

Publication Record

Preprints under review

73. R. C. Vidal, A. Zeugner, J. I. Facio, R. Ray, M. H. Haghighi, A. U. B. Wolter, L. T. Corredor Bohorquez, F. Cagliaris, S. Moser, T. Figgermeier, T. R. F. Peixoto, H. B. Vasili, M. Valvidares, S. Jung, C. Cacho, A. Alfonsov, K. Mehlawat, V. Kataev, Ch. Heß, M. Richter, B. Büchner, J. van den Brink, M. Ruck, F. Reinert, H. Bentmann, A. Isaeva. *Topological electronic structure and intrinsic magnetization in $MnBi_4Te_7$: a Bi_2Te_3 -derivative with a periodic Mn sublattice*. Under review in **Phys. Rev. X**. Arxiv.org: 1906.08394.
72. E. Haubold, A. Fedorov, I.P. Rusinov, T.V. Menshchikova, F. Pielnhofer, V. Duppel, D. Friedrich, R. Wehrich, A. Pfitzner, A. Zeugner, A. Isaeva, S. Thirupathiah, Y. Kushnirenko, E. Rienks, T. Kim, E.V. Chulkov, B. Büchner, S. Borisenko. *Possible experimental realization of a basic Z_2 topological metal in $GaGeTe$* . Under review in **APL Materials**. Arxiv.org: 1812.01668.
71. A. Koitzsch, E. Müller, M. Knupfer, B. Büchner, D. Nowak, A. Isaeva, Th. Doert, M. Grüninger, S. Nishimoto, J. van den Brink. *Low temperature enhancement of ferromagnetic Kitaev correlations in α - $RuCl_3$* . Under review in **Phys. Rev. Lett.** Arxiv.org: 1709.02712.
70. N. Avraham, A. Norris, Y. Sun, Y. Qi, L. Pan, A. Isaeva, A. Zeugner, C. Felser, B. Yan, H. Beidenkopf. *Coexisting surface states in the weak and crystalline topological insulator Bi_2Te_3* . Under review in **Nature Mater.** Arxiv.org: 1708.09062.

Accepted manuscripts

69. M. M. Otrokov, I. I. Klimovskikh, H. Bentmann, D. Estyunin, A. Zeugner, Z. S. Aliev, S. Gaß, A. U. B. Wolter, A. V. Koroleva, A. M. Shikin, M. Blanco-Rey, M. Hoffmann, I. Rusinov, A. Yu. Vyazovskaya, S. V. Eremeev, Yu. M. Koroteev, V. Kuznetsov, F. Freyse, J. Sanchez-Barriga, I. R. Amiraslanov, M. B. Babanly, N. T. Mamedov, N. A. Abdullayev, V. N. Zverev, A. Alfonsov, V. Kataev, B. Büchner, E. Schwier, S. Kumar, A. Kimura, L. Petaccia, G. Di Santo, R. C. Vidal, S. Schatz, K. Kißner, M. Ünzelmann, C.-H. Min, S. K. Moser, T. R. F. Peixoto, F. Reinert, A. Ernst, P. M. Echenique, A. Isaeva, E. V. Chulkov. *Prediction and observation of the first antiferromagnetic topological insulator*. Accepted to **Nature** (2019). arxiv.org: 1809.07389.

Published manuscripts

68. R. C. Vidal, H. Bentmann, T.R.F. Peixoto, A. Zeugner, S. Moser, C.H. Min, S. Schatz, K. Kißner, M. Ünzelmann, C. I. Fornari, H. B. Vasili, M. Valvidares, K. Sakamoto, J. Fujii, I. Vobornik, T. K. Kim, R. J. Koch, C. Jozwiak, A. Bostwick, J. D. Denlinger, E. Rotenberg, J. Buck, M. Hoesch, F. Diekmann, S. Rohlf, M. Kalläne, K. Rossnagel, M.M. Otrokov, E.V. Chulkov, M. Ruck, A. Isaeva, F. Reinert.

- Surface states and Rashba-type spin polarization in antiferromagnetic MnBi₂Te₄ (0001)*. **Phys. Rev. B.** 100 (2019), 121104(R).
67. D. Souchay, M. Nentwig, D. Günther, S. Keilholz, J. de Boor, A. Zeugner, A. Isaeva, M. Ruck, A.U.B. Wolter, B. Büchner, O. Oeckler. *Layered Manganese Bismuth Tellurides with GeBi₄Te₇- and GeBi₆Te₁₀-type Structures: Towards Multifunctional Materials*. **J. Mater. Chem. C** 7 (2019), 9939–9953.
66. T.V. Menshchikova, I.P. Rusinov, P. Golub, I.Yu. Sklyadneva, R. Heid, A. Isaeva, V.M. Kuznetsov, E.V. Chulkov. *Two- and one-dimensional quantum spin Hall states in stanene-functionalized GaTe and InTe matrices*. **J. Mater. Chem. C** 7 (2019), 7929–7937.
65. G. Bastien, M. Roslova, M. H. Haghghi, K. Mehlawat, J. Hunger, A. Isaeva, T. Doert, M. Vojta, B. Büchner, A. U. B. Wolter. *Spin-glass state and reversed magnetic anisotropy induced by Cr doping in the Kitaev magnet α -RuCl₃*. **Phys. Rev. B** 99 (2019), 214410.
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39. I.P. Rusinov, T.V. Menshchikova, A. Isaeva, S.V. Ereemeev, Yu. M. Koroteev, M. G. Vergniory, P. M. Echenique, E.V. Chulkov. *Mirror-symmetry protected non-TRIM surface state in the weak topological insulator Bi_2Te_3* . **Sci. Rep.** 6 (2016), 20734.
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Published Conference Proceedings

1. A. Isaeva, B. Rasche, M. Kaiser, M. Ruck, W. Van den Broek, C. T. Koch, U. Kaiser. *Real-structure effects in 3D weak topological insulators*. **Z. Anorg. Allg. Chem.** 640 (2014), 2380. Proceedings of the 17. Conference of the GDCh Division of Solid State Chemistry and Materials Research, 15–17 September 2014, Dresden, Germany.
2. A. Isaeva, M. Ruck. *State-of-the-Art and Perspectives of Bismuth-Based Topological Insulators*. **Z. Anorg. Allg. Chem.** 638 (2012), 1631. Proceedings of the 16. Conference of the GDCh Division of Solid State Chemistry and Materials Research, 17–19 September 2012, Darmstadt, Germany.
3. A. Isaeva, B. Rasche, M. Richter, M. Ruck. *Electronic Structure of Bi₁₄Rh₃I₉*. **Z. Anorg. Allg. Chem.** 638 (2012), 1597. Proceedings of the 16. Conference of the GDCh Division of Solid State Chemistry and Materials Research, 17–19 September 2012, Darmstadt, Germany.
4. K. Stolze, A. Isaeva, F. Nitsche, Th. Doert. *CuTe – A CDW Type Material*. **Z. Anorg. Allg. Chem.** 638 (2012), 1619. Proceedings of the 16. Conference of the GDCh Division of Solid State Chemistry and Materials Research, 17–19 September 2012, Darmstadt, Germany.

Selected Oral Presentations

35. A. Isaeva, A. Zeugner, J.I. Facio, A. Wolter, H. Bentmann. *A Family of Intrinsic Magnetic Topological Insulators $(\text{MnBi}_2\text{Te}_4)(\text{Bi}_2\text{Te}_3)_n$ ($n = 0, 1$)*. 2019 Conference on Magnetism and Magnetic Materials (MMM), Las Vegas, USA, 4–8 November 2019. (Invited Speaker).
34. M. Mehring, A. Isaeva. *Bismut – das neue Zukunftselement?* Dialog in Anorganischer Chemie. GDCh-Wissenschaftsforum 2019, Aachen, Germany, 16–18 September 2019.
33. A. Isaeva. *Layered $(\text{MnBi}_2\text{Te}_4)(\text{Bi}_2\text{Te}_3)_n$ ($n = 0, 1$) as intrinsically magnetic topological materials*. 17th European Conference on Solid State Chemistry ECSSC, Lille, France, 1–4 September, 2019.
32. A. Isaeva. *Synthesis and characterization of new magnetic van der Waals layered materials*. SFB 1170 Colloquium, August 2, 2019. (Invited talk by Prof. F. Reinert and Dr. H. Bentmann).
31. A. Isaeva. *New topological materials: Layered tellurohalides and tellurides*. SFB 1170 Colloquium, November 30, 2017. (Invited talk by Prof. F. Reinert and Dr. H. Bentmann).
30. A. Isaeva. *Growth of Bulk Inorganic Crystals: Theory, Tips and Cheats*. Summer school for PhD students of SFB 1143 “Frustration and topology”, Bastei, Germany, 18–19 September, 2017.
29. A. Isaeva et al. *Ionic-liquid-mediated synthesis and transport properties of the strong topological insulator $\beta\text{-Bi}_4\text{I}_4$* . 4th EuCheMS Inorganic Chemistry Conference EICC-4, Copenhagen, Denmark, 2–5 July 2017.
28. A. Isaeva. *Modular design of topological insulators*. Seminar of GRK 1621 “Itinerant magnetism and superconductivity in intermetallic compounds”. April 26, 2017.
27. A. Isaeva. *Der Druck steigt*. 52. Hemdsärmelkolloquium, Universität Augsburg, 16–18 March 2017.
26. A. Isaeva. *Growth of Bulk Inorganic Crystals: Theory, Tips and Cheats*. Summer school for PhD students in physics of IFW (Leibniz Institute for Solid State and Materials Research), Karpacz, Poland, August 31 – Sept 2, 2016.
25. A. Isaeva, B. Rasche, A. Zeugner, A. Weiz, M. Ruck. *Weak and strong TIs in the bismuth – halide systems*. Workshop in New Trends in Topological Insulators 2016, University of Würzburg, Würzburg, Germany, 24–29 July, 2016.
24. A. Isaeva, B. Rasche, A. Zeugner, A. Weiz, Th. Doert, M. Ruck. *New topological insulators in bismuth – halide systems*. International symposium on Structure-Property relationships in Solid State Materials (SPSSM), Nantes, France, 1–6 July 2016.
23. A. Isaeva, Th. Doert, J. Hunger, H. Hu, D. Nowak. *Chemical aspects of RuCl_3* . SFB 1143 2nd retreat meeting, Krippen, Germany, 1–2 June 2016.

22. A. Isaeva. *Crystal growth of new topological insulators in bismuth – halide and related systems*. 2nd Workshop on Floating Zone Technique, IFW Dresden, 4–6 April 2016. (Invited by Dr. S. Würmehl).
21. A. Isaeva. *Neue topologische Isolatoren aus chemischer Sicht*. Chemiedozententagung, Heidelberg, Germany, 21–23 March 2016.
20. A. Isaeva. *Wichtige Tanzschritte für topologischen Schutz*. 51. Hemdsärmelkolloquium, KIT, Karlsruhe, Germany, 17–19 March 2016.
19. A. Isaeva. *Topological Insulators: New Prospects in Spintronics*. Portland State University, Oregon, USA, February 4, 2016. (Invited by Prof. J. Freeouf).
18. A. Isaeva, B. Rasche. *Topological insulators in Bismuth-Halide and Related Systems. Design, Synthesis, Optimisation and Properties*. Group seminar at the Physics Department, RWTH, Aachen, Germany, 17–18 December 2015. (Invited talk by Prof. M. Morgenstern).
17. A. Isaeva, B. Rasche. *Topological insulators in Bismuth-Halide and Related Systems. Design, Synthesis, Optimisation and Properties*. Group seminar at the Physics Department, University of Würzburg, Würzburg, Germany, 18–19 November 2015. (Invited talk by Prof. E. Hankiewicz).
16. A. Isaeva. *Topological insulators in bismuth-halogen systems: synthesis and characterization*. Networking meeting of the Special Priority Program “Topological insulators” (DFG-SPP 1666), Bad Sooden – Allendorf, Germany, 14–16 September 2015.
15. A. Isaeva. *New topological insulators in bismuth–halogen systems: Synthesis and characterization*. 3rd German-Korean Workshop on Thermoelectrics, Radebeul, Germany, 3–4 July 2015 (Invited talk).
14. A. Isaeva. *Neues über Altes (New about Old)*. 50. Hemdsärmelkolloquium, Technical University of Munich, Garching, Germany, 26–28 February 2015.
13. A. Isaeva. *Bismut gewellt (Corrugated Bismuth)*. Hirschegg-Seminar, Hirschegg, Austria, 19–20 June 2014.
12. A. Isaeva, B. Rasche, M. Ruck, M. Richter, J. van den Brink, Ch. Pauly, M. Morgenstern. *Bi–Rh honeycomb fragments: a 2D topological insulator*. 19th International Conference on Solid Compounds of Transition Elements, Genova, Italy, 21–26 June 2014.
11. A. Isaeva. *On the Chemistry of Bismuth-based Layered Metal-Insulator Hybrids: Bismuth Iodides and Bismuth Telluroiodides*. Seminar of the physics department at École Polytechnique Fédérale de Lausanne (EPFL). Lausanne, Switzerland, 11 October 2013. <http://memento.epfl.ch/event/on-the-chemistry-of-bismuth-based-layered-metal-in/> (Invited talk by Prof. O. Yazyev)

10. A. Isaeva. *Bismuth-based candidates for topological insulators and materials with large Rashba splitting*. Group seminar in Donostia International Physics Center (DIPC), Donostia–San-Sebastian, Spain, 5–9 August 2013. (Invited talk by Prof. E. V. Chulkov)
9. A. Isaeva. *Bi₁₄Rh₃I₉: the first 3D weak topological insulator based on a decorated-honeycomb net*. 14th European Conference on Solid State Chemistry (ECSSC14), Bordeaux, France, 7–10 July 2013. (Invited talk)
8. A. Isaeva. *A 2D TI in various crystal-chemical surroundings: A study on the bismuth bilayer*. Workshop in New Trends in Topological Insulators, Sant Feliu de Guíxols, Spain, 3–6 June 2013. (Invited talk)
7. A. Isaeva. *Auswertung schwacher Wechselwirkungen in Festkörpern mittels quantenchemischer Methoden (Evaluation of weak interactions in bulk by means of quantum-chemistry techniques)*. Hirschegg-Seminar, Hirschegg, Austria, 7–10 June 2012.
6. A. Isaeva. *Electron Microscopy as a Tool for Structural Disorder Issue: A Case of Fe_{5-x}GeTe₂*. Hemdsärmenkolloquium, Dresden, Germany, 10–12 March 2011.
5. A. Isaeva. *Quantum Chemical Studies of Properties of Solids*. Group seminar in Dresden University of Technology. Dresden, Germany, 19 November 2010.
4. A. Isaeva. *Ordering patterns in the crystal structures of T – M chalcogenides (T = Ni, Co, Fe, Pd; M = Ga, In, Ge, Sn, Pb, As, Sb)*. Group meeting of physics department in EMAT, University of Antwerp. Antwerpen, Belgium, 26 February 2010.
3. A. Isaeva. *Ternary Pd-rich chalcogenides with heterometallic frameworks of varying dimensionality*. 9th Pd–Day. Vienna, Austria, 19–20 October 2009.
2. A. Isaeva. *Metal-rich ternary chalcogenides of transition (Ni, Fe, Pd) and main group metals containing 2D heterometallic fragments*. Seminar of physics department in EMAT, University of Antwerp. Antwerpen, Belgium, 20 March 2009.
1. A. Isaeva. *Low-valency mixed ternary chalcogenides of Ni – 14 and 15 group p-elements*. Group seminar of Prof. H.-J. Deiseroth’s research group in Siegen University, Siegen, Germany, 11 May 2007 (Invited talk).