List of Publications of Dr. Rico Friedrich

Monograph:

R. Friedrich,

*Ab initio investigation of hybrid molecular-metallic interfaces as a tool to design surface magnetic properties for molecular spintronics,*

Publications in international peer-reviewed journals:

(a) Published/Accepted:

1. T. Barnowsky, A. V. Krasheninnikov, and R. Friedrich
   *A New Group of Two-Dimensional Non-van der Waals Materials with Ultra Low Exfoliation Energies,*

   *afflow++: a C++ framework for autonomous materials design,*
   Editor's choice paper Computational Materials Science, 217, 111889 (2023).

   *afflow.org: a web ecosystem of databases, software and tools,*
   Computational Materials Science 216, 111808 (2023).

   *Non-van der Waals quasi-2D materials; Recent Advances in Synthesis, Emergent Properties, and Applications,*

5. R. Friedrich, M. Ghorbani-Asl, S. Curtarolo, and A. V. Krasheninnikov,
   *Data-Driven Quest for Two-Dimensional Non-van der Waals Materials,*

6. M. J. Mehl, M. Ronquillo, D. Hicks, M. Esters, C. Oses, R. Friedrich, A. Smolyanyuk, E. Gossett, D. Finkenstadt, and S. Curtarolo,
   *Tin-pest problem as a test of density functionals using high-throughput calculations,*

   *Automated coordination corrected enthalpies with AFLOW-CCE,*

   *Coordination corrected ab initio formation enthalpies,*

   *Spinodal Superlattices of Topological Insulators,*

10. R. Friedrich, V. Caciuc, B. Zimmermann, G. Bihlmayer, N. Atodiresei, and S. Blügel,
    *Creating anisotropic spin-split surface states in momentum space by molecular adsorption,*
11. V. Heß, R. Friedrich, F. Matthes, V. Caciuc, N. Atodiresei, D. E. Bürgler, S. Blügel, and C. M. Schneider, 
*Magnetic subunits within a single molecule-surface hybrid*,

12. R. Friedrich, V. Caciuc, G. Blihmayer, N. Atodiresei, and S. Blügel, 
*Designing the Rashba spin texture by adsorption of inorganic molecules*,

*Quantum interference effects in molecular spin hybrids*,

14. R. Friedrich, V. Caciuc, N. Atodiresei, and S. Blügel,
*Exchange interactions of magnetic surfaces below two-dimensional materials*,

15. R. Friedrich, V. Caciuc, N. Atodiresei, and S. Blügel, 
*Molecular induced skyhook effect for magnetic interlayer softening*,

16. R. Friedrich, V. Caciuc, N. S. Kiselev, N. Atodiresei, and S. Blügel, 
*Chemically functionalized magnetic exchange interactions of hybrid organic-ferromagnetic metal interfaces*,

17. R. Friedrich, B. Kersting, and J. Kortus, 
*Fermi level engineering in organic semiconductors for controlled manufacturing of charge and spin transfer materials*,

18. R. Friedrich, S. Lindner, T. Hahn, C. Loose, S. Liebing, M. Knupfer, and J. Kortus, 
*Systematic theoretical investigation of the phthalocyanine based dimer: MnPc$^{+}$/F$_{16}$CoPc$^{-}$*,

19. S. Lindner, B. Mahns, A. König, F. Roth, M. Knupfer, R. Friedrich, T. Hahn, and J. Kortus, 
*Phthalocyanine dimers in a blend: Spectroscopic and theoretical studies of MnPc$^{+}$/F$_{16}$CoPc$^{-}$*,

20. S. Lindner, M. Knupfer, R. Friedrich, T. Hahn, and J. Kortus, 
*Hybrid States and Charge Transfer at a Phthalocyanine Heterojunction: MnPc$^{+}$/F$_{16}$CoPc$^{-}$*, 

*Electronic states and the influence of oxygen addition on the optical absorption behaviour of manganese phthalocyanine*,

22. M. Grobosch, B. Mahns, C. Loose, R. Friedrich, C. Schmidt, J. Kortus, and M. Knupfer, 
*Identification of the electronic states of manganese phthalocyanine close to the Fermi level*,

**Scientific presentations on YouTube:**

R. Friedrich, 
*AFLOW School@TU Dresden 2021 Session 5: Thermodynamic Stability of Ionic Materials (AFLOW-CCE)*, 
https://www.youtube.com/watch?v=Orenhnw_kNo

*AFLOW School@DCMS 2020 Session 4: AFLOW-CCE*, 
https://www.youtube.com/watch?v=05QhNhdbzAc

*AFLOW School@Texas A&M University 2020 Session 6: Thermodynamic stability (Part 2 - CCE)*, 
https://www.youtube.com/watch?v=A1tA_8Ng6u0
Invited Talks:

1. *Data-Driven Research for the Discovery of Novel Two-Dimensional and Ionic Materials*,
   Invited talk at BTU Cottbus-Senftenberg, Cottbus, Germany (2023)

2. *Data-Driven Research for the Discovery of Novel Two-Dimensional and Ionic Materials*,
   Topological Quantum Chemistry Retreat of the Max Planck Institute for Chemical Physics of Solids, Bad Schandau, Germany (2023)

3. *Data-Driven Research for the Discovery of Novel Two-Dimensional Materials*,
   Young Investigator Symposium of the Collaborative Research Center 1415 at TU Dresden, Dresden, Germany (2022)

4. *Data-Driven Design of Two-Dimensional Non-van der Waals Materials*,
   CECAM workshop Virtual Materials Design, Karlsruhe, Germany (2022)

5. *Data-Driven Design of Two-Dimensional Non-van der Waals Materials*,
   CASUSCON conference hosted by the University of Wroclaw, Wroclaw, Poland (2022)

6. *Data-Driven Design of Two-Dimensional Non-van der Waals Systems and Ionic Materials*,
   Theoretical Chemistry Seminar at TU Dresden, Dresden, Germany (2022)

7. *Autonomous Computational Materials Design*,
   Seminar at the Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany (2020)

   Online Summer School Materials 4.0 hosted by TU Dresden, Dresden, Germany (2020)

9. *Autonomous Materials Thermodynamics and Beyond*,
   Invited talk at TU Ilmenau, Ilmenau, Germany (2020)

10. *Computational Materials Science from Spintronics to Thermodynamics*,
    "nanoSeminar" at TU Dresden, Dresden, Germany (2019)

11. *Computational Materials Thermodynamics*,
    "Quantum Theory of Materials" seminar at Peter Grünberg Institut, Jülich, Germany (2018)

12. *Ab initio investigation of hybrid molecular-metallic interfaces as a tool to design surface magnetic properties for molecular spintronics*,
    Spring meeting of the German Physical Society, Dresden, Germany (2017)

13. *Tuning surface magnetic properties by molecular adsorption*,
    PoF-3 Scientific Exchange Meeting, Jülich, Germany (2016)

14. *Ab initio investigation of hybrid molecular-metallic interfaces as a tool to design surface magnetic properties for molecular spintronics*,
    Seminar at the Institute of Physics, Johannes Gutenberg-Universität, Mainz, Germany (2016)

15. *From spin transfer materials to Fermi level engineering in organic semiconductors*,
    Winterschool of the DFG Research Unit "Towards Molecular Spintronics", Zakopane, Poland (2013)