

List of Publications

- [1] B. Rasche, “Can electrochemistry help to understand superconductivity – β -Fe_{1+x}Se as a case study”, *Current Opinion in Electrochemistry* **2020**, *25*, 100630, DOI 10.1016/j.coelec.2020.08.012.
- [2] Y. Chen, M. Yang, J. F. K. Cooper, S. J. Clarke, B. Rasche, R. G. Compton, “Designing Selective Electrode Materials for Electroanalysis – New Tungsten Bronzes as Selective Potassium Hosts”, *ChemElectroChem* **2020**, *7*, 3160–3167, DOI 10.1002/ce1c.202000851.
- [3] A. L. Suherman, M. Lin, B. Rasche, R. G. Compton, “Introducing “Insertive Stripping Voltammetry”: Electrochemical Determination of Sodium Ions Using an Iron(III) Phosphate-Modified Electrode”, *ACS Sens.* **2020**, *5*, 519–526, DOI 10.1021/acssensors.9b02343.
- [4] M. Yang, B. Rasche, R. G. Compton, “Acoustic cavitation generates molecular mercury(II) hydroxide, Hg(OH)₂, from biphasic water/mercury mixtures”, *Chem. Sci.* **2020**, *11*, Publisher: The Royal Society of Chemistry, 556–560, DOI 10.1039/C9SC04743C.
- [5] L. Chen, C. Batchelor-McAuley, B. Rasche, C. Johnston, N. Hindle, R. G. Compton, “Surface area measurements of graphene and graphene oxide samples: Dopamine adsorption as a complement or alternative to methylene blue?”, *Appl. Mat. Today* **2020**, *18*, 100506, DOI 10.1016/j.apmt.2019.100506.
- [6] B. Rasche, M. Yang, L. Nikonow, J. F. K. Cooper, C. A. Murray, S. J. Day, K. Kleiner, S. J. Clarke, R. G. Compton, “In-situ Electrochemical X-ray Diffraction: A Rigorous Method to Navigate within Phase Diagrams Reveals β -Fe_{1+x}Se as Superconductor for All x”, *Angew. Chem. Int. Ed.* **2019**, *58*, 15401–15406, DOI 10.1002/anie.201907426; *Angew. Chem.* **2019**, *131*, 15547–15552, DOI 10.1002/ange.201907426.
- [7] A. L. Suherman, B. Rasche, B. Godlewska, P. Nicholas, S. Herlihy, N. Caiger, P. J. Cowen, R. G. Compton, “Electrochemical Detection and Quantification of Lithium Ions in Authentic Human Saliva Using LiMn₂O₄-Modified Electrodes”, *ACS Sens.* **2019**, *4*, 2497–2506, DOI 10.1021/acssensors.9b01176.
- [8] B. Rasche, H. M. A. Amin, S. J. Clarke, R. G. Compton, “Polyselenides on the route to electrodeposited selenium”, *J. Electroanal. Chem.* **2019**, *835*, 239–247, DOI 10.1016/j.jelechem.2019.01.015.
- [9] K. Eckhardt, N. Pérez, B. Rasche, A. Zeugner, J. Grothe, T. Doert, K. Nielsch, S. Kaskel, “A photosensor based on lead-free perovskite-like methyl-ammonium bismuth iodide”, *Sens. Actuators A: Phys.* **2019**, *291*, 75–79, DOI 10.1016/j.sna.2019.03.031.
- [10] B. Rasche, M. Ruck, “High-Temperature-Phase Bi₄RhI₂: Electronic Localization by Structural Distortion”, *Inorg. Chem.* **2018**, *57*, 5507–5513, DOI 10.1021/acs.inorgchem.8b00464.

- [11] A. Weiz, L. Anh Mai, M. Kaiser, B. Rasche, T. Herrmannsdörfer, T. Doert, M. Ruck, “Optimized Synthesis of the Bismuth Subiodides Bi_mI_4 ($m = 4, 14, 16, 18$) and the Electronic Properties of Bi_{14}I_4 and Bi_{18}I_4 ”, *Eur. J. Inorg. Chem.* **2017**, 2017, 5609–5615, DOI 10.1002/ejic.201700999.
- [12] M. F. Groh, A. Wolff, B. Wahl, B. Rasche, P. Gebauer, M. Ruck, “Pentagonal Bismuth Antiprisms with Endohedral Palladium or Platinum Atoms by Low-Temperature Syntheses”, *Z. Anorg. Allg. Chem.* **2017**, 643, 69–80, DOI 10.1002/zaac.201600354.
- [13] B. Rasche, A. Isaeva, M. Ruck, K. Koepernik, M. Richter, J. van den Brink, “Correlation between topological band character and chemical bonding in a $\text{Bi}_{14}\text{Rh}_3\text{I}_9$ -based family of insulators”, *Sci. Rep.* **2016**, 6, 20645, DOI 10.1038/srep20645.
- [14] C. Pauly, B. Rasche, K. Koepernik, M. Richter, S. Borisenko, M. Liebmann, M. Ruck, J. van den Brink, M. Morgenstern, “Electronic Structure of the Dark Surface of the Weak Topological Insulator $\text{Bi}_{14}\text{Rh}_3\text{I}_9$ ”, *ACS Nano* **2016**, 10, 3995–4003, DOI 10.1021/acsnano.6b00841.
- [15] B. Rasche, W. Van den Broek, M. Ruck, “New Environment for a Two-Dimensional Topological Insulator with Hexagonal Channels Hosting Diiodido-bismuthate(I) Anions in a Singlet State”, *Chem. Mater.* **2016**, 28, 665–672, DOI 10.1021/acs.chemmater.5b04496.
- [16] C. Pauly, B. Rasche, K. Koepernik, M. Liebmann, M. Pratzner, M. Richter, J. Kellner, M. Eschbach, B. Kaufmann, L. Plucinski, C. M. Schneider, M. Ruck, J. van den Brink, M. Morgenstern, “Subnanometre-wide electron channels protected by topology”, *Nat. Phys.* **2015**, 11, 338–343, DOI 10.1038/nphys3264.
- [17] B. Rasche, W. Schnelle, M. Ruck, “The Bismuth Subiodides $\text{Bi}_8\text{Pt}_5\text{I}_3$ and $\text{Bi}_{16}\text{Pt}_{11}\text{I}_6$ – Layered Metals with Covalent Platinum Networks”, *Z. Anorg. Allg. Chem.* **2015**, 641, 1444–1452, DOI 10.1002/zaac.201500120.
- [18] K. Stolze, B. Rasche, M. Ruck, “Mixed-Valent Selenium Ligands in the Uncharged Iridium Complexes $[\text{Ir}_4\text{Se}_{10}\text{Br}_{16}]$ and $[\text{Ir}_6\text{Se}_8\text{Cl}_{30}]$ ”, *Eur. J. Inorg. Chem.* **2015**, 2015, 4343–4347, DOI 10.1002/ejic.201500659.
- [19] M. Heise, B. Rasche, A. Isaeva, A. I. Baranov, M. Ruck, K. Schäfer, R. Pöttgen, J.-P. Eufinger, J. Janek, “A Metallic Room-Temperature Oxide Ion Conductor”, *Angew. Chem. Int. Ed.* **2014**, 53, 7344–7348, DOI 10.1002/anie.201402244; *Angew. Chem.* **2014**, 126, 7472–7476, DOI 10.1002/ange.201402244.
- [20] M. Kaiser, B. Rasche, A. Isaeva, M. Ruck, “Low-Temperature Topochemical Transformation of $\text{Bi}_{13}\text{Pt}_3\text{I}_7$ into the New Layered Honeycomb Metal $\text{Bi}_{12}\text{Pt}_3\text{I}_5$ ”, *Chem. Eur. J.* **2014**, 20, 17152–17160, DOI 10.1002/chem.201404789.
- [21] M. Kaiser, B. Rasche, M. Ruck, “The Topochemical Pseudomorphosis of a Chloride into a Bismuthide”, *Angew. Chem. Int. Ed.* **2014**, 53, 3254–3258, DOI 10.1002/anie.201309460; *Angew. Chem.* **2014**, 126, 3319–3323, DOI 10.1002/ange.201309460.

- [22] B. Mendoza-Sánchez, B. Rasche, V. Nicolosi, P. S. Grant, “Scaleable ultra-thin and high power density graphene electrochemical capacitor electrodes manufactured by aqueous exfoliation and spray deposition”, *Carbon* **2013**, *52*, 337–346, DOI 10.1016/j.carbon.2012.09.035.
- [23] A. Isaeva, B. Rasche, M. Ruck, “Bismuth-based candidates for topological insulators: Chemistry beyond Bi_2Te_3 ”, *Phys. Stat. Sol. RRL* **2013**, *7*, 39–49, DOI 10.1002/pssr.201206405.
- [24] B. Rasche, A. Isaeva, A. Gerisch, M. Kaiser, W. Van den Broek, C. T. Koch, U. Kaiser, M. Ruck, “Crystal Growth and Real Structure Effects of the First Weak 3D Stacked Topological Insulator $\text{Bi}_{14}\text{Rh}_3\text{I}_9$ ”, *Chem. Mater.* **2013**, *25*, 2359–2364, DOI 10.1021/cm4010823.
- [25] B. Rasche, A. Isaeva, M. Ruck, S. Borisenko, V. Zabolotnyy, B. Büchner, K. Koepf, C. Ortix, M. Richter, J. van den Brink, “Stacked topological insulator built from bismuth-based graphene sheet analogues”, *Nat. Mater.* **2013**, *12*, 422–425, DOI 10.1038/nmat3570.
- [26] A. Isaeva, B. Rasche, M. Richter, M. Ruck, “Electronic Structure of $\text{Bi}_{14}\text{Rh}_3\text{I}_9$ ”, *Z. Anorg. Allg. Chem.* **2012**, *638*, 1597–1597, DOI 10.1002/zaac.201204061.
- [27] B. Rasche, A. Gerisch, M. Kaiser, M. Ruck, “The Layered Structure of $\text{Bi}_{14}\text{Rh}_3\text{I}_9$ ”, *Z. Anorg. Allg. Chem.* **2012**, *638*, 1597–1597, DOI 10.1002/zaac.201204062.
- [28] B. Rasche, G. Seifert, A. Enyashin, “Stability and Electronic Properties of Bismuth Nanotubes”, *J. Phys. Chem. C* **2010**, *114*, 22092–22097, DOI 10.1021/jp1081565.