

DR. MICHAEL CHRISTIAN SLOTA

Professional Experience

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| 04/2018 – present | Postdoctoral researcher at the Department of Materials, University of Oxford <ul style="list-style-type: none">• Analysed spin physics in novel nanomaterials• Data science on spin phenomena at the nanometre scale |
| 02/2014 – 03/2018 | Postgraduate researcher at the 1. Physikalisches Institut, University of Stuttgart, Germany, and later at the Department of Materials, University of Oxford <ul style="list-style-type: none">• Characterised electronic and magnetic properties of molecules• Planned and set up a new lab• Person in charge of magnetometry lab |
| 02/2014 – 06/2015 | Management of financial activities at the 1. Physikalisches Institut, University of Stuttgart, Germany <ul style="list-style-type: none">• Accounted expenses of projects and took administrated tasks relating to Prof. Bogani's ERC project |
| 05/2011 – 10/2012 | Research assistant at the 2. and 5. Physikalisches Institut, University of Stuttgart, Germany <ul style="list-style-type: none">• Characterised a novel setup for creation of microfluidic flows• Assembly of electronic components |

Research Interests

My main field of interests lies in the investigation of electronic, magnetic and spectroscopic properties of materials to develop new systems with great applicable potential. In my research projects I would like to create new knowledge in the scope of materials for molecular spintronics on the nanometre scale.

Teaching Experience

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| 11/2023 – now | Planned and conducted courses on 'Magnetic and Superconducting Materials' (Options Paper 1) for 3rd year undergraduates and 'Electrical Properties of Materials' (General Paper 2) for 2nd year undergraduates |
| 01/2022 – now | Tutor at the Materials Department for <ul style="list-style-type: none">• Magnetic and Superconducting Materials• Magnetic Properties of Materials• Materials for Optics and Optoelectronics |
| 10/2020 – now | Co-supervision of 3 DPhil students and a Part II student |
| 02/2014 – 02/2015 | Co-supervision of a Master's project in Physics <ul style="list-style-type: none">• Co-Supervised a student (doing his one-year research project) in planning, performing measurements, data analysis and modelling |

10/2009 – 02/2015

Tutor in Physics

- Led study groups, where exercises relevant for courses were discussed, and assessed final written exams
- Organised and tutored optional study groups for first-year students
- Planned and supervised a three-week research project

11/2007 – 06/2009

Tutor in Maths

Education

07/2015 – 01/2018

Postgraduate studies at the Department of Materials, University of Oxford

DPhil thesis title: Manipulating the coupling between electronic and spin degrees of freedom in molecules. Viva in 05/2018.

02/2014 – 06/2015

Postgraduate studies at the 1. Physikalisches Institut, University of Stuttgart, Germany

Thesis title: Manipulating the coupling between electronic and spin degrees of freedom in molecules

10/2011 – 10/2013

Master of Science studies in Physics at the University of Stuttgart, Germany

Final mark: 1.0 ("excellent with distinction")

Thesis title: Magnetic anisotropy of lanthanide-based mononuclear molecular magnets

- Conducted Master's project on magnetic and spectroscopic properties of molecular magnets
- Advanced my Master's project after thesis: utilised further experimental techniques and wrote a data analysis programme

10/2008 – 10/2011

Bachelor of Science studies in Physics at the University of Stuttgart, Germany

Final mark: 1.3 ("excellent")

Thesis title: Separation of chiral particles in microfluidic flows

- Conducted Bachelor's project about lithography and analysis of microfluidic rotational flows

09/1999 – 06/2008

Abitur at Burg-Gymnasium Schorndorf, Germany.

Abitur (equivalent to A levels), final mark: 1.4

Focus subjects: German, English, Maths, Physics and Chemistry

Awards

10/2019 – 09/2023

Junior research fellowship at Kellogg College (now: RMCR)

10/2015 – 03/2018

German academic scholarship

DPhil scholarship from the German Academic Scholarship Foundation

09/2008 – 12/2013

e-fellows.net fellowship

German online-scholarship and career network

06/2008

Book Prize of the German Physical Society for excellent performance in Physics

06/2008

School Prize for excellent performance in Chemistry

Skills and Experience

Languages

German (*native speaker*), English (*fluent*), Polish (*basic*), French (*basic*)

IT

Python (*very good*), Wolfram Mathematica (*excellent*), LaTeX (*excellent*), Adobe Creative Suite (*very good*), MS-Office (*good*)

Administration

Administrative management of research projects

List of Publications (see asterisks for most significant contributions)

1. I. Pozo, Z. Huang, F. Lombardi, D. I. Alexandropoulos, F. Kong, **M. Slota**, I. Tkach, M. Bennati, J.-R. Deng, W. Stawski, P. N. Horton, S. J. Coles, W. K. Myers, L. Bogani, and H. L. Anderson: "Enhanced coherence by coupling spins through a delocalized π -system: Vanadyl porphyrin dimers", *Chem* **10**, 1–18 (2024)
2. *J. M. Van Raden, D. I. Alexandropoulos, **M. Slota (shared first-authorship)**, S. Sopp, T. Matsuno, A. L. Thompson, H. Isobe, H. L. Anderson, and L. Bogani: "Singly and Triply Linked Magnetic Porphyrin Lanthanide Arrays", *J. Am. Chem. Soc.* **144**, 19, 8693–8706 (2022)
3. **M. Slota**, and L. Bogani: "Combining Molecular Spintronics with Electron Paramagnetic Resonance: The Path Towards Single-Molecule Pulsed Spin Spectroscopy", *Appl. Magn. Res.* **51**, 1357–1409 (2020)
4. *F. Lombardi, A. Lodi, Ji Ma, J. Liu, **M. Slota**, A. Narita, W. K. Myers, K. Müllen, X. Feng, and L. Bogani: "Quantum units from the topological engineering of molecular graphenoids", *Science* **366**, 1107-1110 (2019)
5. ***M. Slota**, S.-D. Jiang, E. Heintze, Y. Rechkemmer, M. Dressel, J. van Slageren, and L. Bogani: "Accurate and unequivocal determination of the crystal-field parameters of lanthanide ions via a multitechnique approach", *Phys. Rev. B*, **99**, 134410 (2019)
6. ***M. Slota**, A. Keerthi, W. K. Myers, E. Tretyakov, M. Baumgarten, A. Ardavan, H. Sadeghi, C. J. Lambert, A. Narita, K. Müllen, and L. Bogani, "Magnetic edge states and coherent manipulation of graphene nanoribbons", *Nature* **557**, 691-695 (2018)
7. J. J. Le Roy, J. Cremers, I. Thomlinson, **M. Slota**, W. K. Myers, P. H. Horton, S. J. Coles, H. L. Anderson, and L. Bogani, "Tailored Homo- and Hetero- Lanthanide Porphyrin Dimers: a Synthetic Strategy for the Integration of Multiple Spintronic Functionalities into One Single Molecule", *Chem. Sci.* **9**, 8478-8481 (2018)
8. M. Blankenhorn, E. Heintze, **M. Slota**, J. van Slageren, B. A. Moores, C. L. Degen, L. Bogani, and M. Dressel, "Membrane-based torque magnetometer: Enhanced sensitivity by optical readout of the membrane displacement", *Rev. Sci. Instrum.* **88**, 0094707 (2017)
9. K. S. Lim, J. J. Baldoví, S.-D. Jiang, B. H. Koo, D. W. Kang, W. R. Lee, E. K. Koh, A. Gaita-Ariño, E. Coronado, **M. Slota**, L. Bogani, and C. S. Hong: "Custom Coordination Environments for Lanthanoids: Tripodal Ligands Achieve Near-Perfect Octahedral Coordination for Two Dysprosium-Based Molecular Nanomagnets", *Inorg. Chem.* **58**, 4911-4917 (2017)
10. N. Dotti, E. Heintze, **M. Slota**, R. Hübner, F. Wang, J. Nuss, M. Dressel, and L. Bogani: "Conduction mechanism of nitronyl-nitroxide molecular magnetic compounds", *Phys. Rev. B* **93**, 165201 (2016)
11. D. Schmid-Lorch, T. Häberle, F. Reinhard, A. Zappe, **M. Slota**, L. Bogani, A. Finkler, and J. Wrachtrup: "Relaxometry and Dephasing Imaging of Superparamagnetic Magnetite Nanoparticles Using a Single Qubit", *Nano Lett.* **15** (8), 4942-4947 (2015)
12. ***M. Slota**, M. Blankenhorn, E. Heintze, M. Vu, R. Hübner, and L. Bogani: "Photoswitchable stable charge-distributed states in a new cobalt complex exhibiting photo-induced valence tautomerism", *Faraday Discuss.* **185**, 347-359 (2015)
13. M. Chakif, O. Prymak, **M. Slota**, E. Heintze, E. L. Gurevich, C. Esen, and L. Bogani: "Impact of solvent mixture on iron nanoparticles generated by laser ablation", *Proc. SPIE* **8955**, 895507-9 (2014)
14. A. Baniodeh, Y. Liang, C. E. Anson, N. Magnani, A. K. Powell, A. Unterreiner, S. Seyffert, **M. Slota**, M. Dressel, L. Bogani, and K. Goß: "Unraveling the influence of Lanthanide Ions on Intra- and Inter-Molecular Electronic Processes in Fe₁₀Ln₁₀ Nano-Toruses", *Adv. Func. Mat.* **24**, 6279 (2014)

Attended Conferences

12/2025	Talk at MRS Fall Meeting 2025, Boston, US
06/2025	Talk at ECMoIS 2025, Dublin, Ireland
09/2024	Co-ordinated and presented at a conference at the Chemistry Department at Florence University, Italy
07/2022	Talk at RMC MR 2022, Denver, USA
04/2021	Talk at RSC ESR Meeting 2021, UK (online format)
03/2021	Talk at ACMM 2020, Japan (online format)
10/2019	Poster presentation at Graphene & Co 2019, Bad Herrenalb, Germany
10/2019	Poster presentation at PMMC 2019, Edinburgh, UK
07/2019	Talk at RMC MR 2019, Denver, USA
02/2019	Talk at AMN9, Wellington, New Zealand
10/2018	Poster presentation at ECMoIS 2018, Peniscola, Spain (Poster prize)
09/2018	Talk at ICMM 2018, Rio de Janeiro, Brazil
05/2018	Talk at ESMoNa 2018, Teneriffa, Spain
04/2018	Talk at RSC ESR Meeting 2018, London, UK
05/2017	Talk at ESMoNa 2017, El Escorial, Spain
04/2017	Poster presentation at RSC ESR Meeting 2017, Oxford, UK
11/2016	Poster presentation at ECMoIS 2016, Bologna, Italy
09/2016	Poster presentation at ICMM 2016, Sendai, Japan (Poster Prize)
04/2016	Poster presentation at RSC ESR Meeting, Colchester, UK
09/2015	Talk at Supramolecular Photochemistry 2015, Cambridge, UK
08/2015	Poster presentation at EFEPR Summer School 2015, Berlin, Germany
03/2015	Poster presentation at DFG Spring Meeting 2015, Berlin, Germany
07/2014	Poster presentation at Euromar 2014, Zurich, Switzerland
10/2013	Poster presentation at ECMM 2013, Karlsruhe, Germany

References

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Michael Slota