

# JSPS Core-to-Core Workshop

## Novel Quantum and Functional Materials

– Design and Synthesis –

August 7–9, 2017 • Stuttgart, Germany

Werner Köster Lecture Hall 2R4  
Max Planck Institute for Solid State Research



# PROGRAM

Monday, August 7, 2017

	9:30 – 9:40	Opening	
Session I	9:40 – 10:10	<b>Yuichi Shimakawa</b> Kyoto University	Charge and spin order in oxides containing unusually high-valence cations
	10:10 – 10:40	<b>Masahiko Isobe</b> MPI for Solid State Research	Exotic phase transitions in A-site-ordered chromium perovskites
	10:40 – 11:10	<b>Angel Arevalo-Lopez</b> University of Edinburgh	High pressure A-site manganites
	11:10 – 11:30	Coffee break	
Session II	11:30 – 12:10	<b>Gennady Logvenov</b> MPI for Solid State Research	Wonderful world of oxides heterostructures
	12:10 – 12:40	<b>Leslie Schoop</b> MPI for Solid State Research	Chemical principles for designing topological materials
		Lunch	
	13:30 – 14:30	Poster session I	
Session III	14:30 – 15:10	<b>Daniel Khomskii</b> University of Cologne	Orbital-selective effects and ligand holes in transition metal compounds
	15:10 – 15:40	<b>Alexander Browne</b> University of Edinburgh	Orbital ordering and structural distortions in vanadium spinels
	15:40 – 16:00	<b>Aleksandra Krajewska</b> University of Stuttgart	New indium ruthenate with spin singlet formation
	16:00 – 16:20	Coffee break	
Session IV	16:20 – 16:50	<b>Yoichi Ando</b> University of Cologne	Synthesis of topological-insulator-based superconductors and their mysterious chemistry
	16:50 – 17:20	<b>Naoka Hiraoka</b> The University of Tokyo	Electronic phase control of SrIrO <sub>3</sub> with Dirac line nodes
	17:20 – 17:50	<b>Hiroshi Takatsu</b> Kyoto University	Two dimensional monopole dynamics in spin ice
		Barbecue	 In the park in front of the canteen.
		Discussion & Business Meeting	

## Tuesday, August 8, 2017

Session V	9:00 – 9:40	<b>Reinhard Kremer</b> MPI for Solid State Research	Unconventional ground states in frustrated antiferromagnetic Heisenberg quantum spin chains
	9:40 – 10:10	<b>Zenji Hiroi</b> The University of Tokyo	Molecular orbital crystals
	10:10 – 10:30	<b>Jingyi Ran</b> University of Edinburgh	Reduced phases of (Ca,Sr)CrO <sub>3</sub> solid solutions
	10:30 – 10:50	Coffee break	
Session VI	10:50 – 11:30	<b>Nita Dragoe</b> University Paris-Sud	Recent progress in high entropy oxides
	11:30 – 12:00	<b>Ru-Shi Liu</b> National Taiwan University	Preparation and characterization of Li <sub>7</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> and Li <sub>1.5</sub> Al <sub>0.5</sub> Ge <sub>1.5</sub> (PO <sub>4</sub> ) <sub>3</sub> (LAGP) as solid state electrolytes for Li-ion battery
	12:00 – 12:20	<b>Tang Ya</b> University of Kyoto	On hydride diffusion in transition metal perovskite oxyhydrides investigated via deuterium exchange
		Lunch	
	13:20 – 14:30	<b>Poster session II</b>	
Session VII	14:30 – 15:10	<b>Chris Bell</b> University of Bristol	Defects and magnetism in SrTiO <sub>3</sub> -based heterostructures
	15:10 – 15:40	<b>Daisuke Kan</b> Kyoto University	Functional properties emerged in atomically engineered transition metal oxides
	15:40 – 16:00	<b>Marian Blankenhorn</b> University of Stuttgart	Magnetic semimetallic state in pyrochlore ruthenate Cd <sub>2</sub> Ru <sub>2</sub> O <sub>7</sub>
	16:00 – 16:20	Coffee break	
Session VIII	16:20 – 16:50	<b>Alexandra Gibbs</b> ISIS, Rutherford Appleton Laboratory	New insights into transition metal oxides from high-resolution neutron diffraction
	16:50 – 17:20	<b>Sebastian Bette</b> MPI for Solid State Research	Synthesis and phase characterization of α/β-Ni(OH) <sub>2</sub> -like basic nickel chlorides
	17:20 – 17:40	<b>Fabio Denis Romero</b> University of Kyoto	Neutron powder diffraction study of successive charge transitions in Ca <sub>0.5</sub> Bi <sub>0.5</sub> FeO <sub>3</sub>
	17:40 – 18:00	<b>Graham McNally</b> University of Edinburgh	Powder neutron diffraction studies of new magnetic manganites
		Conference Dinner	 <b>SOPHIE's BRAUHAUS</b> Marienstr. 28, 70178 Stuttgart, +49 (0) 711 610962
		Discussion	

## Wednesday, August 9, 2017

Session IX	9:00 – 9:40	<b>Lilia Boeri</b> Sapienza, University of Rome	Discovering novel transition metal oxides ab-initio
	9:40 – 10:00	<b>Hajime Ishikawa</b> University of Stuttgart	Jahn-Teller transition of "nonmagnetic" Ta <sup>4+</sup> ions with 5d <sup>1</sup> electron in A <sub>2</sub> TaCl <sub>6</sub> (A = K, Rb, Cs)
	10:00 – 10:20	<b>Jacky Hong</b> University of Edinburgh	MFe <sub>3</sub> O <sub>5</sub> oxides
	10:20 – 10:40	Coffee break	
Session X	10:40 – 11:10	<b>John Paul Attfield</b> University of Edinburgh	Perspectives on orbital molecules
	11:10 – 11:40	<b>Tomohiro Takayama</b> MPI for Solid State Research	Spin liquid behavior in honeycomb-based oxides
	11:40 – 12:00	<b>Daigorou Hirai</b> The University of Tokyo	Possible quadrupolar order and anisotropic ferromagnetism in the 5d <sup>1</sup> double perovskite Ba <sub>2</sub> MgReO <sub>6</sub>
	12:00	Closing	
		Lunch	
		Discussion & Lab Tour	