

Dr Leander Schulz

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Education and Professional Background:

Research Fellow - The University of Texas at Austin, USA (Aug. 2011 - Nov. 2013)
Postdoctoral Research - University of Fribourg, Switzerland (Jan. - June 2011)
PhD Physics - University of Fribourg, Switzerland (Apr. 2007 - Dec. 2010)
MSc Physics - Technical University Munich, Germany (Oct. 2000 - Dec. 2006)

Awards and Funding:

- 260k RMB, National Science Foundation of China (Jan. 2015 - Dec. 2017)
- 500k RMB, Funding by Sichuan University (Nov. 2013 - Oct. 2016)
- 70k USD, Swiss National Science Foundation (Aug. 2011 - Jan. 2013)
- Swiss Physical Society Award in Condensed Matter (July 2011)

Research Interests:

- Organic spintronics device and behaviour of the spin degree of freedom in organic materials
- Growth and employment of organic single crystals
- Magnetic properties of small molecular magnets
- Study and application of colloidal quantum dots

Collaborations:

- Prof A. Drew, QMUL, UK
- Prof J. Xue, Shanghai Tech, China
- Prof C. Bernhard, University of Fribourg, Switzerland
- Prof. S. Gao and Bin Wu, Peking University, China

And many scientists at Sichuan University

Publications:

L. Schulz et al. "Effects of contact resistance on the evaluation of charge carrier mobilities and transport parameters in amorphous zinc tin oxidethin-film transistors", *Appl. Phys. A* **115**, 1103 (2014).

L. Nuccio, L. Schulz and A. J. Drew, "Muon spin spectroscopy: magnetism, soft matter and the bridge between the two", *Topical Review - J. Phys. D: Appl. Phys.* **47**, 473001 (2014).

L. Nuccio, M. Willis, L. Schulz, S. Fratini, F. Messina, M. D'Amico, F. L. Pratt, J. S. Lord, I. McKenzie, M. Loth, B. Purushothaman, J. Anthony, M. Heeney, R. M. Wilson, I. Hernández, M. Cannas, K. Sedlak, T. Kreouzis, W. P. Gillin, C. Bernhard, and A. J. Drew, Importance of spin-orbit interaction for the electron spin relaxation in organic semiconductors, *Phys. Rev. Lett.* **110**, 216602 (2013)

L. Schulz et al., "Engineering spin propagation across a hybrid organic-inorganic interface with a polar layer", *Nature Materials* **10**, 39-44 (2011). C. Bernhard et al., "Muon spin rotation study of magnetism and superconductivity in Ba(Fe_{1-x}Co_x)₂As₂ single crystals", *Physical Review B* **86**, 184509 (2012).

L. Schulz et al., "Importance of intramolecular electron spin relaxation in small molecule semiconductors", *Physical Review B* **84**, 085209 (2011). L. Nuccio et al., "Electron spin relaxation in organic semiconductors probed through μ SR", *Journal of Physics: Conference Series* **292**, 012004 (2011).

L. Schulz et al., "Elastic torsion effects in magnetic nanoparticle diblock-copolymer structures", *Journal of Physics: Condensed Matter* **22**, 346008 (2010).

P. Marsik et al., "Coexistence and competition of magnetism and superconductivity on the nanometer scale in underdoped BaFe_{1.89}Co_{0.11}As₂", *Physics Review Letters* **105**, 057001 (2010).

A. Suchanek et al., "Incommensurate magnetic order and dynamics induced by spinless impurities in YBa₂Cu₃O_{6.6}", *Physics Review Letters* **105**, 037207 (2010).

A. Dubroka et al., "Dynamical response and confinement of the electrons at the LaAlO₃/SrTiO₃ interface", *Physics Review Letters* **104**, 036401 (2010).

S. V. Roth et al., "Spatially resolved investigation of solution cast colloidal films by x-ray scattering and multidimensional data set classification", *Langmuir* **26**, 1496 (2010).

A. J. Drew et al., "Direct depth-resolved measurement of the spin polarisation of electrons injected into the transport layer of an organic spin valve", *Nature Materials* **8**, 109 (2009).

J. T. Park et al., "Electronic Phase Separation in the Slightly Underdoped Iron Pnictide Superconductor Ba_{1-x}K_xFe₂As₂", *Physics Review Letters* **102**, 117006 (2009).

P. Müller-Buschbaum et al., "Interface-Induced Morphology Transition in Triblock Copolymer Films Swollen with Low-Molecular-Weight Homopolymer", *Langmuir* **25**, 4235 (2009).

- J. Perlich et al., "Solvent Content in Thin Spin-Coated Polystyrene Homopolymer Films", *Macromolecules* **42**, 337 (2009).
- C. Bernhard et al., "Muon spin rotation study of magnetism and superconductivity in $\text{BaFe}_{2-x}\text{Co}_x\text{As}_2$ and $\text{Pr}_{1-x}\text{Sr}_x\text{FeAsO}$ ", *New Journal of Physics* **11**, 055050 (2009).
- M. M. Abul Kashem et al., "Correlated Roughness in Polymer Films Containing Maghemite Nanoparticles", *Macromolecules* **41**, 2186 (2008).
- P. Müller-Buschbaum et al., "Lateral structures of buried interfaces in ABA-type tri-block copolymer films", *Langmuir* **24**, 7639 (2008).
- A. J. Drew et al., "Intrinsic Mobility Limit for Anisotropic Electron Transport in Alq_3 ", *Physics Review Letters* **100**, 116601 (2008).
- M. M. Abul Kashem et al., "Maghemite Nanoparticles on Supported Diblock Copolymer Nanostructures", *Macromolecules* **40** (14), 5075-5083 (2007).
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- J. Perlich et al., "Modification of the morphology of P(S-b-EO) templated thin TiO_2 films by swelling with PS homopolymer", *Langmuir* **23**, 10299 (2007).
- P. Müller-Buschbaum et al., "Combinatorial investigation of nanostructures formed in a titanium dioxide based nanocomposite film on top of fluor-doped tin oxide layers", *Physica Status Solidi (RRL)* **1**, 119121 (2007).