

List of Publications, PD Dr. Harun Tüysüz

- 1) Chen, K.; Deng, X.; Dodekatos, G.; Tüysüz, H. Photocatalytic polymerization of 3,4-ethylenedioxythiophene over cesium lead iodide perovskite quantum dots, *J. Am. Chem. Soc.*, **2017**, *in press*, DOI: 10.1021/jacs.7b06413.

<http://pubs.acs.org/doi/abs/10.1021/jacs.7b06413>

- 2) Deng, X.; Rin, R.; Tseng, J-C.; Weidenthaler, C.; Apfel, U-F.; Tüysüz, H. Monodispersed mesoporous silica spheres supported Co_3O_4 as robust catalyst for oxygen evolution reaction, *ChemCatChem*, **2017**, *in press*, DOI: 10.1002/cctc.201701001.

<http://onlinelibrary.wiley.com/doi/10.1002/cctc.201701001/full>

- 3) Deng, X.; Öztürk, S.; Weidenthaler, Tüysüz, H. Iron-induced activation of ordered mesoporous nickel cobalt oxide electrocatalyst for the oxygen evolution reaction, *ACS. App. Mater. Interfaces*. **2017**, 9, 21225.

<http://pubs.acs.org/doi/abs/10.1021/acسامی.7b02571>

- 4) Zywitzki, D.; Jing, H.; Tüysüz, H.; Chan, K. C. High surface area, amorphous titania with reactive Ti^{3+} through photo-assisted synthesis method for photocatalytic H_2 generation, *J. Mater. Chem. A*, **2017**, 5, 10957.

<http://pubs.rsc.org/en/content/articlehtml/2017/ta/c7ta01614j>

- 5) Chen, K.; Schünemann, S.; Tüysüz, H. Preparation of water-proof hybrid organometal halide perovskite photonic crystal beads, *Angew. Chem. Int. Ed.* **2017**, 129, 6648.

<http://onlinelibrary.wiley.com/doi/10.1002/ange.201702556/abstract>

- 6) Spanos, I.; Auer, A. A.; Neugebauer, S.; Deng, X.; Tüysüz, H.; Schlögl, R. Standardized benchmarking of water splitting catalysts in a combined electrochemical flow cell/ICP-OES setup, *ACS Catalysis*, **2017**, 7, 3768.

<http://pubs.acs.org/doi/abs/10.1021/acscatal.7b00632>

- 7) Dodekatos, G.; Tüysüz, H. Effect of post-treatment on structure and catalytic activity of CuCo-based materials for glycerol oxidation, *ChemCatChem*, **2017**, 9, 610.

<http://onlinelibrary.wiley.com/doi/10.1002/cctc.201601219/full>

- 8) Deng, X.; Chen, K.; Tüysüz, H. A Protocol for the nanocasting method: Preparation of ordered mesoporous metal oxides, *Chem. Mater.* **2017**, 29, 40.

<http://pubs.acs.org/doi/abs/10.1021/acs.chemmater.6b02645>

9) Deng, X.; Chan, C.; Tüysüz, H. Spent tea leaf templating of cobalt-based mixed oxide nanocrystals for water oxidation, *ACS. App. Mater. Interfaces*, **2016**, 8, 32488

<http://pubs.acs.org/articlesonrequest/AOR-gE3qn5sM7Z7DUZUIP3Tr>

10) Prieto, G.; Tüysüz, H.; Knossalla, J.; Duyckaerts, N.; Wang, G.; Schüth, F. Hollow nano- and micro-structures as catalysts, *Chem. Review*, **2016**, 116, 14056.

<http://pubs.acs.org/doi/abs/10.1021/acs.chemrev.6b00374>

11) Schünemann, S.; Chen, K.; Brittman, S.; Garnett, E.; Tüysüz, H. Preparation of organometal halide perovskite photonic crystal films for potential optoelectronic applications, *ACS. App. Mater. Interfaces*, **2016**, 8, 25489.

<http://pubs.acs.org/doi/abs/10.1021/acsami.6b09227>

12) Dodekatos, G.; Tüysüz, H. Au-TiO₂ nanostructure for visible light driven glycerol oxidation, *Catal. Sci. Tech*, **2016**, 6, 7307.

<http://pubs.rsc.org/en/content/articlehtml/2016/cy/c6cy01192f>

13) Wang, G.; Deng, X.; Gu, D.; Chen, K.; Tüysüz, H.; Spliethoff, B.; Bongard, H. J.; Weidenthaler, C.; Schmidt, W.; Schüth, F. Co₃O₄ nanoparticles supported on mesoporous carbon for selective transfer hydrogenation of α, β-unsaturated aldehydes, *Angew. Chem. Int. Ed.* **2016**, 128, 11267.

<http://onlinelibrary.wiley.com/doi/10.1002/ange.201604673/full>

14) Bharathi, K.; Puring, K.; Sinev, I.; Piontek, S.; Khavryuchenko, O.; Dürholt, J. P.; Schmid, R.; Tüysüz, H.; Muhler, M.; Schuhmann, W.; Apfel, U. P. Pentlandite rocks as sustainable and storable efficient electrocatalysts for hydrogen generation, *Nat. Commun.* **2016**, 7, 12269.

<http://www.nature.com/articles/ncomms12269>

15) Chen, K.; Deng, X.; Goddard, R.; Tüysüz, H. Pseudomorphic transformation of organometal halide perovskite using the gaseous hydrogen halide reaction, *Chem.Mater*, **2016**, 28, 5530.

<http://pubs.acs.org/doi/abs/10.1021/acs.chemmater.6b02233>

16) Grewe, T.; Tüysüz, H. Activated carbon templated crystalline tantalates for photocatalytic hydrogen production, *ChemNanoMat*, **2016**, 2, 273.

<http://onlinelibrary.wiley.com/doi/10.1002/cnma.201600033/pdf>

17) Deng, X.; Bongard, H.; Chan, C.; Tüysüz, H. Dual templated cobalt oxide for photochemical water oxidation, *ChemSusChem*, **2016**, 9, 409.

<http://onlinelibrary.wiley.com/doi/10.1002/cssc.201500872/full>

18) Grewe, T.; Tüysüz, H. Alkali metals incorporated ordered mesoporous tantalum oxide with enhanced photocatalytic activity for water splitting, *J. Mater. Chem. A*, **2016**, 4, 3007.

<http://pubs.rsc.org/en/content/articlehtml/2015/ta/c5ta07086d>

- 19)** Grewe, T.; Yang, T.; Tüysüz, H.; Chan, C. Hyperbranched potassium lanthanum titanate perovskite photocatalysts for hydrogen generation, *J. Mater. Chem. A*, **2016**, 4, 2837.
<http://pubs.rsc.org/en/content/articlehtml/2016/ta/c5ta07424j>
- 20)** Grewe, T.; Meggouh, M.; Tüysüz, H. Nanocatalysts for solar water splitting and a perspective on hydrogen economy, *Chem. Asian J.*, **2016**, 11, 22.
<http://onlinelibrary.wiley.com/doi/10.1002/asia.201500723/full>
- 21)** Dodekatos, G.; Schünemann, S.; Tüysüz, H. Surface plasmon assisted solar energy conversion, *Top. Curr. Chem.*, **2016**, 371, 215.
http://link.springer.com/chapter/10.1007/128_2015_642
- 22)** Chen, K.; Tüysüz, H. Morphology-controlled synthesis of organometal halide perovskite inverse opals, *Angew. Chem. Int. Ed.* **2015**, 54, 13806.
<http://onlinelibrary.wiley.com/doi/10.1002/anie.201506367/full>
- 23)** Schünemann, S.; Dodekatos, G.; Tüysüz, H. Mesoporous silica supported Au and AuCu nanoparticles for surface plasmon driven glycerol oxidation, *Chem. Mater.* **2015**, 27, 7743.
<http://pubs.acs.org/doi/abs/10.1021/acs.chemmater.5b03520>
- 24)** Chan, C.; Tüysüz, H.; Braun, A.; Ranjan,C.; La Mantia F.; Miller, B.; Zhang, L.; Crozier, P.; Haber, J.; Gregoire, J.; Park,S.; Batchellor, A.; Trotochaud, L.; Boettcher, S. Advanced and *In Situ* Analytical Methods for Solar Fuel Materials, *Top. Curr. Chem.*, **2016**, 371, 253.
http://link.springer.com/chapter/10.1007/128_2015_650
- 25)** Auer, A. A., Antonietti, M.; Antonyshyn, I.;Böhm, K-H.; Brüller, S.; Cap, S.; Cherevko, S.; Davis, R. J.; Deng, X.; Fellinger, T.; Freakley, S.; Grin, Y.; Gunnoe, B.T; Haj-Hariri, H.; Hutchings, G.; Liang, H.; Mayrhofer, K. J. J.; Müllen, K.; Neese, F.; Papakonstantinou, G.; Ranjan, C.; Sankar, M.; Schlögl, R.; Schüth, F.; Shalom, M.; Spanos, I.; Stratmann, M.; Sundmacher, K.; Tüysüz, H.; Vidakovic-Koch, T.; Yi, Y.; Zangari, G. MAXNET Energy - focusing research in chemical energy conversion on the electrocatalytic oxygen evolution, *Green* **2015**, 5, 7.
<http://www.degruyter.com/view/j/green.2015.5.issue-1-6/green-2015-0021/green-2015-0021.xml>
- 26)** Deng, X.; Dodekatos, G.; Pupovac, K.; Weidenthaler, C.; Schmidt, W.; Schüth, F.; Tüysüz, H. Pseudomorphic generation of supported catalysts for glycerol oxidation, *ChemCatChem*, **2015**, 7, 3832.
<http://onlinelibrary.wiley.com/doi/10.1002/cctc.201500703/full>
- 27)** Grewe, T.; Tüysüz, H. Amorphous and crystalline sodium tantalate composites for photocatalytic water splitting, *ACS. App. Mater. Interfaces*, **2015**, 7, 23153.
<http://pubs.acs.org/doi/abs/10.1021/acsami.5b06965>

28) Grewe, T.; Tüysüz, H. Designing Photocatalysts for Hydrogen Evolution - Are Complex Preparation Strategies Necessary to Produce Active Catalysts? *ChemSusChem*, **2015**, 8, 3084.

<http://onlinelibrary.wiley.com/doi/10.1002/cssc.201500774/full>

29) Tüysüz, H.; Schüth, F.; Zhi, L. J.; Müllen, K.; Comotti, M. Ammonia decomposition over iron phthalocyanine- based materials. *ChemCatChem*, **2015**, 7, 1453.

<http://onlinelibrary.wiley.com/doi/10.1002/cetc.201500024/full>

30) Deng, X.; Schmidt, W.; Tüysüz, H. Impacts of geometry, symmetry and morphology of nanocast Co_3O_4 on its catalytic activity for water oxidation, *Chem. Mater.* **2014**, 26, 6127.

<http://pubs.acs.org/doi/abs/10.1021/cm5023163>

31) Deng, X.; Tüysüz, H. Cobalt oxide based materials as water oxidation catalysts: recent progress and challenges, *ACS Catalysis*, **2014**, 10, 3701.

<http://pubs.acs.org/doi/abs/10.1021/cs500713d>

32) Grewe, T.; Deng, X.; Tüysüz, H. Influence of Fe Doping on structure and water oxidation activity of nanocast Co_3O_4 , *Chem. Mater.* **2014**, 26, 3162.

<http://pubs.acs.org/doi/abs/10.1021/cm5005888>

33) Grewe, T.; Deng, X.; Tüysüz, H. A study on growth of Cr_2O_3 in ordered mesoporous silica and its replication, *Chem. Eur. J.* **2014**, 20, 7692.

<http://onlinelibrary.wiley.com/doi/10.1002/chem.201402301/full>

34) Grewe T; Meier, K.; Tüysüz, H. Photocatalytic hydrogen production over various sodium tantalates, *Catalysis Today*, **2014**, 225, 142.

<http://www.sciencedirect.com/science/article/pii/S092058611300583X>

35) Piao, L.Y.; Chen, X.B; Li, Y.D.; Tüysüz, H. Recent progresses in the area of photocatalysis research, *Catalysis Today*, **2014**, 225, 1.

<http://www.sciencedirect.com/science/article/pii/S0920586113006615>

36) Parsons-Moss T.; Tüysüz, H.; Wang, D.; Jones, S.; Olive, D.; Nitsche, H. Plutonium sorption to nanocast mesoporous carbon *Radiochim. Acta*, **2014**, 102, 489.

<http://www.degruyter.com/view/j/ract.2014.102.issue-6/ract-2014-2138/ract-2014-2138.xml>

37) Grewe, T.; Deng, X.; Weidenthaler, C.; Schüth, F.; Tüysüz, H. Design of ordered mesoporous composite materials and their electrocatalytic activities for water oxidation, *Chem. Mater.* **2013**, 25, 4926.

<http://pubs.acs.org/doi/abs/10.1021/cm403153u>

38) Tüysüz, H.; Chan, C. Preparation of amorphous and nanocrystalline sodium tantalum oxide photocatalysts with porous matrix structure for overall water splitting, *Nano Energy*, **2013**, 2, 116.

<http://www.sciencedirect.com/science/article/pii/S221128551200167X>

39) Tüysüz, H.; Schüth, F. Ordered mesoporous materials as catalysts *Adv. Catalysis*. **2012**, 55, 127.

<http://www.sciencedirect.com/science/article/pii/B9780123855169000028>

40) Tüysüz, H.; Hwang, Y.; Khan, S. B.; Asiri, A. M.; Yang, P. Mesoporous Co_3O_4 as electrocatalysts for water oxidation, *Nano Res.*, **2013**, 6, 47.

<http://link.springer.com/article/10.1007/s12274-012-0280-8>

41) Tüysüz, H.; Weidenthaler, C.; Grewe, T.; Salabaş, E. L.; Benitez R. M. J; Schüth, F. A crystal structure analysis and magnetic investigation on ordered mesoporous Cr_2O_3 , *Inorg. Chem.*, **2012**, 51, 11745.

<http://pubs.acs.org/doi/abs/10.1021/ic301671a>

42) Tüysüz, H.; Salabaş, E. L.; Bill, E.; Bongard, H.; Spliethoff, B.; Lehmann, C. W. ; Schüth, F. Synthesis of hard magnetic $\text{Co}_3\text{O}_4/\text{CoFe}_2\text{O}_4$ mesoporous nanocomposite, *Chem. Mater.*, **2012**, 24, 2493.

<http://pubs.acs.org/doi/abs/10.1021/cm3005166>

43) Tüysüz, H.; Weidenthaler, C.; Schüth, F. A strategy for the synthesis of mesostructured metal oxides with lower oxidation states, *Chem. Eur. J.* **2012**, 18, 5080.

<http://onlinelibrary.wiley.com/doi/10.1002/chem.201103650/full>

44) Deng, Y.; Tüysüz, H.; Henzie, J.; Yang, P. Templated synthesis of shape controlled ordered TiO_2 cage structure, *Small*, **2011**, 7, 2037.

<http://onlinelibrary.wiley.com/doi/10.1002/smll.201100579/full>

45) Benitez R. M. J.; Petracic, O.; Tüysüz, H.; Schüth, F.; Zabel, H. Fingerprinting the magnetic behavior of antiferromagnetic nanostructures using remanent magnetization curves, *Phys. Rev. B*. **2011**, 83,134424.

<http://journals.aps.org/prb/abstract/10.1103/PhysRevB.83.134424>

46) Liu, Y.: Tüysüz, H.; Jia, C-J.; Schwickardi, M.; Rinaldi, R.; Lu, A-H.; Schmidt, W.; Schüth, F. From glycerol to allyl alcohol: iron oxide catalyzed dehydration and consecutive hydrogen transfer, *Chem.Commun.* **2010**, 1238.

<http://pubs.rsc.org/en/content/articlehtml/2010/cc/b921648k>

47) Benitez, M. J.; Petracic, O.; Tüysüz, H.; Schüth, F.; Zabel, H. Decoupling of magnetic core and shell contributions in antiferromagnetic Co_3O_4 nanostructures, Benitez *EPL* **2009**, 88, 27004.

<http://iopscience.iop.org/article/10.1209/0295-5075/88/27004/meta>

48) Tüysüz, H. Galilea, J.L, Schüth, F. Highly diluted copper in a. silica matrix as active catalysts for propylene oxidation to acrolein, *Catal. Letters*, **2009**, 131, 49.

<http://link.springer.com/article/10.1007/s10562-009-9909-y>

49) Lu, A.H.; A. H.; Tüysüz, H.; Schüth, F. Synthesis of ordered mesoporous carbon containing highly dispersed copper–sulphur compounds in the carbon framework via a nanocasting route, *Microporous and Mesoporous Mater.* **2008**, 111, 117.

<http://www.sciencedirect.com/science/article/pii/S1387181107004246>

50) Benitez R. M. J.; Petracic, O.; Salabas, E. L.; Radu, F.; Tüysüz, H.; Schüth, F.; Zabel, H. Evidence for core-shell magnetic behavior in antiferromagnetic Co_3O_4 nanowires, *Phys. Rev. Lett.* **2008**, 101, 097206.

<http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.101.097206>

51) Tüysüz, H.; Comotti, M.; Schüth, F. Ordered mesoporous Co_3O_4 as highly active catalyst for low temperature CO-oxidation, *Chem. Commun.* **2008**, 4022.

<http://pubs.rsc.org/en/content/articlehtml/2008/cc/b808815b>

52) Tüysüz, H.; Liu, Y.; Weidenthaler, C.; Schüth, F., Pseudomorphic transformation of highly ordered mesoporous Co_3O_4 to CoO via reduction with glycerol, *J. Am. Chem. Soc.* **2008**, 130, 14108.

<http://pubs.acs.org/doi/abs/10.1021/ja806202v>

53) Tüysüz, H.; Lehmann , C. W.; Bongard, H.; Tesche, B.; Schmidt, R.; Schüth, F. Direct imaging of surface topology and pore system of ordered mesoporous silica (MCM-41, SBA-15 and KIT-6) and nanocast metal oxides by High Resolution Scanning Electron Microscopy, *J. Am. Chem. Soc.* **2008**, 130, 11510.

<http://pubs.acs.org/doi/abs/10.1021/ja803362s>

54) Tüysüz, H.; Salabas, E. L.; Weidenthaler, C.; Schüth, F. Synthesis and magnetic investigation of ordered mesoporous 2-line ferrihydrite, *J. Am. Chem. Soc.* **2008**, 130, 280.

<http://pubs.acs.org/doi/abs/10.1021/ja075528j>