

List of publications: Dr. Alexis Bordet

2021

22. **Bordet, A.**, El Sayed, S., Sanger, M., Boniface, K. L., Kalsi, D., Luska, K. L., Jessop, P. G., Leitner, W. (2021). Selectivity control in hydrogenation through adaptive catalysis using ruthenium nanoparticles on a CO₂-responsive support. *Nature Chemistry*. <https://doi.org/10.1038/s41557-021-00735-w>
21. **Bordet, A.***, Leitner, W. (2021). Metal Nanoparticles Immobilized on Molecularly Modified Surfaces: Versatile Catalytic Systems for Controlled Hydrogenation and Hydrogenolysis. *Accounts of Chemical Research*. <https://doi.org/10.1021/acs.accounts.1c00013>
20. Rengshausen, S., Van Stappen, C., Levin, N., Tricard, S., Luska, K. L., DeBeer, S., Chaudret, B., **Bordet, A.***, Leitner, W. (2021). Organometallic Synthesis of Bimetallic Cobalt-Rhodium Nanoparticles in Supported Ionic Liquid Phases (Co_xRh_{100-x}@SILP) as Catalysts for the Selective Hydrogenation of Multifunctional Aromatic Substrates. *Small*, 2006683. <https://doi.org/10.1002/smll.202006683>

2020

19. Moos, G., Emondts, M., **Bordet, A.***, Leitner, W. (2020). Selective Hydrogenation and Hydrodeoxygenation of Aromatic Ketones to Cyclohexane Derivatives Using a Rh@SILP Catalyst. *Angewandte Chemie International Edition*. <https://doi.org/10.1002/anie.201916385>
18. **Bordet, A.**, Moos, G., Welsh, C., Licence, P., Luska, K. L., Leitner, W. (2020). Molecular Control of the Catalytic Properties of Rhodium Nanoparticles in Supported Ionic Liquid Phase (SILP) Systems. *ACS Catalysis* 10, 13904-13912. <https://dx.doi.org/10.1021/acscatal.0c03559>
17. Estes, D.P., Leutzsch, M., Schubert, L., **Bordet, A.**, Leitner, W. (2020). The Effect of Ligand Electronics on the Reversible Catalytic Hydrogenation of CO₂ to Formic Acid using Ruthenium Polyhydride Complexes: A Thermodynamic and Kinetic Study. *ACS Catalysis* 10, 2990-2998. <https://doi.org/10.1021/acscatal.0c00404>
16. El Sayed, S., **Bordet, A.**, Weidenthaler, C., Hetaba, W., Luska, K. L., Leitner, W. (2020). Selective Hydrogenation of Benzofurans Using Ruthenium Nanoparticles in Lewis Acid-Modified Ruthenium-Supported Ionic Liquid Phases. *ACS Catalysis* 10, 2124-2130. <https://dx.doi.org/10.1021/acscatal.9b05124>
15. Kaithal, A., Kalsi, D., Krishnakumar, V., Pattanaik, S., **Bordet, A.**, Leitner, W., Gunanathan, W. (2020) Ruthenium-Catalyzed Selective Hydroboronolysis of Ethers. *ACS Catalysis* 10, 14390-14397. <https://dx.doi.org/10.1021/acscatal.0c04269>

14. Goclik, L., Offner-Marko, L., **Bordet, A.***, Leitner, W. (2020) Selective Hydrodeoxygenation of Hydroxyacetophenones to Ethyl-Substituted Phenol Derivatives Using a FeRu@SILP Catalyst. *Chemical Communications*. <https://doi.org/10.1039/D0CC03695A>
13. Kacem, S., Emondts, M., **Bordet, A.***, Leitner, W. (2020) Selective hydrogenation of fluorinated arenes using rhodium nanoparticles on molecularly modified silica. *Catalysis Science & Technology*. <https://doi.org/10.1039/d0cy01716g>
12. Chatterjee, B., Kalsi, D., Kaithal, A., **Bordet, A.**, Leitner, W., Gunanathan, C. (2020). One-pot Dual Catalysis for the Hydrogenation of Heteroarenes and Arenes. *Catalysis Science & Technology*. <https://doi.org/10.1039/D0CY00928H>

2019

11. Strohmamm, M., **Bordet, A.**, Vorholt, A. J., Leitner, W. (2019). Tailor-Made Biofuel 2-butyltetrahydrofuran from the Continuous Flow Hydrogenation and Deoxygenation of Furfuralacetone. *Green Chemistry* 21, 6299. <https://doi.org/10.1039/c9gc02555c>
10. **Bordet, A.**, Landis, R., Lee, Y., Tonga, G., Asensio, J., Li, C., Fazzini, P.-F., Soulantica, K., Rotello, V., Chaudret, B. (2019). Water-Dispersible and Biocompatible Iron Carbide Nanoparticles with High Specific Absorption Rate. *ACS Nano* 13(3), 2870-2878. <https://doi.org/10.1021/acsnano.8b05671>
9. Kale, A. S., Asensio, J. M., Estrader, M., Werner, M., **Bordet, A.**, Yi, D., Marbaix, J., Fazzini, P.-F., Soulantica, K., Chaudret, B. (2019). Iron Carbide or Iron Carbide / Cobalt Nanoparticles for Magnetically-Induced CO₂ Hydrogenation over Ni/SiRAIOx Catalysts. *Catalysis Science and Technology* 9, 2601-2607. <http://doi.org/10.1039/C9CY00437H>
8. Rengshausen, S., Etscheidt, F., Großkurth, J., Luska, K.L., **Bordet, A.**, Leitner, W. (2019). Catalytic Hydrogenolysis of Substituted Diaryl Ethers by Using Ruthenium Nanoparticles on an Acidic Supported Ionic Liquid Phase (Ru@SILP-SO₃H) *Synlett* 30(04), 405-412. <https://doi.org/10.1055/s-0037-1611678>

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7. Offner-Marko, L., **Bordet, A.**, Moos, G., Tricard, S., Rengshausen, S., Chaudret, B., Luska, K.L., Leitner, W. (2018). Bimetallic Nanoparticles in Supported Ionic Liquid Phases as Multifunctional Catalysts for the Selective Hydrodeoxygenation of Aromatic Substrates. *Angewandte Chemie International Edition*, 57(39), 12721-12726. <https://doi.org/10.1002/anie.201806638>
6. **Bordet, A.**, Asensio, J.M., Soulantica, K., Chaudret, B. (2018). Enhancement of Carbon Oxides Hydrogenation on Iron-Based Nanoparticles by In-Situ Water

Removal. *ChemCatChem*, 10(18), 4047-4051.
<https://doi.org/10.1002/cctc.201800821>

5. Niether, C., Faure, S., **Bordet, A.**, Deseure, J., Chatenet, M., Carrey, J., Chaudret, B., Rouet, A. (2018). Improved Water Electrolysis Using Magnetic Heating of FeC–Ni Core–Shell Nanoparticles. *Nature Energy*, 3(6), 476-483.
<https://doi.org/10.1038/s41560-018-0132-1>

2017

4. **Bordet, A.**, Soulantica, K. Chaudret, B. (2017) Iron Carbide Nanoparticles, Method for Preparing Same and Use Thereof for Heat Generation. *Patent N°WO2017103492A2*.

2016

3. **Bordet, A.**, Lacroix, L.-M., Fazzini, P.-F., Carrey, J., Soulantica, K., Chaudret, B. (2016). Magnetically Induced Continuous CO₂ Hydrogenation Using Composite Iron Carbide Nanoparticles of Exceptionally High Heating Power. *Angewandte Chemie International Edition*, 55(51), 15894-15898.
<https://doi.org/10.1002/anie.201609477>
2. **Bordet, A.**, Lacroix, L.-M., K. Soulantica, K., Chaudret, B. (2016). A New Approach to the Mechanism of Fischer–Tropsch Syntheses Arising from Gas Phase NMR and Mass Spectrometry. *ChemCatChem*, 8(9), 1727-1731.
<https://doi.org/10.1002/cctc.201600245>
1. Luska, K. L., **Bordet, A.**, Tricard, S., Sinev, I., Grünert, W., Chaudret, B., Leitner W. (2016). Enhancing the Catalytic Properties of Ruthenium Nanoparticle-SILP Catalysts by Dilution with Iron. *ACS Catalysis*, 6(6), 3719-3726.
<https://doi.org/10.1021/acscatal.6b00796>