

List of publications: Dr. Saskia Heumann

2020

- Lin, Y., Liu, Z., Yu, L., Zhang, G.-R., Tan, H., Wu, K.-H., Song, F., Mechler, A.K., Schleker, P.P.M., Lu, Q., Zhang, B., **Heumann, S.** (2020). Overall oxygen electrocatalysis on nitrogen-modified carbon catalysts: identification of active sites and in situ observation of reactive intermediates *Angewandte Chemie International Edition* <https://doi.org/10.1002/anie.202012615>
- Wu, K.-H., Zhang, Q., Lin, Y., Ali, M.A., Zhao, S., **Heumann, S.**, Centi, G. (2020). Real-time CO Detection using a Rotating Gold Ring Electrode: A Feasibility Study *ChemElectroChem* 7(21), 4417-4422. <https://doi.org/10.1002/celec.202001263>
- Ding, Y., Zhang, P., Xiong, H., Sun, X., Klyushin, A., Zhang, B., Liu, Z., Zhang, J., Zhu, H., Xiao, Z.-A., **Heumann, S.**, Dai, S. (2020). Tuning Regioselective Oxidation toward Phenol via Atomically Dispersed Iron Sites on Carbon *Green Chemistry* 22(18), 6026-6032. <https://doi.org/10.1039/D0GC01717E>
- Ding, Y., Greiner, M., Schlögl, R., **Heumann, S.** (2020). A Metal Free Electrode: From Biomass Derived Carbon to Hydrogen *ChemSusChem* 13(16), 4064-4068. <https://doi.org/10.1002/cssc.202000714>
- Park, H., Uluca-Yazgi, B., **Heumann, S.**, Schlögl, R., Granwehr, J., Heise, H., Schleker, P.P.M. (2020). Heteronuclear cross-relaxation effect modulated by the dynamics of N-functional groups in the solid state under ¹⁵N DP-MAS DNP *Journal of Magnetic Resonance* <https://doi.org/10.1016/j.jmr.2020.106688>
- Ding, Y., Gu, Q., Klyushin, A., Huang, X., Choudhury, S.H., Spanos, I., Song, F., Mom, R., Düngen, P., Mechler, A.K., Schlögl, R., **Heumann, S.** (2020). Dynamic carbon surface chemistry: revealing the role of carbon in electrolytic water oxidation *Journal of Energy Chemistry* 47, 155-159. <https://doi.org/10.1016/j.jechem.2019.12.006>

2019

- Kraus, P., Massué, C., **Heumann, S.**, Schlögl, R. (2019). Reliable long-term performance assessment of commercial photovoltaic modules tested under field conditions over 5 years *Journal of Renewable and Sustainable Energy* 11, 063501. <https://doi.org/10.1063/1.5128171>
- Lin, Y., Liu, Z., Niu, Y., Zhang, B., Lu, Q., Wu, S., Centi, G., Perathoner, S., **Heumann, S.**, Lu, Y., Su, D.S. (2019). Highly Efficient Metal-Free Nitrogen-Doped Nanocarbons with Unexpected Active Sites for Aerobic Catalytic Reactions *ACS Nano* <https://doi.org/10.1021/acsnano.9b05856>
- Park, H., Schleker, P.P.M., Liu, Z., Kowalew, N., Stamm, T., Schlögl, R., Eichel, R.-A., **Heumann, S.**, Granwehr, J. (2019). Insights on Water Interaction at the Interface of Nitrogen Functionalized Hydrothermal Carbons *The Journal of Physical Chemistry C* 123(41), 25146-25156. <https://doi.org/10.1021/acs.jpcc.9b05323>
- Ding, Y., Schlögl, R., **Heumann, S.** (2019). The role of supported atomically distributed metal species in electrochemistry and how to create them *ChemElectroChem* 6(15), 3860-3877. <https://doi.org/10.1002/celec.201900598>
- Lin, Y., Lu, Q., Song, F., Yu, L., Mechler, A.K., Schlögl, R., **Heumann, S.** (2019). Oxygen Evolution Reaction at Carbon Edge Sites: Activity Evolution and Structure-Function Relationships Clarified by Polycyclic Aromatic Hydrocarbons *Angewandte Chemie International Edition* 58(26), 8917-8921. <https://doi.org/10.1002/anie.201902884>

- Gu, Q., Ding, Y., Liu, Z., Lin, Y., Schlögl, R., **Heumann, S.**, Su, D. (2019). Probing the intrinsic catalytic activity of carbon nanotubes for the metal-free oxidation of aromatic thiophene compounds in ionic liquids *Journal of Energy Chemistry* 32, 131-137. <https://doi.org/10.1016/j.jechem.2018.07.004>

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- Rodenas, T., Beeg, S., Spanos, I., Neugebauer, S., Girgsdies, F., Algara-Siller, G., Schleker, P.P.M., Jakes, P., Pfänder, N., Willinger, M., Greiner, M., Prieto, G., Schlögl, R., **Heumann, S.** (2018). 2D Metal Organic Framework-Graphitic Carbon Nanocomposites as Precursors for High-Performance O₂-Evolution Electrocatalysts *Advanced Energy Materials* 8(35), 1802404. <https://doi.org/10.1002/aenm.201802404>
- Lin, Y., Wu, K.-H., Lu, Q., Gu, Q., Zhang, L., Zhang, B., Sheng Su, D., Plodinec, M., Schlögl, R., **Heumann, S.** (2018). Electrocatalytic Water Oxidation at Quinone-on-Carbon: A Model System Study *Journal of the American Chemical Society* 140(44), 14717-14724. <https://doi.org/10.1021/jacs.8b07627>
- Dungen, P., Greiner, M., Böhm, K.H., Spanos, I., Huang, X., Auer, A.A., Schlögl, R., **Heumann, S.** (2018). Atomically dispersed vanadium oxides on multiwalled carbon nanotubes via atomic layer deposition: A multiparameter optimization *Journal of Vacuum Science & Technology A* 36(1), 01A126. <https://doi.org/10.1116/1.5006783>
- Ding, Y., Klyushin, A., Huang, X., Jones, T., Teschner, D., Girgsdies, F., Rodenas, T., Schlögl, R., **Heumann, S.** (2018). Cobalt Bridged with Ionic Liquid Polymer on Carbon Nanotube for Enhanced Oxygen Evolution Reaction Activity *Angewandte Chemie International Edition* 57(13), 3514-3518. <https://doi.org/10.1002/anie.201711688>
- Dungen, P., Schlögl, R., **Heumann, S.** (2018). Non-linear thermogravimetric mass spectrometry of carbon materials providing direct speciation separation of oxygen functional groups *Carbon* 130, 614-622. <https://doi.org/10.1016/j.carbon.2018.01.047>
- Straten, J.W., Schlecker, P., Krasowska, M., Veroutis, E., Granwehr, J., Auer, A.A., Hateba, W., Becker, S., Schlögl, R., **Heumann, S.** (2018). N-Functionalized Hydrothermal Carbon Materials using Urotropine as N-Precursor *Chemistry - A European Journal* 24(47), 12298-12317. <https://doi.org/10.1002/chem.201800341>

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- Gu, Q.Q., Lin, Y.M., **Heumann, S.**, Su, D.S. (2017). Nanocarbons for Catalytic Desulfurization *Chemistry - An Asian Journal* 12(22), 2876-2883. <https://doi.org/10.1002/asia.201700995>
- Yi, Y.M., Weinberg, G., Prenzel, M., Greiner, M., **Heumann, S.**, Becker, S., Schlögl, R. (2017). Electrochemical corrosion of a glassy carbon electrode *Catalysis Today* 295, 32-40. <https://doi.org/10.1016/j.cattod.2017.07.013>
- Lin, Y.M., Wu, K.H., Yu, L.H., **Heumann, S.**, Su, D.S. (2017). Efficient and Highly Selective Solvent-Free Oxidation of Primary Alcohols to Aldehydes Using Bucky Nanodiamond *ChemSusChem* 10(17), 3497-3505. <https://doi.org/10.1002/cssc.201700968>
- Dungen, P., Prenzel, M., Van Stappen, C., Pfänder, N., **Heumann, S.**, Schlögl, R. (2017). Investigation of Different Pre-Treated Multi-Walled Carbon Nanotubes by Raman Spectroscopy *Materials Sciences and Applications* 8, 628-641 <https://doi.org/10.4236/msa.2017.88044>

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- **Buller, S.**, Strunk, J. (2016). Nanostructure in energy conversion *Journal of Energy Chemistry* 25(2), 171-190. <https://doi.org/10.1016/j.jechem.2016.01.025>
- **Buller, S.**, Heise-Podleska, M., Pfänder, N., Willinger, M., Schlögl, R. (2016). Carbon nanotubes as conducting support for potential Mn-oxide electrocatalysts: Influences of pre-treatment procedures *Journal of Energy Chemistry* 25(2), 265-271. <https://doi.org/10.1016/j.jechem.2016.01.022>

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- Winkler, M., Liu, X., König, J.D., **Buller, S.**, Schürmann, U., Kienle, L., Bensch W., Böttner, H. (2012). Electrical and structural properties of Bi₂Te₃ and Sb₂Te₃ thin films grown by the nanoalloying method with different deposition patterns and compositions *Journal of Materials Chemistry* 22(22), 11323-11334. <https://doi.org/10.1039/c2jm30363a>
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