

TRR 80 Summer School

Functionality of Correlated Materials

Program

Frauenchiemsee, Germany
September 3-7, 2012



Integrated Graduate School of the TRR 80
»From Electronic Correlations to Functionality«

Organizing Committee

Sarah Dunsiger, Technische Universität München

Hans-Albrecht Krug von Nidda, Universität Augsburg

Florian Loder, Universität Augsburg

Marc Wilde, Technische Universität München

This summer school is supported by the Deutsche Forschungsgemeinschaft (DFG) through TRR 80.

Program

Monday, September 3, 2012

10:00 – 12:00	Arrival	
12:00	Lunch	
13:30	Opening	
Afternoon Session		
14:00	U. Schwingenschlögl	First-Principles Description of Correlated Materials
15:20		<i>Discussion</i>
15:40 – 16:00	Coffee	
16:00	R. Claessen	Photoelectron Spectroscopy as a Probe for Electronic Correlations
17:20		<i>Discussion</i>
18:00	Dinner	

Tuesday, September 4, 2012

8:00 – 9:00 Breakfast		
Morning Session		
9:00	J. Majewski	Spintronics – Towards All Semiconductor Functionalities
10:20		<i>Discussion</i>
10:40 – 11:00 Coffee		
11:00	M. Birowska	Ab Initio Studies of Bulk Uniaxial Anisotropy in (Ga, Mn)As
11:15	K. Pradhan	Inducing Ferromagnetism in Antiferromagnetic Manganites
11:30	H. Ceeh	Temperature Dependent 2D-ACAR Measurements on Cr
12:00 Lunch		
Afternoon Session		
14:00	J. Hemberger	Multiferroics
15:20		<i>Discussion</i>
15:40 – 16:00 Coffee		
16:00	J.-M. Triscone	Novel Functionalities in Oxide Heterostructures
17:20		<i>Discussion</i>
18:00 Dinner		
19:00 – 21:00	Poster Session	

Wednesday, September 5, 2012

8:00 – 9:00	Breakfast	
Morning Session		
9:00	C. Grams	Investigation of Magnetic Monopoles in Spin-Ice with Dielectric Spectroscopy
9:15	E. Ruff	Relaxor Ferroelectricity in Pure and Doped Magnetite
9:30	S. Riegg	$S = 1$ Spin-Dimers in Pure and Substituted La_2RuO_5
9:45		<i>Group Photo</i>
10:00	Coffee	
10:00 – 12:00	<i>Posters / Discussions / Excursions</i>	
12:00	Lunch	
13:30 – 18:00	<i>Free for Excursions</i>	
18:00	Dinner	

Thursday, September 6, 2012

8:00 – 9:00 Breakfast		
Morning Session		
9:00	R. Allenspach	Magnetism on Small Scales
10:20		<i>Discussion</i>
10:40 – 11:00 Coffee		
11:00	V. Tinkl	Negative Electronic Compressibility at LaAlO ₃ /SrTiO ₃ Interfaces Explored with Kelvin-Probe Microscopy
11:15	N. Pavlenko	Magnetism at Oxygen-Reduced LAO/STO Interfaces
11:30	S. Meir / C. Stephanos	A Novel Concept for Thermoelectronic Energy Conversion (Part I & Part II)
12:00 Lunch		
Afternoon Session		
14:00	H.-B. Braun	Nanomagnetism and Topology
15:20		<i>Discussion</i>
15:40 – 16:00 Coffee		
16:00	B. Heinrich	Spin Accumulation and Spin Currents: New Functionality in Magnetic Nanostructures and Electronics
17:20		<i>Discussion</i>
18:00 Dinner		

Friday, September 7, 2012

8:00 – 9:00	Breakfast
Morning Session	
9:00	S. Paetel Applied Research at ZSW: CIGS Thin-Film Solar Cells
10:20	<i>Discussion</i>
10:40 – 11:00	Coffee
11:00 – 12:00	Summary
12:00	Lunch
13:30	Departure

List of Lectures

Speaker	Institute	Title
Allenspach, Rolf	IBM Research, Zürich Switzerland	Magnetism on Small Scales
Braun, Hans-Benjamin	University College Dublin Ireland	Nanomagnetism and Topology
Claessen, Ralph	Universität Würzburg Germany	Photoelectron Spectroscopy as a Probe for Electronic Correlations
Heinrich, Bret	Simon Fraser University Burnaby Canada	Spin Accumulation and Spin Currents: New Functionality in Magnetic Nanostructures and Electronics
Hemberger, Joachim	Universität zu Köln Germany	Multiferroics
Majewski, Jacek	University of Warsaw Poland	Spintronics – Towards All Semiconductor Functionalities
Paetel, Stefan	Zentrum für Sonnenenergie und Wasserstoffforschung Stuttgart Germany	Applied Research at ZSW: CIGS Thin-Film Solar Cells
Schwingschlögl, Udo	King Abdullah University of Science and Technology Saudi Arabia	First-Principles Description of Correlated Materials
Triscone, Jean-Marc	Université de Genève Switzerland	Novel Functionalities in Oxide Heterostructures

List of Contributed Talks

Speaker	Title
Birowska, Magdalena	Ab Initio Studies of Bulk Uniaxial Anisotropy in (Ga, Mn)As
Ceeh, Hubert	Temperature Dependent 2D-ACAR Measurements on Cr
Grams, Christoph	Investigation of Magnetic Monopoles in Spin-Ice with Dielectric Spectroscopy
Meir, Stefan Stephanos, Cyril	A Novel Concept for Thermoelectronic Energy Conversion (Part I & Part II)
Pavlenko, Natalia	Magnetism at Oxygen-Reduced LAO/STO Interfaces
Pradhan, Kalpataru	Inducing Ferromagnetism in Antiferromagnetic Manganites
Riegg, Stefan	$S = 1$ Spin-Dimers in Pure and Substituted La_2RuO_5
Ruff, Eugen	Relaxor Ferroelectricity in Pure and Doped Magnetite
Tinkl, Veronika	Negative Electronic Compressibility at $\text{LaAlO}_3/\text{SrTiO}_3$ Interfaces Explored with Kelvin-Probe Microscopy

List of Posters

No.	Title	Presenter
P1	Anisotropy of the Skyrmion Lattice in MnSi	Adams, Tim
P2	(111)-Oriented Nickelate-Based Superlattices	Catalano, Sara
P3	Uniaxial Pressure Studies of Helimagnetic Order and the Skyrmion-Lattice Phase in MnSi	Chacón, Alfonso
P4	Infrared and THz Time-Domain Spectroscopy on Multiferroic $\text{Eu}_{1-x}\text{Ho}_x\text{MnO}_3$	Chen, Zhenyu
P5	Ferromagnetic Resonance on Multiferroics	Ehlers, Dieter
P6	Single Crystal Properties of CeTAl_3 (T = Cu, Ag, Au)	Franz, Christian
P7	Orbital-Selective Mott Transition from a Two-Particle Perspective	Greger, Markus
P8	Chiral Magnetization Profiles in Magnetic Nanostructures	Grisewood, Naoise
P9	Giant Generic Topological Hall Resistivity in MnSi under Pressure	Halder, Marco
P10	Integrated Circuits Based on Oxide Interfaces	Jany, Rainer Richter, Christoph
P11	The Effect of Interface Geometry on the I - V Curve of EuO Spin-Filter Tunneling-Junction	Jutong, Nuttachai
P12	Characterization of the Atomic Interface in High-Quality $\text{Fe}_3\text{O}_4/\text{ZnO}$ Heterostructures	Kirilmaz, Ozan Zapf, Michael
P13	Experimental Evidence of s - and d -Wave Pairing Channels in Fe-Based Superconductors	Kretschmar, Florian
P14	Electronic Transport Properties of the $\text{La}_x\text{Sr}_{1-x}\text{Al}_x\text{Ti}_{1-x}\text{O}_3/\text{SrTiO}_3$ Interfaces	Li, Danfeng
P15	Testing the Practicability of Elliptic Neutron Focussing	Rahn, Marein
P16	Itinerant Antiferromagnetism in High-Quality Single Crystal CrB_2	Regnat, Alexander
P17	From Heavy Fermions to Colossal Dielectric Constants	Riegg, Stefan
P18	Transverse Susceptibility of MnSi	Rucker, Felix
P19	Magnetic Vortices in Quasi-2D Chromium Oxides	Schädler, Martina

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List of Posters, continued from previous page

No.	Title	Presenter
P20	Growth Pressure Control of Electronic Interface Properties in LAO/STO Heterostructures: New Insight from High-Energy Spectroscopy	Scheiderer, Philipp
P21	Neutron Depolarisation Measurements of the Kondo-Cluster-Glass $\text{CePd}_{1-x}\text{Rh}_x$	Schmakat, Philipp
P22	Optical Spectroscopy of the Triangular Lattice Antiferromagnets CuCrO_2 and $\alpha\text{-CaCr}_2\text{O}_4$	Schmidt, Michael
P23	Heavy Fermions and Quantum Criticality in $\text{LaCu}_3\text{Ru}_x\text{Ti}_{4-x}\text{O}_{12}$	Schmidt, Betina
P24	Superconductivity on the Honeycomb Lattice	Seiler, Patrick
P25	Dielectric Signature of Charge Order in Lanthanum Nickelates	Sippel, Pit
P26	Two-Stage Thermalization of Weakly Interacting Electrons	Stark, Michael
P27	Capacitive Effects and Negative Compressibility in Correlated Low-Density Electron Systems	Steffen, Kevin
P28	Long-Wavelength Helimagnetic Order and Skyrmion-Lattice Phase in Cu_2OSeO_3	Wagner, Michael
P29	2D-ACAR measurement on Fe_2TiSn	Weber, Josef A.
P30	In-Situ Neutron Reflectometry at REFSANS	Wiedemann, Birgit
P31	Magnonic Grating-Coupler Mode in CoFeB Antidot Lattices Embedded with Permalloy Nanodisks	Yu, Haiming