

## PhD Theses at IFF

### 2023

#### **Matthias Gillig**

Thermische Transportuntersuchungen an niederdimensionalen und frustrierten Quantenmagneten

#### **Lukas Graf**

Optical anisotropy and exciton dispersion in organic single crystals covering different exciton coupling mechanisms

### 2022

#### **Teresa Tschirner**

Transport phenomena in antiferromagnetic thin films

#### **Johannes Schlutz**

Towards Plasmon-Band Engineering in Ordered Plasmonic Nanostructures

#### **Robert Kuhrt**

Charge Transfer in Organic Semiconductor Systems Probed by Photoemission Spectroscopy

#### **Yaofeng Wang**

Synthesis and isolation of metallofullerene-based single-molecule magnets

#### **Felix Lucas Kern**

Miniaturized Electron Optics based on Self-Assembled Micro Coils

#### **Arthur Veyrat**

Superconductivity and topology in trigonal-PtBi<sub>2</sub>

#### **Christoph Wellm**

New Phenomena in Magnetically Frustrated Electron Systems Probed by Electron Spin Resonance Spectroscopy

### 2021

#### **Francesco Scaravaggi**

Electronic correlations and nematicity in 122 and 1111 Fe-based superconductors

#### **Vasilii Dubrovin**

Effects of non-covalent interactions on electronic structure and anisotropy in Ln-based SMMs: theoretical studies

#### **Georgios Velkos**

Magnetic studies on lanthanide-based endohedral metallofullerenes

#### **Piotr Lepucki**

Development of self-assembled, rolled-up microcoils for nuclear magnetic resonance spectroscopy

**Aoyu Tan**

Magneto-transport Properties of Antiferromagnetic Topological Insulators  $\text{MnBi}_2\text{Te}_4$  and  $\text{MnBi}_4\text{Te}_7$

**Valentin Labracherie**

Electrical transport in nanostructures of the Weyl semimetal  $\text{WTe}_2$

**Sebastian Schimmel**

Aufbau und Performance eines 30mK-Rastertunnelmikroskops und Untersuchungen zum Einzelmolekülmagnet  $\text{Dy}_2\text{ScN}@C_{80}$  auf Substratoberflächen

**Sebastian Selter**

Crystal Growth, Structure and Anisotropic Magnetic Properties of Quasi-2D Materials

**Gizem Aslan-Cansever**

Effect of Impurities, Off-Stoichiometry and Site-Disorder on Structural and Magnetic Properties of Transition Metal Oxides Induced by Different Synthesis Conditions

**2020****Christoph Wuttke**

Thermoelektrische Transportuntersuchungen an topologischen und korrelierten Elektronensystemen

**Jose Maria Guevara Parra**

Spectroscopic imaging of novel correlated electronic phases

**Martin Grönke (BTU Cottbus-Senftenberg)**

Synthesis and characterization of layered transition metal trihalides  $M\text{Cl}_3$  ( $M = \text{Ru}, \text{Mo}, \text{Ti}, \text{Cr}$ ) and  $\text{CrX}_3$  ( $X = \text{Cl}, \text{Br}, \text{I}$ ).

**Carsten Habenicht**

Spectroscopic investigation of excitons and doping-induced semiconductor-to-metal transitions in transition metal dichalcogenides

**Lukas Spree (TU Freiberg)**

Synthesis, Isolation, Characterization, and Surface Deposition of Endohedral Fullerenes with Single-Electron Lanthanide-Lanthanide Bonds

**Michael Vogl**

Magnetic exchange interactions in  $\text{Ir}^{4+}$ -based double perovskites

**Julian Zeisner**

ESR-Spektroskopie an niedrigdimensionalen und magnetisch frustrierten Elektronensystemen

**2019****Yevhen Kushnirenko**

Details of 3D electronic structure of some Fe-based superconductors and their superconducting order parameters

**Margarita Iakovleva**

Magnetic Resonance Spectroscopy on Low-dimensional and Frustrated Magnets

**Florian Kiebert**

Flüssigkeits- und Partikelmanipulation in mikrofluidischen Oberflächenwellen-Systemen

**Eric Haubold**

Electronic structure of topological semimetals

**Victoria Eckert**

Wachstumsmechanismen und Oberflächeneigenschaften undotierter und N-dotierter Kohlenstoffnanoröhren

**Rasha Ghunaim**

Development of Intermetallic Filled Carbon Nanotube Sensors for Hyperthermia Applications

**Maik Scholz**

Chemische und thermische Modifizierung von Garnen aus Kohlenstoffnanoröhren

**2018****Christin Schlesier**

Synthese und magnetische Eigenschaften von Dysprosium-Nitrid-Clusterfullerenen

**Ariane Brandenburg**

Synthese und Derivatisierung endohedraler Clusterfullerene

**Denis Krylov**

Magnetic studies of endohedral fullerenes

**Eric Müller**

Electron energy-loss spectroscopy on transition-metal dichalcogenides and  $\alpha$ - $\text{RuCl}_3$

**Rhea Kappenberger**

Das System  $\text{LaFeAsO}$  in Poly- und Einkristallen

**Robert Fuge**

Strukturelle und mechanische Eigenschaften von Kohlenstoffnanoröhren

**2017****Stephan Fuchs**

Elektronenspinresonanz an Iridaten in Doppelperowskitstrukturen

**Pranab Kumar Nag**

Unusual electronic properties in  $\text{LiFeAs}$  probed by low temperature scanning tunneling microscopy and spectroscopy

**Uwe Gräfe**

Investigation of the Superconducting and Magnetic Phase Diagram of Off-Stoichiometric  $\text{LiFeAs}$

**Florian Ruckerl**

Photoemission Spectroscopy at Organic Semiconductor Systems

**Nataliya Samoylova**

Cluster-based redox activity in Endohedral Metallofullerenes: Electrochemical and EPR studies

**Katrin Junghans**

Clusterfullerensynthese mit Methan

**Marcel Haft**

Synthese intermetallischer Nanostrukturen in Kohlenstoffnanoröhren

**Yannic Utz**

The Effect of In-Chain Impurities on 1D Antiferromagnets - An NMR Study on Doped Cuprate Spin Chains

**2016****Christian Nowka**

Untersuchungen zu Gasphasentransporten in quasibinären Systemen von  $\text{Bi}_2\text{Se}_3$  mit  $\text{Bi}_2\text{Te}_3$ ,  $\text{Sb}_2\text{Se}_3$ ,  $\text{MnSe}$  und  $\text{FeSe}$  zur Erzeugung von Nanokristallen

**Stephan Zimmermann**

Elektronenspinresonanz an niederdimensionalen und frustrierten magnetischen Systemen

**Frederik Klein**

Graphitisierung von tetraedischem amorphem Kohlenstoff mittels Elektronen im Rastertunnel und Rasterelektronenmikroskop

**Christian David Salazar Enriques**

Scanning tunneling microscopy on low dimensional systems: dinickel molecular complexes and iron nanostructures

**Nadine Heming**

Untersuchung der Volumen- und Oberflächeneigenschaften von Hexaboriden

**Julia Körner**

Gekoppelte Oszillatoren als neuartige Sensoren für Cantilever-Magnetometrien

**Louis Veyrat**

Quantum Transport Study of Spin-Helical Dirac Fermions in 3D Topological Insulator Nanostructures

**Christopher Reiche**

Novel sensors for scanning force microscopy based on carbon nanotube mechanical resonators

**Alexander Fedorov**

Electronic structure of doped 2D materials

**Markus Gellesch**

Statistical study of the effect of annealing treatments on assemblies of intermetallic magnetic nanoparticles related to the Heusler compound  $\text{Co}_2\text{FeGa}$

**Ahmad Omar**

Disentangling the Intrinsic Attributes and the Physical Properties in Cobalt-based Quaternary Heusler Compounds

**Wolf Schottenhamel**

Aufbau eines hochauflösenden Dilatometers und einer hydrostatischen SQUID-Druckzelle sowie Untersuchungen an korrelierten Übergangsmetalloxiden

**Steven Rodan**

Nuclear magnetic resonance and specific heat studies of half-metallic ferromagnetic Heusler compounds

**Azar Aliabadi**

ESR and Magnetization Studies of Transition Metal Molecular Compounds

**2015****Frank Steckel**

Thermische und elektrische Transportuntersuchungen an niederdimensionalen korrelierten Elektronensystemen

**Janek Maletz**

Low-energy electronic structure of iron chalcogenide superconductors

**Tobias Ritschel**

Electronic self-organization in layered transition metal dichalcogenides

**Martha Scheffler**

Microscopic tunneling experiments on atomic impurities in graphene and on magnetic thin films

**Rafael Gregorio Mendes**

Synthesis, characterization and toxicological evaluation of carbon-based nanostructures

**Uwe Treske**

Valence changes at interfaces and surfaces investigated by X-ray spectroscopy

**Sami Makharza**

Graphene Oxide Nanohybrids as Platforms for Carboplatin Loading and Delivery

**Benjamin Mahns**

Elektronische Eigenschaften dotierter polyzyklischer aromatischer Kohlenwasserstoffe

**2014****Dirk Bombor**

Transportmessungen an supraleitenden Eisenpniktiden und Heusler-Verbindungen

**Maria Dimitrakopoulou**

Investigations of Si-based and Heusler nanostructures

**Abdelwahab Hassan**

Electrical properties of different kinds of multi-walled carbon nanotubes, carbon nanofibers and nanocomposites materials

**Susi Lindner**

Charge transfer at phthalocyanine interfaces

**Ashwin Mohan**

Low-Dimensional Quantum Magnets: Single Crystal Growth and Heat Transport Studies

**Sven Partzsch**

Magnetoelectric Coupling Mechanisms in  $\text{YMn}_{2-x}\text{FeO}_5$  and  $\text{NdFe}_3(\text{BO}_3)_4$  Revealed by Resonant X-ray

**Markus Schäpers**

Exploring the Frustrated Spin-Chain Compound Linarite by NMR and Thermodynamic Investigations

**Ronny Schlegel**

Untersuchung der elektronischen Oberflächeneigenschaften des stöchiometrischen Supraleiters  $\text{LiFeAs}$  mittels Rastertunnelmikroskopie und -spetrokopie

**Jan Trinckauf**

An ARPES study of correlated electron materials on the verge of cooperative order

**Raghunandan Ummethala**

Growth and field emission characteristics of MWCNT's on different substrates

**2013****Andreas König**

Charge-Density Waves and Collective Dynamics in the Transition-Metal Dichalcogenides: An Electron Energy-Loss Study

**Oleg Mityashin**

Magnetic heat transport in low-dimensional quantum spin systems

**Giacomo Prando**

Phase Diagrams of  $\text{REFeAsO}_{1-x}\text{F}_x$  Materials

**Christian Rudisch**

Nuclear Magnetic Resonance on Selected Lithium Based Compounds

**Anna Svitova**

Mixed-Metal Clusterfullerenes: New Structures and New Challenges

**Uhland Weißker**

Synthesis and mechanical properties of iron-filled carbon nanotubes

**Yang Zhang**

Metal Nitride Cluster as a Template to Tune the Electronic and Magnetic Properties of Rare-Earth Metal Containing Endohedral Fullerenes