

**Symposia - E02 & B01**  
**Superconductor Materials & Quantum Materials**

**Oct. 15 (Sunday), 2023**

**Conference Room: 7101B, -1#floor**

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**8:50-9:00 Opening Remarks**

**Xuechu Shen**

**9:00-10:45 Session I**

**Chair: Xiaoming Xie, Guanghan Cao**

**9:00-9:30 (E02-01)**

**Anomalous Enhancement of Critical Current Density in Superconductors with Columnar Defects (Keynote)**

Tsuyoshi Tamegai, The University of Tokyo, Japan

**9:30-9:55 (E02-02)**

**Superconductivity near 80 K in  $\text{La}_3\text{Ni}_2\text{O}_7$  under pressure (Invited)**

Meng Wang, Sun Yat-sen University, China

**9:55-10:20 (E02-03)**

**Pressure-induced Superconductivity at 32 K in  $\text{MoB}_2$  (Invited)**

Yanpeng Qi, ShanghaiTech University, China

**10:20-10:45 (E02-04)**

**Observation of nonreciprocal transport in heterostructure of ferromagnet and superconductor (Invited)**

Jun Li, ShanghaiTech University, China

**10:45-10:55 Coffee Break**

**10:55-12:00 Session II**

**Chair: Zhixiang Shi**

**10:55-11:20 (E02-05)**

**Higgs-Leggett mechanism for the elusive 6e superconductivity in Kagome material  $\text{CsV}_3\text{Sb}_5$  (Invited)**

Ling-Feng Zhang, Shanghai University, China

**11:20-11:45 (E02-06)**

**Modeling and optimization of the HTS flux-pinning maglev vehicle-track relationship (invited)**

Jun Zheng, Southwest Jiaotong University, China

**11:45-12:05 (E02-07)**

**Vanadium-based superconductivity in the breathing kagome compound  $\text{Ta}_2\text{V}_3.1\text{Si}_0.9$  (Oral)**

HongXiong Liu, Institute of Physics, Chinese Academy of Sciences, China

**12:05-14:00 Lunch**

**14:00-15:45 Session III**

**Chair: Wei Ren**

**14:00-14:30 (B01-01)**

**Across-layer sliding/moiré ferroelectricity in 2D systems (Keynote)**

Menghao Wu, Huazhong University of Science and Technology, China

**14:30-14:55 (B01-02)**

**Interaction-driven electronic states in ABC-stacked multilayer graphene ABC (Invited)**

Guorui Chen, Shanghai Jiao Tong University, China

**14:55-15:20 (B01-03)**

**Moire flat bands and interfacial charge polarization in lattice relaxed twisted bilayer hexagonal boron nitride under perpendicular electric fields (invited)**

Fengping Li, University of Seoul, Korea

**15:20-15:45 (B01-04)**

**First-principles studies of low-dimensional magnetic, topological, and multiferroic materials (Invited)**

Xuanyi Li, Fudan University, China

**15:45-15:55 Coffee break**

**15:55-17:35 Session IV**

**Chair: Jeil Jung**

**15:55-16:20 (B01-05)**

**2D  $\text{NbSe}_2$  with Star-of-David CDW Superstructures---A Versatile Platform for Exploring Quantum Phenomena (Invited)**

Liwei Liu, Beijing Institute of Technology, China

**16:20-16:45 (B01-06)**

**The Application of Machine Learning in Material Simulation Design (Invited)**

Peng Kang, Beihang University, China

**16:45-17:10 (B01-07)**

**Topological magnetic memory materials (Invited)**

Zhipeng Hou, South China Normal University, China

**17:10-17:35 (B01-08)**

**Anomalous transport properties and Dzyaloshinsky-Moriya interaction in kagome antiferromagnet (Invited)**

Guixin Cao, Shanghai University, China

**17:50 Dinner**

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**Oct. 16 (Monday), 2023**

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**9:00-10:45 Session I**

**Chair: Vadim Grinenko, Chuanbing Cai**

**9:00-9:30 (E02-01)**

**Block-Layer Design of Superconductors with Intergrowth Structures (Keynote)**

Guanghai Cao, Zhejiang University, China

**9:30-9:55 (E02-02)**

**Superconductivity up to 30 K in annealed CaFeAsF (Invited)**

Gang Mu, Shanghai Institute of Microsystem and Information Technology, China

**9:55-10:20 (E02-03)**

**Recent advances in iron-based superconductors for practical applications (Invited)**

Chiheng Dong, Institute of Electrical Engineering, Chinese Academy of Sciences, China

**10:20-10:45 (E02-04)**

**The research and challenge of superconducting materials used in fusion reactor (Invited)**

Chao Zhou, Institute of Plasma Physics, Chinese Academy of Sciences, China

**10:45-11:00 Coffee Break**

**11:00-11:50 Session II**

**Chair: Junyi Ge**

**11:00-11:25 (E02-05)**

**Artificial Flux Pinning in MOD-REBaCuO Superconducting Coated Conductors (Invited)**

Chuanbing Cai, Shanghai University, China

**11:25-11:50 (E02-06)**

**Multicomponent superconductivity and four-fermion phase in the  $Ba_{1-x}K_xFe_2As_2$  system (Invited)**

Vadim Grinenko, Shanghai Jiao Tong University, China

**12:00-14:00 Lunch**

**14:00-15:50 Session III**

**Chair: Tsuyoshi Tamegai, Gang Mu**

**14:00-14:25 (E02-07)**

**Tuning the detection performance of superconducting nanowire single photon detector via ion irradiation (Invited)**

Wei-Jun Zhang, Shanghai Institute of Microsystem and Information Technology, China

**14:25-14:50 (E02-08)**

**First-principles prediction of 2D high-**

**temperature superconductors containing light-weighted elements (Invited)**

Hongyan Lu, Qufu Normal University, China

**14:50-15:10 (E02-09)**

**Novel superconductivity of layered meta-stable transition metal dichalcogenides (Oral)**

Yuqiang Fang, Shanghai Institute of Ceramics, Chinese Academy of Science, China

**15:10-15:30 (E02-10)**

**Electronic Origin of High-Tc Maximization and Persistence in Trilayer Cuprate Superconductors (Oral)**

Xiangyu Luo, Institute of Physics, Chinese Academy of Sciences, China

**15:30-15:50 (E02-11)**

**The discovery of bulk superconductivity in the quasi-one-dimensional ternary  $AMn_6Bi_5$  (Oral)**

Bosen Wang, Institute of Physics, Chinese Academy of Sciences, China

**15:50-16:00 Coffee break**

**16:00-17:50 Session IV**

**Chair: Guixin Cao**

**16:00-16:30 (B01-09)**

**Orbitronics: Electron orbital angular momentum in solids (Keynote)**

Hyun-Woo Lee, Pohang University of Science and Technology, Korea

**16:30-16:55 (B01-10)**

**Intelligent infrared optoelectronic devices (Invited)**

Jinshui Miao, Shanghai Institute of Technical Physics of the Chinese Academy of Sciences, China

**16:55-17:20 (B01-11)**

**Reliable Density Functional Approaches with Asymptotic-Potential Corrections are Required for 2D Materials Spectroscopic Properties (invited)**

Musen Li, Shanghai University, China

**17:20-17:35 (B01-12)**

**Perpendicular Dzyaloshinsky-Moriya interaction in the chiral antiferromagnetism**

Xinyu Yao, Shanghai University, China

**17:35-17:50 (B01-13)**

**The weak localization in Ni-doped  $Fe_5GeTe_2$**   
Xiumin Long, Shanghai University, China