Thursday, 05.09.2013, HS 5

Time	ID	SOFT MATTER AND OTHER SYSTEMS I (SHARED WITH THE BIOPHYSICS SESSION) Chair: Georg Pabst, Uni Graz
13:30	121	Equilibrium and flow of cluster-forming complex fluids Christos N. Likos (i)
14:00	122	Optimized Fourier Monte Carlo Simulation of Solid and Hexatic Membranes Andreas Troester
14:15	123	Biomimetic folding particle chains Peter Oostrum
		Soft Matter and Other Systems II Chair: Oskar Paris, Uni Leoben
14:30	124	Small Angle Scattering Study of the self-assembly of an amphiphilic designer peptide from the mono- mer to a helical superstructure <i>Heinz Amenitsch</i>
14:45	125	Liquid Structure and the Noncoincidence Effect of Liquid Dimethyl Sulfoxide Revisited Maurizio Musso
15:00	126	Generation of multiply twinned Ag clusters (n<6000) in superfluid helium nanodroplets <i>Philipp Thaler</i>
15:15	127	The characterization of defects in silicon by Elec- tron Beam Induced Current (EBIC) measurements <i>Peter Hadley</i>
15:30		Coffee Break
		S емісондистовs Chair: Peter Hadley, TU Graz
16:00	131	Structural Investigation of Novel Semiconductor Systems by Transmission Electron Microscopy Heiko Groiss (i)
16:30	132	Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire Phani Peddibhotla
16:45	133	Structural and magnetic properties of ZnO with doping beyond the coalescence limit <i>Verena Ney</i>
17:00	134	μ-Raman investigation of heterogeneously strained Si nanostructures Martin Süess
17:15	135	Normally-off GaN MOSHEMTs with thin barrier on Si substrate Alexander Alexewicz
17:30	136	Spin dependent electron response functions Raphael Hobbiger
17:45	137	Creation and detection of entanglement in helical edge states using a single-electron source Patrick Hofer
18:00	138	Experimental observation of the even-denominator fractional quantum-Hall effect in suspended graphene bilayers DongKeun Ki
18:15	139	Magneto-optical spectroscopy of epitaxial graph- ene
10-00		Iris Crassee (talk given by Alexey Kuzmenko)
18:30		Postersession and Apero
20:00		Conterence Dinner

Friday, 06.09.2013, HS 5

Time	ID	CONDENSED MATTER COMPUTATIONAL AND THEORY Chair: Christian Rüegg, PSI Villigen & Uni Genf
13:30	141	Computer simulations of strongly correlated quan- tum matter Andreas Läuchli (i)
14:00	142	A variational cluster approach to strongly correlat- ed quantum systems out of equilibrium Martin Nuss
14:15	143	Exotic Bound States in Low Dimensions Jelena Klinovaja
14:45	144	Berry Phase Effect in Solids Gerhard Brunthaler
15:00	145	First-principle investigation of topological transition in α -Sn nanocrystals Sebastian Küfner
15:15	146	A modified Griffith model for explaining Liquid Met- al Embrittlement in the Fe/Zn system Klaus-Dieter Bauer
15:30		END

ID	KOND POSTER
151	Conduction and Valence Band States of Sb-Mediated Ge Quantum Dots in n-type Si Studied by Deep Level Transient Spectroscopy Victor Tapio Rangel Kuoppa
152	Ultra-small-angle polarised neutron scattering on magnetic structures Erwin Jericha
153	Low temperature magnetic structure of multiferroic YBaCuFeO ₅ <i>Mickael Morin</i>
154	Dynamic stabilization of nonequilibrium domain configura- tions in magnetic squares with high amplitude excitations <i>Stephanie Stevenson</i>
155	Parametric polariton scattering in coupled planar micro- cavities Patrick Mai
156	Magnetism on the route of compensated to remnant mag- netism: SQUID- and Raman-data on NiO-nanoparticles Julia Weber
157	Skyrmion Dynamics in Perpendicular Magnetic Anisotropy Nanostructures Christoforos Moutafis
158	Neutron diffraction study of lattice damage induced by tri- tium decay in palladium tritide Gerhard Krexner
159	Effects of Geometrical Confinement on Li and Na in Nano- porous Glasses Gerhard Krexner
160	SiGe self-assembled nanostructures: from surface science to quantum transport Georgios Katsaros
161	Enhanced 1.54 µm-Er ³⁺ photoluminescence through con- tact coupling with Ge nanostructures <i>J. Martín-Sánchez</i>
162	Refinement of the eutectoid region of the Fe-Ru phase dia- gram using thermodynamic and metallurgical approaches Gabriela Schimo
163	Conducting Cellulose Fiber Networks as Flexible Substrate for Optoelectronic Applications Bettina Friedel

15:00	145	First-principle investigation of topological transition in a-Sn nanocrystals
		Sebastian Küfner, Lars Matthes, Jürgen Furthmüller, Friedhelm Bechstedt FSU Jena, Max-Wien Platz 1, DE-07743 Jena
		We use density-functional theory within local XC-functionals to show that the level-ordering of s- and p-like states at Gamma in \$\alpha\$-Sn nanocrystals is inverted with respect to the bulk. Showing that the fundamental energy gap decreases for increased nanodot-diameter, we conclude the occurrence of a topological transition for a certain diameter where the level odering changes. As an important ingredient spin-orbit interaction is taken into account. In addition, we prove that our results concerning the fundamental energy gaps of the nanocrystals argee perfectly with results obtained by methods considering many-body effects and screened coulomb-interaction.
15:15	146	A modified Griffith model for explaining Liquid Metal Embrittlement in the Fe/Zn system
		Klaus-Dieter Bauer ¹ , Mira Todorova ² , Jörg Neugebauer ² , Kurt Hingerl ¹ ¹ Zentrum für Oberflächen- und Nanoanalytik, Johannes Kepler Universität Linz, Altenberger Str. 69, AT-4040 Linz ² Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Strasse 1, DE-40237 Düsseldorf
		In the manufacturing of high quality steel products processing time and cost can be reduced by hot-forming previously coated steel sheets. For galvanized steel sheets, however, a degredation of workpiece quality is observed caused by Liquid Metal Embrittlement (LME) in the presence of liquid zinc. We performed density functional theory simulations of [111] Σ 3 and [110] Σ 5 tilt grain boundaries of bcc iron (ferrite) and applied the adapted Griffith model described by Nicholas and Old (1979). This predicted spontanous failure in the absence of strain, contradicting experimental findings at voestalpine AG. A modification of the model allowed us to bridge the gap between theory and experiment.
15:30		END

ID	KOND POSTER
151	Conduction and Valence Band States of Sb-Mediated Ge Quantum Dots in n-type Si Studied by Deep Level Transient Spectroscopy
	Victor Tapio Rangel Kuoppa ¹ , Alexander Tonkikh ² , Peter Werner ² , Wolfgang Jantsch ¹ ¹ Inst. of Semicond. Solid State Physics, Johannes Kepler Univ., Altenbergerstr. 69, AT-4040 Linz ² Max Planck Institute of Microstructure Physics, Weinberg 2, DE-06120 Halle
	Deep level transient spectroscopy technique is used on a Ti Schottky diode on n-type silicon with embedded Sb-mediated Ge quantum dots (QDs). We discovered an electron trap and two hole traps within the Si band gap at the plane of Ge QDs. An electron trap has activation energy of 87±7 meV. One hole trap has activation energy of 304±32 meV, while the second hole trap is represented by the energy sub-band between 125 and 250 meV above the top of the Si valence band. The electron level (87±7 meV) and the hole energy sub-band (125-250 meV) are identified as energetic states of Ge QDs array. The deepest trap level for holes (304 meV) has not been identified yet.
152	Ultra-small-angle polarised neutron scattering on magnetic structures
	Erwin Jericha, Christoph Gösselsberger, Wielfried Mach, Tobias Rechberger, Alexander Zdarzil, Gerald Badurek, TU Wien, Atominstitut, Stadionallee 2, AT-1020 Wien
	Ultra-small-angle scattering of polarised neutrons (USANSPOL) allows for the study of magnetic microstruc- ture. The technique takes advantage from the narrow angular width of the Bragg reflection by perfect crys- tals, and polarisation of the neutron beam is obtained by magnetic pris Scattering of spin-up and spin-down neutrons is recorded in a single measurement and identified by an angular shift of their respective scattering curves. We present new results on magnetic ribbons which are illustrative examples for developing the US- ANSPOL technique. These measurements allow an assessment of the evolution of magnetic structure under the influence of external magnetic fields and mechanical stress.