

Scanning Probe Methods Group, Prof. Dr. Roland Wiesendanger

Publications: Original Articles

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SP-STM study of the multi-Q phases in GdRu₂Si₂*J. Spethmann, N. D. Khanh, H. Yoshimochi, R. Takagi, S. Hayami, Y. Motome, R. Wiesendanger, S. Seki, and K. von Bergmann, Phys. Rev. Mater.* **8** 064404 (2024)**Experimental Realization of Monolayer alpha-Tellurene***X. Huang, R. Xiong, C. Hao, W. Li, B. Sa, J. Wiebe, and R. Wiesendanger, Advanced Materials* **36** 2309023 (2024)**Two-dimensional lateral heterojunction arrays with tailored interface band bending***X. Huang, R. Xiong, C. Hao, P. Beck, B. Sa, J. Wiebe, and R. Wiesendanger, Advanced Materials* **36** 2308007 (2024)**Phase Coexistence of Mn Trimer Clusters and Antiferromagnetic Mn Islands on Ir(111)***A. Rodríguez-Sota, V. Saxena, J. Spethmann, R. Wiesendanger, R. Lo Conte, A. Kubetzka, and K. von Bergmann, ACS Nano* **2024** **18** (4) 3699–3706 (2024)**Coupling of the triple-q state to the atomic lattice by anisotropic symmetric exchange***F. Nickel, A. Kubetzka, S. Haldar, R. Wiesendanger, S. Heinze, and K. von Bergmann, Phys. Rev. B* **108** L180411 (2023)**Large interlayer Dzyaloshinskii-Moriya interactions across Ag-layers***J. A. Arregi, P. Riego, A. Berger, and E. Y. Vedmedenko, Nature Communications* **14** 6927 (2023)**Observation and formation mechanism of 360° domain wall rings in synthetic anti-ferromagnets with interlayer chiral interactions***M. A. Cascales Sandoval, A. Hierro-Rodríguez, S. Ruiz-Gómez, L. Skoric, C. Donnelly, M. A. Niño, E. Y. Vedmedenko, D. McGrouther, S. McVitie, S. Flewett, N. Jaouen, M. Foerster, and A. Fernández-Pacheco, Appl. Phys. Lett.* **123** 172407 (2023)**Topological nodal point superconductivity in checkerboard magnet-superconductor hybrid systems***T. Kieu, E. Mascot, J. Bedow, R. Wiesendanger, and D. K. Morr, Phys. Rev. B* **108** L060509 (2023)**STM study of Nb(111) prepared by different methods***J. Goedecke, M. Bazarnik, and R. Wiesendanger, Phys. Rev. Materials* **7** 084803 (2023)**Proximity superconductivity in atom-by-atom crafted quantum dots***L. Schneider, K. That Ton, I. Ioannidis, J. Neuhaus-Steinmetz, Th. Posske, R. Wiesendanger, and J. Wiebe, Nature* **621** 60 (2023)**Probing the topologically trivial nature of end states in antiferromagnetic atomic chains on superconductors***L. Schneider, Ph. Beck, L. Rozsa, Th. Posske, J. Wiebe and R. Wiesendanger, Nature Commun.* **14** 2742 (2023)**Search for large topological gaps in atomic spin chains on proximitized superconducting heavy-metal layers***Ph. Beck, B. Nyári, L. Schneider, L. Rózsa, A. Lászlóffy, K. Palotás, L. Szunyogh, B. Ujfalussy, J. Wiebe, and R. Wiesendanger, Communications Physics* **6** 83 (2023)**Increased localization of Majorana modes in antiferromagnetic chains on superconductors***D. Crawford, E. Mascot, M. Shimizu, R. Wiesendanger, D. K. Morr, H. O. Jeschke, and S. Rachel, Phys. Rev. B* **107** 075410 (2023)**Antiferromagnetism-driven two-dimensional topological nodal-point superconductivity***M. Bazarnik, R. Lo Conte, E. Mascot, K. von Bergmann, D. K. Morr, and R. Wiesendanger, Nature Commun.* **14** 614 (2023)**Systematic study of Mn atoms, artificial dimers, and chains on superconducting Ta(110)***P. Beck, L. Schneider, R. Wiesendanger, and J. Wiebe, Phys. Rev. B* **107** 024426 (2023)**Majorana modes with side features in magnet-superconductor hybrid systems***D. Crawford, E. Mascot, M. Shimizu, L. Schneider, Ph. Beck, J. Wiebe, R. Wiesendanger, H. O. Jeschke, D. K. Morr, and S. Rachel, npj Quantum Materials* **7** 117 (2022)**Nano-scale collinear multi-Q states driven by higher-order interactions***M. Gutzeit, A. Kubetzka, S. Haldar, H. Pralow, M. A. Goerzen, R. Wiesendanger, S. Heinze, and K. von Bergmann, Nature Communications* **13** 5764 (2022)

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