

International Workshop on Interface Science for Novel Physical Properties and Electronics

9 December 2013: *Interface Science*

9:00 - 9:10 Opening: S. Yamamoto / Y. Kubozono

1-1. *Electrostatic carrier accumulation for superconductivity and interface superconductivity based on 2D materials*

Chair: Vincent Bouchiat

[1] 9:10 - 10:10 Yoshi Iwasa (Tokyo)

"2D Electron Systems Produced by Ionic Gating"

[2] 10:10 - 10:55 Xiaodong Cui (HongKong)

" Spin-valley coupling in atomically thin dichalcogenides"

10:55 - 11:15 Coffee Break

Chair: Hidenori Goto

[3] 11:15 - 12:00 Hiroshi Yamamoto (IMS)

"Organic Mott-FET and its phase transitions"

[4] 12:00 - 12:45 Andrea Young (MIT)

"Tunable symmetry breaking and helical edge transport in a graphene quantum spin Hall state"

12:45 - 13:45 Lunch

1-2. *Materials science for New superconductors I*

Chair: Bertram Batlogg

[5] 13:45 - 14:30 Eric Spanton (Stanford)

"Conductivity, Superconductivity, and Domain Structure in Strontium Titanate Based Materials"

[6] 14:30 - 15:15 Takayoshi Yokoya (Okayama)

"High-resolution PES of K doped picene film"

[7] 15:15 - 16:00 Minoru Nohara (Okayama)

"Superconductivity in CaFeAs_2 (112) and CaFe_2As_2 (122) with RE doping"

16:00 - 16:20 Coffee Break

1-3. Materials science for New superconductors II

Chair: Minoru Nohara

[8] 16:20 - 17:05 Katsuya Shimizu (Osaka)

"Superconductivity onset at very high pressure"

[9] 17:05 - 17:50 Zenji Hiroi (ISSP, Tokyo)

"Metal-Insulator Transitions in Transition Metal Oxides"

[10] 17:50 - 18:35 Anvar Zakhidov (Texas)

"Low Field Microwave Absorption in Superconducting Fe-Pnictides and Chalcogenides"

18:35 - 18:55 Coffee Break

1-4. Future functional organic FETs

Chair: Antonio Cassinese

[11] 18:55 - 19:45 Tatsuo Hasegawa (AIST)

"Interface Charge Transport and Device Physics of Organic Transistors"

[12] 19:45 - 20:35 Antonio Fchetti (Northwestern)

"Synthesis and Charge Transport Properties of P-N Semiconductor Blends"

21:00 – 22:30 Welcome party

10 December 2013: Organic and inorganic FETs

2-1. Interface control for organic FETs

Chair: Yoshi Iwasa

[13] 9:00 - 10:00 Bertram Batlogg (ETH Zurich)

"Charge transport and trapping in OFETs :approaching the trap-free limit in single-crystal devices"

[14] 10:00 - 10:50 Jun Takeya (Tokyo)

"Materials and devices of high-performance organic transistors"

10:50 - 11:10 Coffee Break

2-2. Organic FET for application

Chair: Yoshihiro Kubozono

[15] 11:10 - 12:00 Antonio Cassinese (Napoli)

"Interface Charge Transport and Device Physics of Organic Transistors"

[16] 12:00 - 12:45 Yasuhiko Hayashi (Okayama)

"Control of molecular orientation for high-performance polymer field-effect transistors by Direct Pen Painting method"

12:45 - 13:45 Lunch

2-3. Topological insulator and superconductor

Chair: Xiaolong Chen

[17] 13:45 - 14:30 Andrei Varykhalov (BESSY-Berlin)

"Tunable spin-orbit effects in graphene and topological insulators"

[18] 14:30 - 15:15 Guoqing Zheng (Okayama)

"Noncentrosymmetric Superconductors: a possible route to topological superconductivity"

15:15 - 15:35 Coffee Break

2-4. Materials science for New superconductors III

Chair: Guoqing Zheng

[19] 15:35 - 16:20 Tatsuo C. Kobayashi (Okayama)

"Localized to itinerant crossover of 4f electrons in CeCu_2Si_2 under high pressure"

[20] 16:20 - 17:05 Xiaolong Chen (Beijing)

"Some progresses on the study of iron selenide based superconductors"

[21] 17:05 - 17:50 Yoshihiro Kubozono (Okayama)

"New organic / inorganic superconductors prepared using liquid NH_3 technique"

17:50 - 18:10 Coffee Break

2-5. Session for young researchers

Chair: Mario Barra

[22] 18:10 - 18:40 Hiroki Mori (Okayama)

"Synthesis, Characterization, and Transistor Applications of a Phenanthro[1,2-b:8,7-b']dithiophenes (PDT)"

[23] 18:40 - 19:00 Eri Uesugi (Okayama)

"Transport properties of graphene edges"

[24] 19:00 - 19:20 Satoki Maeda (Okayama)

"Crystal structure and superconductivity in $\text{LaPt}_{2-x}\text{Ge}_{2+x}$ "

20:30 – 22:30 Banquet

11 December 2013: *Materials Science for superconductivity*

3-1. *Physical properties of organic FETs*

Chair: Takayoshi Yokoya

[25] 09:00 - 09:45 Mario Barra (Napoli)

"N-type organic transistors based on Perylene diimide molecules: from bias stress effects to electrical operation in liquid environments"

[26] 09:45 - 10:15 Ritsuko Eguchi (Okayama)

"High performance organic field-effect transistors based on [n]phenacene-type molecules"

[27] 10:15 - 10:45 Thomas Mathis (ETH Zurich)

"Stable organic field-effect-transistors with high mobilities unaffected by supporting dielectric based on π -bridged thienobenzothiophene"

10:45 - 11:05 Coffee Break

Chair: Yasuhiko Hayashi

[28] 11:05 - 11:40 Takashi Kambe (Okayama)

"Dynamics of Carrier Injection in Picene Thin Film FET with Ionic Liquid Sheet and Ionic Liquid Gel Probed by Electron Spin Resonance"

[33] 11:40 - 12:10 Takanori Wakita (Okayama)

"Spectroscopic evidence for metallic states in potassium-intercalated picene film on graphite"

[29] 12:10 - 12:55 Naoshi Ikeda (Okayama)

"Recent progress in ferroelectric material"

12:55 - 14:00 Lunch

3-2. *FET properties of topological insulator and graphene*

Chair: Xiaodong Cui

[30] 14:00 - 14:30 Hidenori Goto (Okayama)

"Electronic properties of few-layer graphene with ionic-liquid gates"

[31] 14:30 - 15:30 Vincent Bouchiat (Grenoble)

"How to make graphene a macroscopic superconductor: from proximity effect to intrinsic superconductivity"

[32] 15:30 - 16:30 Kazuhito Tsukagoshi (NIMS)

"Atomically thin semiconducting channels for future nano-electronics"

16:30 - 16:40 Closing: T. C. Kobayashi