ZILI WU
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Education and Training

Wuhan University, Wuhan, China, Environmental Chemistry, B.S.,1996
Dalian Institute of Chemical Physics, Dalian, China, Physical Chemistry, Ph.D., 2001

Research and Professional Experience

2016 – Present: Group Leader, Surface Chemistry and Catalysis group at Chemical Science Division
2014 – Present: Thrust Leader, UNCAGE-ME Energy Research Frontier Center of DOE-BES.
2006 – Present: Research Staff, joint appointment between Chemical Sciences Division and Center for Nanophase Materials Sciences, Oak Ridge National Laboratory
2003-2006: Postdoc, Center for Catalysis and Surface Science, Northwestern University.
2001-2003: Research associate, Dalian Institute of Chemical Physics, China

Publications

Total publications include >140 peer-reviewed journal articles, 6 book chapters (total citations = 4500+; h-index = 38). Recent representative publications:

1. Su, T.; Shao, Q.; Qin, Z.; Guo, Z.; Wu, Z., Role of Interfaces in Two-Dimensional Photocatalyst for Water Splitting. *ACS Catalysis* **2018,** *8* (3), 2253-2276.
2. Polo-Garzon, F.; Wu, Z. L., Acid-base catalysis over perovskites: a review. *Journal of Materials Chemistry A* **2018,** *6* (7), 2877-2894.
3. Fung, V.; Polo-Garzon, F.; Wu, Z. L.; Jiang, D. E., Exploring perovskites for methane activation from first principles. *Catal Sci Technol* **2018,** *8* (3), 702-709.
4. Foo, G. S.; Hood, Z. D.; Wu, Z. L., Shape Effect Undermined by Surface Reconstruction: Ethanol Dehydrogenation over Shape-Controlled SrTiO3 Nanocrystals. *ACS Catalysis* **2018,** *8* (1), 555-565.
5. Zhu, W. S.; Wu, Z. L.; Foo, G. S.; Gao, X.; Zhou, M. X.; Liu, B.; Veith, G. M.; Wu, P. W.; Browning, K. L.; Lee, H. N.; Li, H. M.; Dai, S.; Zhu, H. Y., Taming interfacial electronic properties of platinum nanoparticles on vacancy-abundant boron nitride nanosheets for enhanced catalysis. *Nat Commun* **2017,** *8*.
6. Zhu, M. H.; Lai, J. K.; Tumuluri, U.; Wu, Z. L.; Wachs, I. E., Nature of Active Sites and Surface Intermediates during SCR of NO with NH3 by Supported V2O5-WO3/TiO2 Catalysts. *J Am Chem Soc* **2017,** *139* (44), 15624-15627.
7. Wu, Z. L.; Cheng, Y. Q.; Tao, F.; Daemen, L.; Foo, G. S.; Nguyen, L.; Zhang, X. Y.; Beste, A.; Ramirez-Cuesta, A. J., Direct Neutron Spectroscopy Observation of Cerium Hydride Species on a Cerium Oxide Catalyst. *J Am Chem Soc* **2017,** *139* (28), 9721-9727.
8. Tumuluri, U.; Howe, J. D.; Mounfield, W. P.; Li, M. J.; Chi, M. F.; Hood, Z. D.; Walton, K. S.; Sholl, D. S.; Dai, S.; Wu, Z. L., Effect of Surface Structure of TiO2 Nanoparticles on CO2 Adsorption and SO2 Resistance. *ACS Sustain Chem Eng* **2017,** *5* (10), 9295-9306.
9. Polo-Garzon, F.; Yang, S. Z.; Fung, V.; Foo, G. S.; Bickel, E. E.; Chisholm, M. F.; Jiang, D. e.; Wu, Z., Controlling Reaction Selectivity through the Surface Termination of Perovskite Catalysts. *Angewandte Chemie International Edition* **2017,** *56* (33), 9820-9824.

10. Foo, G. S.; Polo-Garzon, F.; Fung, V.; Jiang, D. E.; Overbury, S. H.; Wu, Z. L., Acid-Base Reactivity of Perovskite Catalysts Probed via Conversion of 2-Propanol over Titanates and Zirconates. *ACS Catalysis* **2017,** *7* (7), 4423-4434.
11. Foo, G. S.; Hu, G. X.; Hood, Z. D.; Li, M. J.; Jiang, D. E.; Wu, Z. L., Kinetics and Mechanism of Methanol Conversion over Anatase Titania Nanoshapes. *ACS Catalysis* **2017,** *7* (8), 5345-5356.

Synergistic Activities

1. *Proposal reviewer*: DOE, NSF, ACS-PRF and DOE User Facilities.
2. *Symposium organizers*: >10 symposia at ACS National Meetings: 245th ACS Meeting "Catalysis by Materials with Well-defined Structures", 246th ACS Meeting "Catalysis and Catalysts for Energy and Fuels", 247th ACS Meeting "Carbon Catalysts", 248th ACS Meeting "Advances in in situ and operando studies of catalysis", 249th ACS Meeting "Surface Chemistry and Catalysis on Oxides", 250th ACS Meeting "Advances in Ceria Based Catalysis: Structural, Electronic and Chemical Properties Tailored for Chemical Conversion", 251st ACS Meeting "Novel Materials for Energy and Fuels", 252nd ACS Meeting "Degradation of Materials for Energy and Fuel Production".
3. *Editorial Board*: Chinese Journal of Catalysis, 2014 – present; Chinese Chemical Letters, 2016 – present.
4. *Journal reviewer*: Journal of American Chemical Society, Angew Chem Int. Ed., Chemical Communications, Journal of Catalysis, Journal of Physical Chemistry, Physical Chemistry Chemical Physics, ChemCatChem, Applied Catalysis A and B, Catalysis Today, Catalysis Communications, Journal of Nanoparticle Research etc.

Potential Conflicts of Interest

Collaborators and Co-editors

Y. Lei, University of Alabama – Hunstville; F. Tao, University of Kansas; S.Q. Ma, University of S. Florida; W.Z. Li, University of Iowa.; Z. Y. Gu, University of Massachusetts Lowell; X. Zhao, University of Memphis; M. Banares, Institute of Catalysis and Petroleumchemistry (Spain).

Graduate and Postdoctoral Advisors and Advisees

Ph.D. advisors: Qin Xin, Can Li (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China), and A. Guerrero-Ruiz (Institute of Catalysis and Petroleumchemistry, Spain).
Postdoctoral Advisor: Peter C. Stair (Northwestern University and Argonne National Laboratory)
Graduate advisees: Mar Piernavieja-Hermida (with Prof. Y. Lei of University of Alabama – Huntsville)
Postdoc advisees: Eric Formo, Amanda Mann, Uma Tumuluri, Rui Peng, Guo Shiou Foo, Felipe Polo Garzon, Si Luo, Zhenghong Bao.

Advisory Committees

External Advisory Board of *Institute of Catalysis for Energy Processes* (ICEP), Northwestern University, 2017 – present