

| Meeting Agenda

27 May

14-00 to 19-00 Registration

Address: Ground-floor Lobby, Convention Center, SUSTech

28 May (day 1)

8-30 to 9-00 Opening session

Session Chair: Prof. Yury Illarionov

Southern University of Science and Technology, China

8-30 to 8-45 Prof. Yury Illarionov

Southern University of Science and Technology, China

"Welcome message from General Chair"

8-45 to 8-50 Senior Management Member

Southern University of Science and Technology, China

"Welcome message from Southern University of Science and Technology, China"

8-50 to 9-00 Dr. Roman Akasov

Moscow State Pedagogical University, Russia

"Welcome message from Moscow State Pedagogical University"

9-00 to 10-20 Plenary session 1

Session Chair: Prof. Yury Illarionov

Southern University of Science and Technology, China

9-00 to 9-40 Prof. Andrey Rogach

City University of Hong Kong, Hong Kong, China

"Colloidal nanomaterials for light"

9-40 to 10-20 Prof. Eugeny Alexandrov

Bauman Moscow State Technical University, Russia

"Topological methods for digital design of nanostructured polymeric materials"

10-20 to 10-40 Coffee break + posters

10-40 to 12-40	Plenary session 2
	Session Chair: Prof. Changjian Li
	Southern University of Science and Technology, China
10-40 to 11-20	Prof. Hassan Arafat
	Khalifa University, UAE
	"The vast potential of 2D materials applications in the United Arab Emirates"
11-20 to 12-00	Prof. Aleksey Fedorov
	Russian Quantum Center, Russia
	"Complex quantum systems and quantum technologies"
12-00 to 12-40	Prof. Pavlos Savvidis
	Westlake University, China
	"Polariton condensates in optically imprinted potentials: from 2D spin lattices to polaritonic qubits in annular traps"
12-40 to 14-00	Lunch + posters
14-00 to 16-00	SUSTech special session: lab introductions
	Session Chair: Prof. Yury Illarionov
	Southern University of Science and Technology, China
14-00 to 14-15	Prof. Yury Illarionov
	Southern University of Science and Technology, China
14-15 to 14-30	Prof. Changjian Li
	Southern University of Science and Technology, China
14-30 to 14-45	Prof. Boyuan Huang
	Southern University of Science and Technology, China
14-45 to 15-00	Prof. Jinhui Zhong
	Southern University of Science and Technology, China
15-00 to 15-15	Prof. Ruitao Wen
	Southern University of Science and Technology, China
15-15 to 15-30	Prof. Zhubing He
	Southern University of Science and Technology, China
15-30 to 15-45	Prof. Jiazen Wu
	Southern University of Science and Technology, China

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28 May (day 1)

15-45 to 16-00 **Prof. Xialong Chen**

Southern University of Science and Technology, China

16-00 to 16-20 **Coffee break + posters**

16-20 to 17-50 **Fundamental and theory**

Session Chair: Prof. Junlei Zhao

Southern University of Science and Technology, China

16-20 to 16-50
(keynote) **Prof. Fedor Kusmartsev**

Khalifa University, UAE

"Perfect darkness of Rashba meta-surfaces"

16-50 to 17-10 **Prof. Nan Wang**

GTIIT, China

"Connecting continuum and quantum mechanical electromigration theories at mesoscale using phase field crystal method"

17-10 to 17-30 **Prof. Raimundo Nogueira da Costa Filho**

Federal University of Ceara, Brazil

"Exploring graphene properties through the position dependent operator formalism"

17-30 to 17-40 **Short technical break**

17-40 to 18-45 **Computational design of materials**

Session Chair: Prof. Junlei Zhao

Southern University of Science and Technology, China

17-40 to 18-10
(keynote) **Prof. Yee Sin Ang**

Singapore University of Technology and Design, Singapore

"Computational design of sustainable 2D semiconductors, interfaces and devices"

18-10 to 18-30 **Prof. (RAP) Junlei Zhao**

Southern University of Science and Technology, China

"Machine-learning dynamic model of complex Ga_2O_5 polymorphs for next-generation extreme environment electronics"

**18-30 to 18-45
(Student)** **Mr. Majid Zeraati**

SKOLTECH, Russia

"Searching low thermal conductivity materials for thermal barrier"

29 May (day 2)

8-30 to 10-30 **Plenary session 3**

Session Chair: Prof. Wen Ruitao

Southern University of Science and Technology, China

8-30 to 9-10 **Prof. Sergey Makarov**

ITMO University, Russia and Harbin Engineering University, China

"Halide perovskite nanostructures for ultracompact lasers fabrication"

9-10 to 9-50 **Prof. Bowen Du**

Shenzhen University, China

"Black phosphonene and its biophotonics applications"

9-50 to 10-00 **Short technical break**

10-00 to 10-40 **Prof. Valentyn Volkov**

XPANCEO, UAE

"Giant optical anisotropy in van der Waals materials: perspectives and challenges"

10-40 to 11-20 **Prof. Xing Cheng**

Southern University of Science and Technology, China

"Micro- and nanofabrication for optical and biological engineering applications"

11-20 to 11-50 **Coffee break + posters**

Meeting Agenda

29 May (day 2)

11-50 to 13-20 **Biomedical devices and nanoparticles**

Session Chair: Prof. Panagiotis Grammatikopoulos, GTIIT China

11-50 to 12-20 **Prof. Alessandro Parodi
(keynote)**

Sirius University of Science and Technology, Russia

"Navigating the endosomal sequestration challenge: pioneering strategies in nanocarrier-based drug delivery"

12-20 to 12-40 **Dr. Roman Akasov**

Moscow State Pedagogical University, Russia

"Nanoparticle-enhanced photodynamic therapy"

12-40 to 13-00 **Prof. Sandeep Balaji Somvanshi**

Dr. Babasaheb Ambedkar Marathwada University, India

"Aptamer-based advanced biosensors"

13-00 to 13-20 **Prof. Panagiotis Grammatikopoulos**

GTIIT, China

"CMOS-integrated gas- and bio-sensors functionalized with gas-phase synthesized nanoparticles"

13-20 to 14-40 **Lunch + posters**

14-40 to 16-30 **Special session of Russian Quantum Center**

Session Chair: Prof. Yury Illarionov

Southern University of Science and Technology, China

14-40 to 15-10 **Prof. Alexander Chernov**

Russian Quantum Center, Russia

"1D and 2D materials for quantum technologies"

15-10 to 15-40 **Prof. Aleksey Akimov**

Russian Quantum Center, Russia

"Toward quantum simulations with Thulium atoms"

15-40 to 16-10 **Prof. Georgy Shlyapnikov**

Russian Quantum Center, Russia

"Novel phase transitions in disordered quantum systems"

16-10 to 16-30	Prof. Baowen Li Southern University of Science and Technology, China " Phononics and its applications in thermal management "
16-30 to 18-30	Poster session + coffee break (see the list of 21 posters In pages 15-17)
17-00 to 18-30	Round table discussions Topic 1: "Possible ideas for BRICS funding programs: how can we bring them to the attention of our government officials?" Topic 2: "How can we promote research journals published in BRICS countries to the global research community?"
19-00 to 22-00	Conference dinner

30 May (day 3)

8-40 to 10-00	Plenary session 4 Session Chair: Prof. Ivan Savenko, GTIIT China
8-40 to 9-20	Prof. Mathew Kisten Moodley The University of KwaZulu-Natal, South Africa "Laser Chemical Vapor Deposition of boron nanomaterials"
9-20 to 10-00	Prof. Cecilia de Carvalho Castro e Silva Mackenzie Presbyterian University, Brazil "Advancements in graphene-based materials for biosensing electronics"
10-00 to 10-20	Coffee break + posters
10-20 to 11-50	2D materials and devices I Session Chair: Prof. Cecilia de Carvalho Castro e Silva, Mackenzie Presbyterian University, Brazil
10-20 to 10-50 (keynote)	Dr. Chit Siong Aaron Lau A*Star Institute of Materials Research and Engineering, Singapore "Engineering 2D Material-based Devices for Nanoelectronics and Quantum Applications"
10-50 to 11-10	Prof. Yuanyuan Shi University of Science and Technology of China, China "Integration of 2D semiconductors based high-performance logic devices"

| Meeting Agenda

30 May (day 3)

11-10 to 11-30 **Dr. Evgeniia Lobanova**

Ioffe Institute, Russia

"Synthesis and structural characterization of highly oriented WS₂ thin films on Al₂O₃ (0001)"

11-30 to 11-50 **Dr. Sergey Suturin**

Ioffe Institute, Russia

"X-ray resonant reflectometry mapping as a tool for element selective profiling of 2D material based multilayers"

11-50 to 12-00 **Short technical break**

12-00 to 13-15 **2D materials and Technology II**

Session Chair: Prof. Cecilia de Carvalho Castro e Silva

Mackenzie Presbyterian University, Brazil

12-00 to 12-20 **Prof. Jinxiong Wu**

Nankai University, China

"Vertically grown high-k Bi₂SiO₅ and its dielectrics alloys for hysteresis-free 2D transistors"

12-20 to 12-40 **Prof. Yangbo Zhou**

Nanchang University, China

"Alternative crystalline insulators for 2D field-effect transistors"

12-40 to 13-00 **Dr. Seyedmahdi Sattari Esfahanl**

TU Wien, Austria

"Emerging high-k insulators for 2D field-effect transistors: Performance and reliability perspectives"

13-00 to 13-15 **Ms. Yezhu Lv**

Southern University of Science and Technology, China

"Comprehensive study of short-channel effects in MoS₂ FETs with different gate insulators using advanced TCAD tools"

13-15 to 14-30 **Lunch + posters**

14-30 to 16-20	Memory and neuromorphic computing Session Chair: Prof. Jinhui Zhong Southern University of Science and Technology, China
14-30 to 15-00 (keynote)	Prof. Ang Diing Shenp Nanyang Technological University, Singapore "Chalcogenide based conductive bridge resistive switching device for universal storage memory – opportunities and challenges"
15-00 to 15-20	Prof. Seyed Majid Mohseni Armaki Shahid Beheshti University, Iran "Microelectronic devices for memristors and neuromorphic computing"
15-20 to 15-40	Prof. Fei Hui Zhengzhou University, China "Scalable fabrication of two dimensional materials and their resistive switching behaviors"
15-40 to 16-00	Dr. Wei Wang Peng Cheng Lab, China "Learning-in-memory with low-footprint neuron circuits and non-ideal artificial synapses"
16-00 to 16-20	Dr. Zehao Song TU Wien, Austria "Trapping hot carriers in the monolithic Al-Ge-Al heterostructure toward plasmonic memory"
16-20 to 16-40	Coffee break + posters
16-40 to 19-30	Light interaction with nanomaterials Session Chair: Prof. Jinhui Zhong Southern University of Science and Technology, China
16-40 to 17-10 (keynote)	Prof. Jun Feng Southern University of Science and Technology, China "Shine the light on nanomaterials"
17-10 to 17-30	Prof. Ivan Savenko GTIIT, China "Photoinduced Hall and superconducting photodiode effects in 2D superconductors"

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30 May (day 3)

17-30 to 17-50 Dr. Anvar Baimuratov

University of Munich, Germany

"Hybrid moiré excitons and trions in MoTe₂–MoSe₂ heterobilayers"

17-50 to 18-10 Dr. Pashos Ioannis

Westlake University, China

"Strong-coupling utilizing 2D organic-inorganic halide perovskite crystals in Microcavity"

18-10 to 18-30 Prof. Valentin Jmerik

Ioffe Institute, Russia

"Hybrid 2D/3D heterostructures with monolayer-thick GaN/AlN quantum wells for ultraviolet-C optoelectronics"

18-30 to 18-50 Prof. Arwa Saud Abbas

King Abdulaziz City for Science and Technology (KACST), Saudi Arabia

"Nanolithography-free technology of low-defect AlN micro-columns selectively grown on patterned substrate by PA-MBE for next generation UVC lasers arrays"

18-50 to 19-10 Prof. Majid Ghanaatshoar

Shahid Beheshti University, Iran

"Ga₂O₃-based alloys: promising wide band gap materials in advancements of photovoltaic and optoelectronic

19-10 to 19-30 Dr. Muhammad Zubair Nawaz

Southern University of Science and Technology, China

"Introducing self-powered mechanism in pristine CdS nanostructures by device engineering"

19-35 to 19-45 Closing remarks and announcement of "2nd Open BRICS Conference on Smart Materials and Devices"

Prof. Yury Illarionov, Southern University of Science and Technology, China

| Posters

Organizing Chair: Dr. Yajing Chai
Southern University of Science and Technology

External participants (2)

P1. Mr. Jianming Huang, South China Normal University, China

"Two-dimensional WSe₂ Schottky heterojunction reconfigurable transistors and their optoelectrical logic function"

*Joining Prof. Yury Illarionov as a PhD student in Fall 2024

P2. Mr. Zhixuan Lin, GTIIT, China

"On the Melting Point Variation, Coalescence, and Chemical ordering of Bimetallic Nanoparticles"

Group of Prof. Yury Illarionov (2)

P3A. Dr. Yajing (Angela) Chai, Southern University of Science and Technology, China

"The use of Comphy software to predict reliability of scaled FETs with TMD channels"

P3B. Dr. Muhammad Zubair Nawaz, Southern University of Science and Technology, China

"Novel morphologies of ternary micro-nano structures for optoelectronic flexible devices"

Group of Prof. Changjian Li (2)

P4A. Mr. Yingli Zhang, Southern University of Science and Technology, China

"High-performance van der Waals FETs with a one-step heterogeneous transfer printing process"

P4B. Ms. Youna Huang, Southern University of Science and Technology, China

"Multi level memory based on CIPS/MoS₂ ferroelectric field effect"

Group of Prof. Boyuan Huang(1)

P5. Mr. Xiangping Zhang, Southern University of Science and Technology, China

"Elastic properties and Ion-mediated domain switching of self-assembled heterostructures CulnP₂S₆-In^{4/3}P₂S₆"

| Posters

Group of Prof. Jun Feng(3)

P6A. Mr. Xingchen Liu, Southern University of Science and Technology, China

"Influence of Nitrogen doping on polarized emission of Carbon quantum dots and its application in LED fabrication"

P6B. Ms. Jingyan Yu, Southern University of Science and Technology, China

"Synthesis of wide color gamut quantum dots by one step solvothermal method"

P6C. Mr. Yonggen Tan, Southern University of Science and Technology, China

"Hydrothermal synthesis, properties and application of fluorescent MoS₂ quantum dots"

Group of Prof. Jinhui Zhong (2)

P7A. Mr. Kai-Zhen Liu, Southern University of Science and Technology, China

"Stress control and in-situ characterization of plasmon-exciton polaritons"

P7B. Mr. Weiming Song, Southern University of Science and Technology, China

"Microregion spectral acquisition based on Fourier transform spectroscopy"

Group of Prof. Xiaolong Chen (3)

P8A. Mr. Zihan Liang, Southern University of Science and Technology, China

"Bulk photovoltaic effect in edge embedded structures"

P8B. Mr. Shouheng Chen, Southern University of Science and Technology, China

"Electrofluorescence of black phosphorus-van der Waals heterostructures"

P8C. Mr. Han Wang, Southern University of Science and Technology, China

"Room-temperature infrared spectrometer based on a black phosphorus/molybdenum disulfide heterojunction diode"

| Posters

Group of Prof. Jiazen Wu (1)

P9. Ms. Xinmeng Hu, Southern University of Science and Technology, China

"Antisite-defects control of magnetic properties in $MnSb_2Te_4$ "

Group of Prof. Ruitao Wen (2)

P10A. Ms. Menghan Yin Southern University of Science and Technology, China

"Evolution of optical absorption during WO_3 electrochromism"

P10B. Ms. Peipei Shao Southern University of Science and Technology, China

"Electrochromic performance fading and restoration in amorphous TiO_2 thin films"

Group of Prof. Mengyuan Hua and Prof. Junlei Zhao (1)

P11. Mr. Jun Zhang, Southern University of Science and Technology, China

"Orientation-dependent atomic-scale mechanism and defect evolution"

Group of Prof. Zhubing He (1)

P12. Prof. (RAP) Qin TAN, Southern University of Science and Technology, China

"Bulk and interface modification strategies for perovskite films based on self-assembling molecules"

Group of Prof. Weishu Liu (1)

P13. Mr. Benben Li, Southern University of Science and Technology, China

"Electronic skin with biomimetic structures realizes excellent isothermal regulation"