

The 14th APCTP Workshop on Multiferroics

Oct. 19-21, 2023, Takeda Sentanchi Hall, University of Tokyo

Oct. 19 (Thu), 2023

9:00-9:10	Opening
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Session 1: Manipulation of ferroics		<i>Chair: M. Azuma</i>
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9:10-9:40	Pioneering a novel perovskite oxide substrate and developing emergent electronics of reversibly controlled ternary polar states <i>Yoon Seok Oh (UNIST, Korea)</i>
9:40-10:10	Designing multiferroic magnetoelectric hexagonal oxide materials <i>Hena Das (Tokyo Tech. / KISTEC, Japan)</i>
10:10-10:40	Charge and orbital ordering in mercury containing perovskite oxides <i>Wei-Tin Chen (National Taiwan Univ., Taiwan)</i>

Session 2: Domain topology		<i>Chair: S. Mori</i>
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11:05-11:35	Manipulation of ferroelectric topological domain structures <i>Jun-Ming Liu (Nanjing Univ. / South China Normal Univ., China)</i>
11:35-12:05	Topological defects in multiferroic materials <i>Jan Seidel (UNSW Sydney / FLEET, Australia)</i>
12:05-12:35	Dynamic mechanical writing of polar bubbles <i>Chan-Ho Yang (KAIST, Korea)</i>

13:50-15:40	Poster Session
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Session 3: Chirality		<i>Chair: J.-M. Liu</i>
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15:50-16:20	Giant X-ray circular dichroism in a time-reversal invariant antiferromagnet <i>Di-Jing Huang (National Synchrotron Radiation Research Center, Taiwan)</i>
16:20-16:40	Electric field-induced magnetochiral dichroism in a ferroaxial crystal <i>Takeshi Hayashida (Univ. of Tokyo, Japan)</i>
16:40-17:10	Truly chiral phonons in chiral materials by circularly polarized Raman spectroscopy <i>Takuya Satoh (Tokyo Tech. / Institute for Molecular Science, Japan)</i>
17:10-17:40	Chiral phonons probed by Xrays <i>Hiroki Ueda (PSI, Switzerland)</i>

18:00-20:00	Welcome Reception (@Takeda Sentanchi Building)
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Oct. 20 (Fri), 2023

Session 4: Optical study		<i>Chair: K. H. Kim</i>
9:00-9:30	Giant optical magnetoelectric effects of electromagnons in cycloidal helimagnets $\text{Eu}_{1-x}\text{Y}_x\text{MnO}_3$ <i>Youtarou Takahashi (Univ. of Tokyo, Japan)</i>	
9:30-9:50	Direct visualization of a filament formation process in an oxide thin film by optical microscopy, transmission electron microscopy and Raman microscopy <i>Heung-Sik Park (KAIST, Korea)</i>	
9:50-10:10	Terahertz bulk photovoltaic effect by soft phonon in ferroelectrics <i>Yoshihiro Okamura (Univ. of Tokyo, Japan)</i>	

Session 5: Metallic multiferroics		<i>Chair: S. Dong</i>
10:35-11:15	Generalized multiferroics - conducting and superconducting systems <i>Naoto Nagaosa (RIKEN CEMS, Japan)</i>	
11:15-11:45	Helimagnetism and emergent response in rare earth based tellurides and intermetallics <i>Max Hirschberger (Univ. of Tokyo / RIKEN, Japan)</i>	
11:45-12:15	Visualizing magnetoelectric domains in a metallic antiferromagnet <i>Tsuyoshi Kimura (University of Tokyo, Japan)</i>	

12:30-13:00	Luncheon seminar for young scientists and students <i>Introducing Sumitomo Chemical's strong correlation project for ecological friendly device that started this year</i> (@Foyer, open 12:30~, seminar 12:45-13:00)	
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Session 6: Spiral multiferroics		<i>Chair: S. Seki</i>
13:30-14:00	Magnetization reversal by electric field at room temperature in Co substituted bismuth ferrite thin film <i>Masaki Azuma (Tokyo Tech. / KISTEC, Japan)</i>	
14:00-14:30	Topological aspects of order parameter switching in multiferroics <i>Sergey Artyukhin (Italian Institute of Technology, Italy)</i>	
14:30-15:00	A double-helical spin ordering in the helimagnet YBaCuFeO_5 <i>Chao-Hung Du (Tamkang Univ., Taiwan)</i>	
15:00-15:30	Multiferroic properties in thin hexaferrite films and 2D materials <i>Kee Hoon Kim (Seoul National Univ., Korea)</i>	

Session 7: Altermagnetism		<i>Chair: M. Kläui</i>
15:55-16:35	Altermagnetism vs. weak ferromagnetism <i>Sang-Wook Cheong (Rutgers Univ., USA)</i>	
16:35-16:55	Piezomagnetic detection of time-reversal symmetry breaking in altermagnets <i>Takuya Aoyama (Tohoku Univ., Japan)</i>	
16:55-17:25	Topological transport properties in antiferromagnets with broken time-reversal symmetry <i>Shinichiro Seki (Univ. of Tokyo, Japan)</i>	
17:25-17:55	Altermagnetism with seesaw-type magnetoelectricity <i>Shuai Dong (Southeast Univ., China)</i>	

18:30-20:30	Invited speakers dinner	
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Oct. 21 (Sat), 2023

Session 8: 2D ferroelectrics, 2D multiferroics		<i>Chair: C.-H. Yang</i>
9:00-9:30	Novel phases and applications of ferroelectric perovskite oxide membranes <i>Yuefeng Nie (Nanjing Univ., China)</i>	
9:30-10:00	Design low-dimensional ferroelectrics with depolarization field <i>Shi Liu (Westlake Univ., China)</i>	
10:00-10:30	A type-II multiferroic in two dimensions <i>Riccardo Comin (MIT, USA)</i>	

Session 9: Device, Application		<i>Chair: J. Seidel</i>
10:55-11:25	Electric field manipulation of magnetic topological structures in ferroics <i>Mathias Kläui (Johannes Gutenberg University Mainz, Germany)</i>	
11:25-11:55	Data storage approaches based on ferroelectric domain walls <i>Pankaj Sharma (Flinders Univ. / FLEET, Australia)</i>	
11:55-12:15	Hydrothermal fabrication of Au-BiFeO ₃ for superior photocatalytic degradation efficiency <i>Jhen-Yang Wu (Tokyo Tech., Japan)</i>	

12:15-12:25	Closing	
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