

List of Publications of PD Dr. Harun Tüysüz

Publications in Peer-Reviewed Journals:

- 1) Beyazay, T.; Ochoa-Hernández, C.; Song, Y.; Belthle, S. K.; Martin, F. W.; **Tüysüz, H.***. Influence of composition of nickel-iron nanoparticles for abiotic CO₂ fixation to early prebiotic organics, *Angew. Chem. Int. Ed.* **2023**, *in press*, e202218189
<https://doi.org/10.1002/anie.202218189>
- 2) Budiyanto, E.; Ochoa-Hernández, C.; **Tüysüz, H.*** Impact of alkaline treatment on mesostructured cobalt oxide for the oxygen evolution reaction, *Adv. Sustainable Syst.* **2023**, *in press*,
<https://doi.org/10.1002/adsu.202200499>
- 3) Wu, Z.; **Tüysüz, H.**; Besenbacher, F.; Dai, Y.*; Xiong, Y*. Recent developments in lead-free bismuth-based halide perovskite nanomaterials for heterogeneous photocatalysis under visible light, *Nanoscale* **2023**, 15, 5598
<https://doi.org/10.1039/D3NR00124E>
- 4) Beyazay, T.; Belthle, K.; Fares, C.; Preiner M.; Moran, J.; Martin, W*. F.; **Tüysüz, H.*** Stepwise ambient temperature conversion of CO₂ and H₂ to pyruvate and citramalate over iron and nickel nanoparticles, *Nat. Commun.* **2023**, 14, 570
<https://doi.org/10.1038/s41467-023-36088-w>
- 5) Belthle, K.; **Tüysüz, H.***; Linking catalysis in biochemical and geochemical CO₂ fixation at the emergence of life, *ChemCatChem* **2023**, e202201462 (invited concept article)
<https://doi.org/10.1002/cctc.202201462>
- 6) Falk, T.; Budiyanto, E.; Dreyer, M.; Büker, J.; Weidenthaler, C.; Behrens, M.; **Tüysüz, H.***; Muhler, M.; Peng, B*. Effect of transition metal substitution on the catalytic activity of mesostructured Co₃O₄ in the selective oxidation of 2-propanol, *ACS Appl. Nano Mater.* **2022**, 12, 17783
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- 7) Belthle, K.; Beyazay, T.; Ochoa-Hernández, C.; Miyazaki, R.; Martin, F. W.; **Tüysüz, H.*** Effect of silica modification (Mg, Al, Ca, Ti, and Zr) on supported cobalt catalysts for H₂ dependent CO₂ reduction to metabolic intermediates, *J. Am. Chem. Soc.* **2022**, 144, 21232
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- 8) Bowker, M.; DeBeer, S.; Dummer N. F.*; Hutchings, G. J.; Scheffler, M.; Schüth, F.; Taylor, S. H.; **Tüysüz, H.***, Advancing critical chemical processes for a sustainable future: Challenges for industry and the Max Planck-Cardiff Centre on the fundamentals of heterogeneous catalysis (FUNCAT), *Angew. Chem. Int. Ed.* **2022**, 134, e202209016
<https://doi.org/10.1002/anie.202209016>
- 9) Yu, M.; Weidenthaler, C.; Wang, Y.; Budiyanto, E.; Şahin E. O.; Chen, M.; DeBeer, S.; Ruediger, O.; **Tüysüz, H.*** Surface boron modulation on cobalt oxide nanocrystals for electrochemical oxygen evolution reaction, *Angew. Chem. Int. Ed.* **2022**, 61, e202211543
<https://doi.org/10.1002/anie.202211543>
- 10) Kumar, A.; Le, J., Kim, M. G.; Debnath, B., Liu, X.; Hwang, J.; Wang, Y.; Shao, X.; Liu, Y.; Yiu, Y.; Jadhav, A. R.; **Tüysüz, H.**; Lee, H.* Efficient nitrate-conversion-to-ammonia on f-block single-atom/metal-oxide heterostructure via local electron-deficiency modulation, *ACS Nano* **2022**, 16,15297
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- 11) Zerebecki, S.; Schott, K.; Salamon, S.; Landers, J.; Wende, H.; Budiyanto, E.; **Tüysüz, H.**; Reichenberger, S.*; Barcikowski, S. Gradually Fe-doped Co₃O₄ nanoparticles in 2-propanol and water oxidation catalysis with single laser pulse resolution, *J. Phys. Chem.* **2022**, 126, 15144
<https://doi.org/10.1021/acs.jpcc.2c01753>
- 12) Beneficial effects of low iron contents on cobalt-containing spinel catalysts in the gas phase 2-propanol oxidation, Dreyer, M.; Hagemann, U.; Heidelmann, M.; Budiyanto, E.; Cosanne, N.; Friedel Ortega K.; Najafshirtari, S.; Hartmann, N.; **Tüysüz, H.**; Malte Behrens, M.* *ChemCatChem* **2022**, e202200472
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- 13) Budiyanto, E.; **Tüysüz, H.***. Cobalt oxide nanowires with controllable diameter and crystal structures for the oxygen evolution reaction, *Eur. J. Inorg. Chem.* **2022**, 18, e202200065 (*Invited article for EurJIC Talents, highlighted as very important paper and cover of the journal*)
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- 17) Henriques Pereira, D.; Leethaus, J.; Beyazay, T.; Nascimento Vieira, A.; Kleinermanns, K.; **Tüysüz, H.**; Martin, F. W.; Preiner, M*. Specific abiotic hydride transfer by metals to the biological redox cofactor NAD⁺, *FEBS J.* **2022**, 289, 3148
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- 28) Wang, Y.; Dai, Y.; **Tüysüz, H.*** Preparation and properties of polystyrene nanospheres incorporated Cs₃Bi₂Br₉ halide perovskite disks, *Eur. J. Inorg. Chem.* **2021**, 2021, 2712
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- 34) Yu, M.; Gun-hee Moon, G-H.; Castillo, R. G.; DeBeer, S.; Weidenthaler, C.; **Tüysüz, H.***. Dual role of silver moieties coupled with ordered mesoporous cobalt oxide towards electrocatalytic oxygen evolution reaction, *Angew. Chem. Int. Ed.* **2020**, *59*, 16544
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