Qiyuan Wu

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Education

Ph.D. in materials science and engineering

Stony Brook University, USA, 2017

B.E. in engineering science

Stony Brook University, USA, 2012

• Graduated Manga Cum Laude

B.S. in materials science

Nanjing University, China, 2012

Experience

Postdoctoral researcher	National Renewable Energy Laboratory, 2019 - current
Research associate	Brookhaven National Laboratory, 2018 - 2019
Research assistant	Stony Brook University, 2012 - 2017
Teaching assistant	Stony Brook University, 2011 - 2014

Editorial

Reviewer

ACS Applied Materials & Interfaces
ACS Catalysis
Applied Surface Science
Catalysis Today
Chemsuchem
Chemical Communications
Clean Energy
Nanoscale Advance
RSC Advance
Surface Review and Letters

Awards

American Chemical Society (ACS) Graduate Student Award in Environmental Chemistry
ACS ENVR travel award
ACS CATL travel award
Sigma Xi travel award
Graduate scholarship
Chinese People's scholarship

Publications

Yan, B., Zhao B., Kattel, S., **Wu, Q.**, Yao, S., Su, Dong., Chen, J.G. "Tuning CO2 hydrogenation selectivity via metal-oxide interfacial sites" *Journal of Catalysis* (2018) submitted

Yan, D., Topsakal, M., Selcuk, S., Lyons, J.L., Zhang, W., **Wu, Q.**, Wluyo, I., Stavitski, E., Attenkofer, K., Yoo, S., Lu, D., Hybertsen, M.S., Stacchiola, D.J., and Liu, M. "Unravelling the atomic motifs in ultrathin amorphous titania capping layer over zinc oxide nanowire photocatalyst" *Nano Letters* (2019) accepted

Wang, L., Housel, L., Bock, D., Abraham, A., Dunkin, M., McCarthy, A., **Wu, Q.**, Kiss, A., Thieme, J., Takeuchi, E.S., Marschilok, A.C., Takeuchi, K.J., "Deliberate Modification of

Fe3O4 Anode Surface Chemistry: Impact on Electrochemistry" *ACS Applied Materials & Interfaces* (2019) accepted

Xie, Z., Yan, B., Lee, J.H., **Wu, Q.**, Li, X., Zhao, B., Zhang, L., Chen, J.G. "Effects of oxide supports on the catalytic reduction of CO2 by ethane over Pt-Ni bimetallic catalysts" *Applied Catalysis B: Environmental* 245 (2019): 376-388

Yan, B.*, **Wu, Q.***, Cen, J., Timoshenko, J., Frenkel, A.I., Su, D., Chen, X., Parise, J.B., Stach, E.A., Orlov, A., Chen, J.G. "Highly Active Subnanometer Rh Clusters Derived from Rh-doped SrTiO3 for CO2 Reduction" *Applied Catalysis B: Environmental* 237 (2018): 1003-1011. *equal contribution

Cen, J., **Wu, Q.**, Yan, D., Zhang, W., Zhao, Y., Tong, X., Liu, M., Orlov, A. "New Aspects of Improving the Performance of WO3 Thin Films for Photoelectrochemical Water Splitting by Tuning the Ultrathin Depletion Region" *RSC Advance* 9.2 (2019): 899-905

Yan, B., Yao, S., Kattel, S., **Wu, Q.**, Xie, Z., Gomez, E., Liu, P., Su, D., Chen, J.G. "Active sites for tandem reactions of CO2 reduction and ethane dehydrogenation over CeO2-supported NiFe catalysts" *Proceedings of the National Academy of Sciences of the United States of America* (2018): 201806950

Zhao, B., Yan, B., Jiang, Z., Yao, S., Liu, Z., **Wu, Q.**, Ran, R., Senanayake, S.D., Weng, D., Chen, J.G. "High Selectivity of CO2 Hydrogenation to CO by Controlling the Valence State of Nickel using Perovskite" *Chemical Communications* 54.53 (2018): 7354-7357

Yao, S., Yan, B., Jiang, Z., Liu, Z., **Wu, Q.**, Lee, J.H. Chen, J.G. "Combining CO2 Reduction with Ethane Oxidative Dehydrogenation by Oxygen-modification of Molybdenum Carbide" 8.6 *ACS Catalysis* (2018): 5374-5381 (highlighted in journal cover)

Xie, Z., Yan, B., Kattel, S., Lee, J.H., Yao, S., **Wu, Q.**, Rui, N., Gomez, E., Liu, Z., Xu, W., Zhang, L., Chen, J.G. "Dry Reforming of Methane over CeO2-supported Pt-Co Catalysts with Enhanced Activity" *Applied Catalysis B: Environmental* 236 (2018): 280-293

Wu, Q., Quilty, C.D., Takeuchi, K.J., Takeuchi, E.S., Marschilok, A.C. "Material Design Strategies to Achieve Simultaneous High Power and High Energy Density" *MRS Advances* (2018): 1-7

Wu, Q., Yan, B., Cen, J., Timoshenko, J., Zakharov, D.N., Chen, X., Yao, S., Frenkel, A.I., Stach, E.A., Chen, J.G., and Orlov, A. "Growth of Nanoparticles with Desired Catalytic Functions by Controlled Doping-Segregation of Metal in Oxide" *Chemistry of Materials* 30.5 (2018): 1585–1592

Zhang, W., Yan, D., Li, J., **Wu, Q.**, Cen, J., Zhang, L., Orlov, A., Xin, H., Tao, J., and Liu, M. "Anomalous conductivity tailored by domain wall transport in crystalline BiVO4 photoanodes" *Chemistry of Materials* 30.5 (2018): 1677–1685

Tackett, B.M., Sheng, W., Kattel, S., Yao, S., Yan, B., Kuttiyiel, K.A., **Wu, Q.**, Chen, J.G. "Reducing Iridium Loading in Oxygen Evolution Reaction Electrocatalysts Using Core-shell Particles with Nitride Cores" *ACS Catalysis* 8.3 (2018): 2615–2621

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Wu, Q., Cen, J., Tong, X., Li, Y., Frenkel, A.I., Zhao, S., Orlov, A. "Comprehensive Study of Catalytic, Morphological and Electronic Properties of Ligand-protected Gold Nanoclusters by

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XPS, STM, XAFS, and TPD Techniques" *Physical Chemistry Chemical Physics* 20.3 (2018): 1497-1503

Zhao, B., Yan, B., Yao, S., **Wu, Q.**, Ran, R., Weng, D., Zhang, C., and Chen, J.G. "LaFe0.9Ni0.1O3 perovskite catalyst with enhanced activity and coke-resistance for dry reforming of ethane" *Journal of Catalysis* 358 (2018): 168-178.

Zhao, S., Li, Y., Liu, D., Liu, J., Liu, Y., Zakharov, D., **Wu, Q.**, Orlov, A., Gewirth, A., Stach, E.A., Nuzzo, R., Frenkel, A. "A multimodal study of the speciations and activities of supported Pd catalysts during the hydrogenation of ethylene" *Journal of Physical Chemistry C* 121.34 (2017): 18962-18972.

Stach, E., Zhao, S., Li, Y., Liu, D., Liu, J., Liu, Y., Zakharov, D., **Wu, Q.**, Gewirth, A., Orlov, A., Nuzzo, R., Frenkel, A., " Operando and multimodal studies of speciation and activity of Pt catalysts during the hydrogenation of ethylene." *Microscopy and Microanalysis*, 23, S1 (2017): 892-893.

Zhang, W., Yan, D., Appavoo, K., Cen, J., **Wu, Q.**, Orlov, A., Sfeir, M.Y., and Liu, M. "Unravelling Photocarrier Dynamics beyond the Space Charge Region for Photoelectrochemical Water Splitting." *Chemistry of Materials* 29.9 (2017): 4036-4043.

Cen, J.*, **Wu, Q.***, Liu, M., Orlov, A. "Developing New Understanding of Photoelectrochemical Water Splitting via in-situ Techniques: A Review on Recent Progress" *Green Energy and Environment* 2.2 (2017): 100-111. *equal contribution

Sheng, W., Kattel, S., Yao, S., Yan, B., Hawxhurst, C., **Wu, Q.**, Chen, J.G. "Electrochemical Reduction of CO2 to Synthesis Gas with Controlled CO/H2 Ratios" *Energy and Environmental Science* 10.5 (2017): 1180-1185. (highlighted in journal cover)

Ramakrishnan, G., **Wu, Q.**, Moon, J., Orlov, A. "Reactions of SO2 on hydrated cement particle system for atmospheric pollution reduction: A DRIFTS and XANES study" *Chemical Engineering Journal* 319 (2017): 57-64.

Cen, J., **Wu, Q.**, Yan, D., Tao, J., Kisslinger, K., Liu, M., Orlov, A. "Photoelectrochemical Water splitting with a SrTiO3 : Nb / SrTiO3 n+-n Homojunction Structure." *Physical Chemistry Chemical Physics* (2017): 2760-2767.

Wu, Q., Ridge, C. J., Zhao, S., Zakharov, D., Cen, J., Tong, X., Connors, E., Su, D., Stach, E.A., Lindsay, C.M. and Orlov, A. "Development of a New Generation of Stable, Tunable, and Catalytically Active Nanoparticles Produced by the Helium Nanodroplet Deposition Method." *The Journal of Physical Chemistry Letters* 7.15 (2016): 2910-2914. (highlighted by DOE)

Zhang, Q., Tackett, B. M., **Wu, Q.**, and Chen, J.G. "Trends in Hydrogen Evolution Activity of Metal-Modified Molybdenum Carbides in Alkaline and Acid Electrolytes" *ChemElectroChem* 3 (2016): 1686.

Wu, Q., Cen, J., Goodman, K. R., White, M. G., Ramakrishnan, G., and Orlov, A. "Understanding the Interactions of CO2 with Doped and Undoped SrTiO3." *ChemSusChem* 9.14 (2016): 1889-1897.

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Stach, E., Li, Y., Zhao, S., Gamalski, A., Zakharov, D., Tappero, R., Chen-Weigart, K., Thieme, J., Jung, U., Elsen, A., **Wu, Q.**, Orlov, A., Chen, J., Nuzzo, R., Frenkel, A., "Characterizing Working Catalysts with Correlated Electron and Photon Probes." *Microscopy and Microanalysis*, 21, S3 (2015): 563-564.

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Wu, Q., Xiong, S., Shen, P., Zhao, S., Li, Y., Su, D., and Orlov, A. "Exceptional activity of sub-nm Pt clusters on CdS for photocatalytic hydrogen production: a combined experimental and first-principles study." *Catalysis Science & Technology* 5.4 (2015): 2059-2064. (highlighted in journal cover)

Dharmagunawardhane, H. N., Woerner, W. R., **Wu, Q.**, Huang, H., Chen, X., Orlov, A., Khalifah, P. G., and Parise, J. B. "Photocatalytic hydrogen evolution using nanocrystalline gallium oxynitride spinel." *Journal of Materials Chemistry A* 2.45 (2014): 19247-19252.

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