Education of Russia

Enikolopov Institute of Synthetic Polymeric Materials of Russian Academy of Sciences (ISPM RAS)

Lomonosov Moscow State University (MSU)

Printed Electronics Technologies Limited Liability Company (PrintElTech LLC)

Eklogit Limited Liability Company (Eklogit LLC)

Scientific program

1) ***Fundamentals of organic electronics:*** charge transport, modeling, photophysics, etc.

2) ***Design and synthesis of materials for organic electronics:*** organic conductors and semiconductors, dielectrics, substrates, etc.

3) ***Organic field-effect transistors:*** single crystal, polymer and monolayer OFETs, integrated circuits and related devices.

4) ***Organic light-emitting devices:*** OLEDs and OLETs, white light-emitting devices, TADF devices, organic lasers.

5) ***Organic and hybrid solar cells:*** small molecules and polymer photovoltaics, tandem cells, perovskites-based photovoltaics, etc.

6) ***Organic sensors:*** physical (pressure, temperature, photo, etc.) sensors, chemo- and biosensors.

7) ***Characterization techniques:*** various spectroscopy, microscopy, and x-ray scattering techniques, charge mobility measurements, thermal and surface analysis, HOMO and LUMO evaluation, biomedical applications, etc.

8) ***Technologies of organic electronics:*** printing of organic materials and devices, roll-to-roll techniques, ink formulations, encapsulation, etc.

School-conference Chairs

Prof. Sergey Ponomarenko (Enikolopov Institute of Synthetic Polymeric Materials of RAS, Russia)

Prof. Dmitry Paraschuk (Lomonosov Moscow State University, Russia)

International Advisory Board

Prof. Vladimir Agranovich (Institute for Spectroscopy RAS, Russia)
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Prof. Guglielmo Lanzani (Politechnico di Milano, Italy)
Prof. Maxim Pshenichnikov (University of Groningen, the Netherlands)
Dr. Abderrahim Yassar (Ecole polytechnique, France)

Local Organizing Committee

Dr. Elena Agina – *Vice Chairman*
Victoria Chekusova – *workshop secretary*
Askold Trul
Daniil Anisimov

School program

The 5th International Fall School on Organic Electronics – 2019 Time Schedule

	Sunday *September 15th*	**Monday** *September 16th*	**Tuesday** *September 17th*	**Wednesday** *September 18th*	**Thursday** *September 19th*	**Friday** *September 20th*	
	School						
9:00		**Luca Beverina**	**Sergei Tretiak**	**Alessandro Troisi**	**Yongfang Li**	**Fabio Biscarini**	9:00
10:00		**Ruben D. Costa**	**Frank Schreiber**	**Enrico Da Como**	**Chihaya Adachi**	**Dorina Opris**	10:00
11:00	Visit to Kolomenskoe Museum (optional)	**Coffee-break**					11:00
		Pavel Troshin	**Anna Koehler**	**Maxim Shkunov**	**Dimitri Ivanov**	**Dmitri Godovsky**	
12:00		**Dmitry Paraschuk**	**Maxim Pchenitchnikov**	**Mikhail Nechaev**	**Stephan Kirchmeyer**	**Carlo Bortolotti**	12:00
		Artem Bakulin	Oral talks 2	Oral talks 3	Oral talks 5	**Closing ceremony**	
13:00	Lunch	**Sponsor lecture**					13:00
14:00	Registration at ISPM RAS 16:00 Departure to Conference site	**Lunch**					14:00
15:00		Oral talks 1	**Johannes Gierschner**	Oral talks 4	Trip to New Jerusalem (optional)	**Departure to Moscow**	15:00
16:00			**Discussion lecture Johannes Gierschner**				16:00
		Coffee-break		**Coffee-break**			
17:00	Hotel arrival. Registration	Poster session 1	Sport activities (swimming pool, wellness, spa)	Poster session 2	Sport activities (swimming pool, wellness, spa)		17:00
18:00							18:00
19:00	**Dinner**			**Conference dinner**	**Dinner**		19:00
20:00	**Opening ceremony Guglielmo Lanzani**	**Evening lecture Björn Kriete**	Moscow sightseeing tour		Sport activities (swimming pool, wellness, spa)		20:00
21:00	Welcome-party	Leisure time					21:00
22:00-22:30							22:00-22:30

Sunday, September 15th

11:00 – 16:00	**Visit to Kolomenskoe Museum (optional)** **Registration at ISPM RAS. Departure to conference site**
19:00 – 20:00	**Dinner**
20:00 – 20:15	**School opening**
20:15 – 21:15	**T-1.** *Guglielmo Lanzani.* Organic Light Actuators for Non Genetic Cell Photo Stimulation
21:15 – 22:30	**Welcome-party. The afterparty music by Crossover Classical Band.**

Monday, September 16th

8:00 – 9:00	**Breakfast**
	Chair: *Artem Bakulin*
9:00 – 10:00	**T-2.** *Luca Beverina.* Bench-Top, Sustainable Access to Conjugated Materials: How Far You Can Go with Tap Water, a Stirring Plate, Very Little Palladium and a Little Soap
10:00 – 11:00	**T-3.** *Ruben D. Costa.* New advances in Light-Emitting Electrochemical Cells: Emitters and Operational Window
11:00 – 11:30	**Coffee-break**
	Chair: *Guglielmo Lanzani*
11:30 – 12:00	**I-1.** *Pavel Troshin.* Redox-Active Organic and Organometallic Materials for Advanced Metal-Ion Batteries
12:00 – 12:30	**I-2.** *Dmitry Paraschuk.* 2D Organic Semiconductor Single Crystals
12:30 – 13:00	**I-3.** *Artem Bakulin.* Hot-Carrier Dynamics in Lead-Halide Perovskite Nanocrystals: Role of Carrier Density, Nanoconfinement and Surface Ligands
13:00 – 13:30	**Sponsor lecture.** *Alexander Shaforostov.* Imaging Ellipsometry and Near-field microscopy for Organic Electronics applications
13:30 – 15:00	**Lunch**
	Oral talks 1. Chair: *Luca Beverina*
15:00 – 15:15	**O-1.** *Sara Mattiello.* Organic Semiconductors Synthesis in Water Promoted by π-Surfactants
15:15 – 15:30	**O-2.** *Igor Koskin.* Quantitative Topological Descriptor for Linear Co-oligomers Fusion
15:30 – 15:45	**O-3.** *Jun Liu.* n-Type Polymer Semiconductors Containing B←N Unit and Their Application in OPVs and OFETs
15:45 – 16:00	**O-4.** *Maxim Skorotetcky.* Luminophores Based on 2,1,3-Benzothiadiazole Electron-Withdrawing Core and Their Absorption-Luminescent Properties

16:00 – 16:15	**O-5.** *Santosh Kumar Behera.* Excited State Features and Dynamics of a Highly Efficient All-Organic Photocatalyst for Polymerization Reactions
16:15 – 16:30	**O-6.** *Vito Vurro.* Cardiomyocytes Optical Pacing Mediated by Micro Patterned Polymer Interfaces
16:30 – 17:00	**Coffee-break**
17:00 – 19:00	**Poster session 1 (*P-1 – P-30*)**
19:00 – 20:00	**Dinner**
20:00 – 21:00	**Evening lecture.** *Björn Kriete.* Scientific Ethics

Tuesday, September 17th

8:00 – 9:00	**Breakfast**
	Chair: *Johannes Gierschner*
9:00 – 10:00	**T-4.** *Sergei Tretiak.* Modeling of Electronic Properties in Organic and Hybrid Materials
10:00 – 11:00	**T-5.** *Frank Schreiber.* Organic Semiconductor Heterostructures: Growth, Structure and Optical Properties
11:00 – 11:30	**Coffee-break**
	Chair: *Enrico Da Como*
11:30 – 12:00	**I-4.** *Anna Koehler.* Understanding and Controlling Aggregate Formation During Spin-coating
12:00 – 12:30	**I-5.** *Maxim Pchenitchnikov.* Ferroelectricity in 2D Halide Perovskites
	Oral talks 2.
12:30 – 12:45	**O-7.** *Björn Kriete.* Molecular Aggregate Matryoshka: 2D Spectroscopy Meets Microfluidics
12:45 – 13:00	**O-8.** *Dmitry Maslennikov.* Surface-Enhanced Raman Spectroscopy of 2D Organic Semiconductor Crystals
13:00 – 13:15	**O-9.** *Hui Tong.* Water-Dispersible Hyperbranched Conjugated Polymer Nanoparticles for Amplified Fluorescence Sensing of Trace Nitroaromatic Explosives in Aqueous Solution
13:15 – 13:30	**O-10.** *Daniil Anisimov.* Ultra-Sensitive Gas Sensors Array Based on Organic Field Effect Transistors with Tunable Selectivity
13:30 – 15:00	**Lunch**
	Chair: *Dmitry Paraschuk*
15:00 – 15:30	**I-6.** *Johannes Gierschner.* Highly Luminescent Organic Charge-Transfer Co-Crystals

15:30 – 16:00	**Discussion lecture.** *Johannes Gierschner.* Luminescence Enhancement and Quenching in Organic Solids
16:30 – 17:00	**Coffee-break**
17:00 – 19:00	**Sport activities**
19:00 – 20:00	**Dinner**
20:00 – 23:00	**Moscow sightseeing tour**

Wednesday, September 18th

8:00 – 9:00	**Breakfast**
	Chair: *Sergei Tretiak*
9:00 – 10:00	**T-6.** *Alessandro Troisi.* Searching for the Best Molecular Semiconductors
10:00 – 11:00	**T-7.** *Enrico Da Como.* Charge Transfer Crystals: Growth and Electronic Structure
11:00 – 11:30	**Coffee-break**
	Chair: *Alessandro Troisi*
11:30 – 12:00	**I-7.** *Maxim Shkunov.* Inkjet-Printed Polymeric 3-colour Devices Mimicking Human Retina
12:00 – 12:30	**I-8.** *Mikhail Nechaev.* Synthesis of High Purity Organic Materials Under Solvent-Free Conditions
	Oral talks 3.
12:30 – 12:45	**O-11.** *Maxim Kazantsev.* Stimuli Responsive Aggregation-Induced Emission of Bis(4-((9H-fluoren-9-ylidene)methyl)phenyl)thiophene Single Crystals
12:45 – 13:00	**O-12.** *Andrey Sosorev.* Simple Model for Efficient Screening of High-Mobility Organic Semiconductors
13:00 – 13:15	**O-13.** *Kostas Daoulas.* Generic Model for Describing Lamellar Order in Conjugated Polymers: Studying Mesoscopic Morphology and Charge-Transport
13:15 – 13:30	**O-14.** *Vladimir Nikitenko.* On the Description of Hopping Transport by the Multiple Trapping Model
13:30 – 15:00	**Lunch**
	Oral talks 4. Chair: *Frank Schreiber*
15:00 – 15:15	**O-15.** *Yuriy Luponosov .* Novel Donor Small Molecules for Organic Photovoltaics
15:15 – 15:30	**O-16.** *Jonathan Barsotti.* Ultra-Thin and Ultra-Conformable Tattoo-Like Organic Photovoltaics
15:30 – 15:45	**O-17.** *Seyed Mehrdad Hosseini.* Comparing Charge Generation and Extraction in ITIC and PCBM[70] Devices

15:45 – 16:00	**O-18.** *Maria Kotova.* Role of Triplet Excitons in Non-fullerene Based Organic Solar Cells
16:00 – 16:15	**O-19.** *Kezia Sasitharan.* Enhanced Performance of Bulk Heterojunction Solar Cells by Ultrathin Metal-Organic Framework Nanosheets
16:30 – 17:00	**Coffee-break**
17:00 – 19:00	**Poster session 2 (*P-31 – P-59*)**
19:00 – 23:00	**Conference dinner**

Thursday, September 19th

8:00 – 9:00	**Breakfast**
	Chair: *Stephan Kirchmeyer*
9:00 – 10:00	**T-8.** *Yongfang Li.* Photovoltaic Materials and Devices for Polymer Solar Cells
10:00 – 11:00	**T-9.** *Chihaya Adachi.* High Performance Organic Light Emitting Devices – from TADF-OLED to Organic Semiconductor Laser Diodes
11:00 – 11:30	**Coffee-break**
	Chair: *Anna Koehler*
11:30 – 12:00	**I-9.** *Dimitri Ivanov.* Advanced Methods of in-situ Characterization of Organic Electronic Devices
12:00 – 12:30	**I-10.** *Stephan Kirchmeyer.* PEDOT, a Work-horse for Organic Electronics
	Oral talks 5.
12:30 – 12:45	**O-20.** *Artur Mannanov.* Single Component Solution-Processed Organic Solar Cells Based on Conjugated Star-Shaped Small Molecules
12:45 – 13:00	**O-21.** *Alexei Komolov.* Electron Spectroscopy Studies of Surface Deposited Conjugated Molecular Layers
13:00 – 13:15	**O-22.** *Vasilii Trukhanov.* Voltage Dependence of Light-Emitting Area Position in Channel of Oligothiophene-Phenylene Based Organic Light-Emitting Field-Effect Transistors
13:30 – 15:00	**Lunch**
15:00 – 19:00	**Trip to New Jerusalem (optional)**
15:00 – 19:00	**Sport activities**
19:00 – 20:00	**Dinner**
20:00 – 22:00	**Sport activities**

Friday, September 20th

8:00 – 9:00	**Breakfast**
	Chair: *Chihaya Adachi*
9:00 – 10:00	**T-10.** *Fabio Biscarini.* Neuromorphic Organic Electronics Biosensors
10:00 – 11:00	**T-11.** *Dorina Opris.* Functional Dielectric Elastomers: From Synthesis to Applications
11:00 – 11:30	**Coffee-break**
	Chair: *Sergey Ponomarenko*
11:30 – 12:00	**I-11.** *Dmitri Godovsky.* Redox Front Propagation in Polyaniline as a Basis for Rate-Based and Spike Neural Networks
12:00 – 12:30	**I-12.** *Carlo Bortolotti.* Expanding the EGOT-based Biosensor Toolbox by Materials Strategies
12:30 – 13:30	**Closing ceremony**
13:30 – 15:00	**Lunch**
15:00 – 15:15	**Departure to Moscow**

Poster session 1

Monday, September 16th, 17:00

Ajdari, Mohsen	P1	Investigation of N-Heteropolycyclic Molecules on Metal Surface by High Resolution Electron Energy Loss Spectroscopy
Aslandukov, Andrey N.	P2	Lanthanide Aromatic Carboxylates as Red, Green and Blue Emitters for Solution-processed OLEDs
Balakirev, Dmitry O.	P3	Novel Benzodithiophene-based Donor Oligomers for Non-fullerene Organic Solar Cells
Berens, Henning	P4	3,9-Disubstituted *anti-anti*-Bis[1]benzothieno[1,4]thiazines: Diversity Oriented Synthesis and Structure-Property Relationships of Potentially Antiaromatic Heterocyclic Donors
Borshchev, Oleg V.	P5	New Derivatives of Benzothienobenzothiophenes (BTBT) and Tetrathienoacenes (TTA) for Organic Electronics
Borshchev, Oleg V.	P6	New Organic Luminophores for Manufacturing Scintillation and Wavelength Shifting Polymer Fibers
Chekusova, Victoria P.	P7	Novel Tetrathienoacenes and Benzothienobenzothiophenes Derivatives: Investigation of Self-assembly and Thin Films Electrical Properties
Debnath, Bipasha	P8	A Study of Charge Transfer at the Interfaces of Organic Semiconductors
Dominskiy, Dmitry I.	P9	Impact of Fluorination on Crystal Packing of Di-phenyl naphthalene Diimide
Dominskiy, Dmitry I.	P10	Switching Between p- and n-type Transport in Organic Field-Effect Transistors by Terminal Substitution of Thiophene-phenylene Co-oligomers
Fedorenko, Roman S.	P11	Solution-processed High Performance 2D Field-effect Transistors Based on Luminescent BTBT Derivative
Geenen, Sarah R.	P12	Diversity-oriented Pd-Catalyzed Synthesis of Donor-Acceptor-Substituted Psoralens with Photosensitizing Properties for DNA-Intercalation
Ivanov, Konstantin S.	P13	Linear Spirocyclic Conjugated Systems as New Materials for Optoelectronics
Jacoutot, Polina	P14	Organic Infrared Photodetectors Based on Photoinduced Vibronic Phenomena
Jeong, Ahhyun	P15	Intraband Cooling Dynamics in Lead Halide Nanocrystals
Kalinichenko, Nadezhda K.	P16	Synthesis and Properties of Novel Liquid Benzothiadiazole-based Luminophores
Kalinina, Alexandra A.	P17	Polymer Muscles on the Base of Silicones
Kharlanov, Oleg G.	P18	Low Phonon Frequency Expansion for Charge Transport in Organic Crystals: Transient Localization in the Quantum Regime
Khudyshkina, Anna D.	P19	Synthesis of Poly(vinylidene fluoride-co-chlorotrifluoroethylene)-grafted-poly(acrylonitrile) Polymers for Ferroelectric Organic Field-effect Transistors

Kobeleva, Elena S.	P20	Performance of Novel Organic Semiconductors 2,2'-[2,2'-(arene-1,4-diyl)bis(anthra[2,3-b]thiophene-5,10-diylidene)] tetrapropanedinitriles as Non-fullerene Acceptors in Photovoltaics
Komarov, Pavel V.	P21	Computer Simulations of Nanocomposites Based on Conjugated Polymers and Fullerenes
Komarov, Pavel V.	P22	Mesoscale Simulations of Active Layer of Hybrid Polymer/ Semiconducting Nanoparticles Solar Cell
Bretschneider, Michael	P23	Charge Transport Properties of C8-BTBT field-effect transistors
Ding, Zicheng C.	P24	Efficient and Stable Organic Solar Cells Based on Small Molecule Donor and Polymer Acceptor
Elnaggar, Mohamed	P25	Towards Understanding the Interfacial Degradation Effects in p-i-n Perovskite Solar Cells
Eskandari, Mortaza	P26	Spectral Shapes of Cyanine Dyes Mediated by Counterion Positioning in Non-/Polar Media: a Computational Study
Klimovich, Irina V.	P27	Impact of the Molecular Structure of Conjugated Block-copolymers on Their Thin Film Morphology and Photovoltaic Performance
Kolesnikov, Efim A.	P28	Optical and Luminescent Properties of Cesium-copper Iodides Thin-films.
Lypenko, Dmitry A.	P29	J-aggregate Monolayers Resulting from Non-classical Multistage Crystallization
Lypenko, Dmitry A.	P30	Effect of J-aggregate Nanocrystals on OLED Stability

Poster session 2

Wednesday, September 18th, 17:00

Konstantinov, Vladislav G.	P31	Confocal Photoluminescence Microscopy of Organic Semiconducting Ultrathin Films
Koshelev, Daniil S.	P32	The Design of Lanthanide Heteroaromatic Carboxylates for Thermometry and OLED
Koskin, Igor P.	P33	Computational Study of a Novel AIE Luminogen bis(4-((9H-fluoren-9-lidene)methyl)phenyl)thiophene
Kriete, Björn	P34	A Microscopic View on Spectral Inhomogeneity in Molecular Nanotubes
Kuimov, Anatolii D.	P35	Doping of Furan/Phenylene Co-oligomer Single Crystals as an Efficient Way to Control Their Optoelectronic Performance
Kumar, Abhinav	P36	Coumarinacenes: Linearly π-Extended Coumarins
Kushch, Nataliya D.	P37	Structural Features and Polymorphism in New Organic Metals Based on BDH-TTP Donor and $[ReF6]^{2-}$ anion.
Lyubovskii, Rustem B.	P38	The Effect of Hydrostatic Pressure on Interlayer Charge Transport and the Electronic Structure of Metal Layers in a Two-layer in a Quasi-two-dimensional Organic Metal $(BETS)_4CoBr_4(C_6H_4Cl_2)$
Lukashkin, Nikita A.	P39	Amino-Selective Gas Sensor Based on Organic Field-effect Transistor Using Porphyrin Receptor Monolayer at the Semiconductor/Dielectric Interface

Nekrasov, Nikita P.	P40	Changes of Graphene Transistors Electronic Properties by Organic Deposition
Raoufi, Meysam	P41	Influence of Light Soaking on Charge Injection Properties at Hybrid Metal Oxide/Organic Interfaces
Saunina, Anna Yu.	P42	An Analytic Model of J-V Characteristics of Quantum Dot Based and Hybrid Photovoltaic Cells
Savchenko, Petr S.	P43	Organic Photodetectors Based on Donor-acceptor Star-shaped Oligomers: Towards Artificial Eye
Schmitt, Tanja	P44	Electronic States of Pentacene Derivatives
Shao, Shiyang	P45	Bipolar Poly(arylene phosphine oxide) Hosts with Widely-Tunable Triplet Energy Levels for High-Efficiency Blue, Green and Red TADF Polymer Light-Emitting Diodes
Skorotetcky, Maxim S.	P46	Synthesis of New Tetrathienoacene Semiconductors for Organic Field-effect Transistors
Solodukhin, Aleksandr N.	P47	Donor-acceptor Triphenylamine-based Oligomers of Different Architecture for Organic Electronics
Sonina, Alina	P48	Crystal packing control of a trifluoromethyl-substituted furan/phenylene co-oligomer
Sonina, Alina	P49	Crystallization and structures of dibenzofulvene-based derivatives
Trul, Askold A.	P50	Two-layer Langmuir-Schaefer OFETs for Real-time Detection of NH_3 and H_2S in Humid Air
Tukachev, Nikita V.	P51	Ground State Geometry and Vibrations of PPV Oligomers
Zaborin, Evgeniy	P52	Synthesis of Novel Silicon-containing Oligoarylenevinylenes via Heck Reaction
Lypenko, Dmitry A.	P53	Crystallography of Surface Destruction of Tubular J-aggregates of Cyanine Dye
Markina, Anastasia	P54	Molecular Design of Transport Properties and Energy Levels of Non-fullerene Organic Solar Cells
Parfenov, Alexey A.	P55	Highly Sensitive Perovskite-based Gas Sensors
Supangat, Azzuliani	P56	Highly Responsive Organic Composite Photodetector Based Small Molecules
Utochnikova, Valentina V.	P57	Lanthanide-based NIR Emitting OLEDs
Wang, Lixiang	P58	Through-Space Charge Transfer Polymers for Solution-processed OLEDs
Yusupov, Azat R.	P59	Photoconductivity of the Interface Between Two Polymer Dielectrics
Tarasenkov, Alexander, N.	P60	Dielectric Properties of Silicone Compositions Containing Metallosiloxanes