

2024 Symposium on Advanced Functional Materials for Quantum Electronics and Superconductivity



Organized By:

School of Physics, Beijing Institute of Technology (BIT)

Landau Phystech School of Physics and Research, Moscow Institute
of Physics and Technology (MIPT)

July 18-21, 2024

Program for 2024 Symposium on Advanced Functional Materials for Quantum Electronics and Superconductivity

July 18-21, 2024, BIT, Beijing, China

Thursday, July 18, 2024		
Location: Beijing Northern Spring Conference Center		
10:00-18:00	Conference Check-in and Registration	
18:00-19:30	Welcome Reception	
Friday, July 19, 2024		
Location: Industry Ecological Building, Room 118		
Tencent Meeting: TBA Password: TBA		
Session Chair: Jiafang Li		
9:00-9:20	Opening Ceremony & Introduction	
9:20-9:50	Ye-Liang Wang (Keynote)	Reversible Switching of Chiral Charge Density Wave Superlattices and the Stacking Electronic Behaviors
9:50-10:00	Coffee Break & Take Photos	
10:00-10:30	Alexander Golubov (Keynote)	Supercurrent Reversal in Zeeman-Split Josephson Junctions
10:30-11:00	Fan Yang (Keynote)	TBA
Session Chair: Alexander Golubov		
11:00-11:30	Vasily Stolyarov (Keynote)	Josephson Vortex-Based Memory

11:30-12:00	Jun-Xi Duan (Invited)	Topological Effects and Correlation in Quantum Transport in Low-Dimensional Materials
Lunch Physical Experiment Center, Room 229		
Session Chair: Wei Jiang		
14:00-14:30	Aleksandr Bobkov (Invited)	Magnetoelectric Effects in Superconductor/ferromagnet/S uperconductor Josephson Junctions
14:30-15:00	Sheng-Shan Qin (Invited)	TBA
15:00-15:30	Irina Bobkova (Invited)	Controllable Proximity Effects in Superconductor/ferromagnet van der Waals Heterostructures
15:30-15:40	Coffee Break	
Session Chair: Vasily Stolyarov		
15:40-16:10	Vadim Grinenko (Invited)	Multicomponent superconductivity and four- fermion phase in the Ba _{1- x} K _x Fe ₂ As ₂ system
16:10-16:40	Quan-Zhen Zhang (Invited)	Construction of novel 2D heterostructures and the electronic states investigation
16:40-17:10	Yu Zhang (Invited)	Construction and manipulation of correlated electronic states in NbSe ₂
17:10-17:25	Grigorii Bobkov	Spin supercurrent in superconductor/ferromagnet van-der-Waals heterostructures
17:25-17:40	Liang-Guang Jia	Colossal structural distortion and interlayer-coupling suppression in a vdW crystal

		induced by atomic vacancies
18:00-19:30 Buffet at Dining Hall		
Saturday, July 20, 2024 Location: Physical Experiment Center, Room 229 Tencent Meeting: TBA Password: TBA		
Session Chair: Irina Bobkova		
9:00-9:30	Anatolie Sidorenko (Keynote)	Superconducting Base Elements for Artificial Neural Networks
9:30-10:00	Jiang-Wei Shang (Invited)	Estimating Many Properties of a Quantum State <i>via</i> Quantum Reservoir Processing
10:00-10:30	Tian Chen (Invited)	The Dynamic Control Around Exceptional Points
10:30-10:50	Coffee Break	
Session Chair: Jiang-Wei Shang		
10:50-11:20	Alexei Vagov (Invited)	Intertype Superconductivity in Ferromagnetic and Multi-Band Superconductors
11:20-11:50	Dong-Fei Wang (Invited)	On the pursuit of Majorana Fermion in Fe (Te,Se)
Lunch Physical Experiment Center, Room 229		
Session Chair: Zhi-Wei Wang		
14:00-14:30	Alexandr Frolov (Invited)	Magnetic Topological Insulators: A Case Study of $\text{Ge}_x\text{Mn}_{1-x}\text{Bi}_2\text{Te}_4$
14:30-15:00	Feng Li (Invited)	TBA
15:00-15:30	Mikhail Talanov (Invited)	Geometrically frustrated ferroelectrics and relaxors
15:30-15:40	Coffee Break	

Session Chair: Aleksandr Bobkov		
15:40-16:10	Lada Yashina (Invited)	Crystal Growth and Characterization of Complex Topological Insulators
16:10-16:40	Di Zhou (Invited)	From Soft Matter to Topological Mechanical Metamaterials
16:40-16:55	Anastasia Ianovskaya	Magnetic proximity effect in superconductor/ferromagnet van der Waals heterostructures: dependence on the number of superconducting monolayers
16:55-17:10	Yao-Yao Chen	Visualization of Confined Electrons at Grain Boundaries in a Monolayer Charge- Density-Wave Metal
17:10-17:40	Poster Session	
18:00-19:30 Banquet		
Sunday, July 21, 2024 Building: Physical Experiment Center, Room 229 Tencent Meeting: TBA Password: TBA		
Session Chair: Jun-Feng Han		
9:00-9:30	Boris Gorshunov (Invited)	Energy States of Li ion Confined Within Nano-cages of C60 Fullerene
9:30-10:00	Gang Wang (Invited)	TBA
10:00-10:30	Chong Wang (Invited)	Hyperbolic plasmons in anisotropic 2D films
10:30-10:50	Coffee Break	
Session Chair: Boris Gorshunov		
10:50-11:20	Alexei Aladyshkin	Visualization of Atomic

	(Invited)	Structures on Stepped, Faceted and Non-flat Surfaces by Difference-of-Gaussians Approach
11:20-11:50	Meng-Xue Guan (Invited)	First-principles Simulations of Ultrafast Phase Transition in Condensed-Matter Systems
Lunch Physical Experiment Center, Room 229		
Session Chair: Alexei Aladyshkin		
14:30-15:00 Moscow Time: 9:30-10:00	Alexander Baryushev (On-line, Invited)	In-situ Ellipsometric Study of WO_{3-x} Dielectric Permittivity During Gasochromic Coloration
15:00-15:30 Moscow Time: 10:00-10:30	Konstantin Motovilov (On-line, Invited)	The Hydration-induced Pancake Bonding in Melanins
15:30-15:40	Coffee Break	
15:40-16:10 Moscow Time: 10:40-11:10	Denis Vyalikh (On-line, Invited)	TBA
16:10-16:40 Moscow Time: 11:10-11:40	Dmitriy Usachev (On-line, Invited)	Electronic structure and magnetism of lanthanide compounds probed by photoemission
16:40-17:40	Student Programs	TBA
17:40-18:00	Closing Ceremony	