

Zhexi Lin

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Education

Columbia University

Expected Grad. – 2020

Ph.D. in Chemical Engineering

University of Delaware

Spring 2015

Bachelor of Chemical Engineering

Dean's List

Fall 2011 – Spring 2015

Experience

Research assistant

Winter 2015 - Present

Columbia University

Title: "Investigation of selective hydrodeoxygenation with metal carbide catalysts for biomass upgrading via surface science approaches"

Advisor: Prof. Jingguang Chen

Teaching Assistant

Fall 2015, Spring 2016

Columbia University

- Responsible for tutoring undergraduate students in Separation and Chemical Engineering Lab

Senior thesis research

Summer 2014 – Spring 2015

Catalysis Center for Energy Innovation (CCEI), University of Delaware

Title: "Elucidating the Structure, Reaction Pathway and Kinetics of the Carbohydrate Derived Humins"

Advisors: Dr. Vladimiro Nikolakis, Prof. Dionisios G. Vlachos

Research Experience for Undergraduates (REU) Program

Summer 2013

Pacific Northwest National Laboratory (PNNL), Catalysis Center for Energy Innovation (CCEI)

Title: "Controlled Synthesis of Pd-Fe Nanoparticles for the hydrodeoxygenation (HDO) reaction of cresol and phenol"

Advisors: Prof. Ayman M. Karim, Prof. Dionisios G. Vlachos

Lab Assistant

June 2012 – November 2012

Institute of Energy Conversion (IEC), University of Delaware

Title: "Optimization of the light trapping properties of CIGS solar cell by surface texturing of Zinc Oxide"

Advisor: Dr. Kevin Dobson

Poster Presentations

- Z. Lin, N. M. Al Hasan, A. M. Karim, D. G. Vlachos, “Synthesis and Characterization of Palladium-Iron Nanoparticle Catalyst for the Conversion of Biomass”, 2014 AIChE Annual Student Conference, November 2014, Atlanta, GA
- Z. Lin, N. M. Al Hasan, A. M. Karim, D. G. Vlachos, “Controlled Synthesis of Pd-Fe Nanoparticles for the Catalytic Conversion of Biomass”, University of Delaware Undergraduate Research and Service Celebratory Symposium, August 2013, Newark, DE

Publications

- Tsilomelekis, G.; Orella, M. J.; Lin, Z.; Cheng, Z.; Zheng, W.; Nikolakis, V.; Vlachos, D. G. “Molecular structure, morphology and growth mechanisms and rates of 5-hydroxymethyl furfural (HMF) derived humins”, *Green Chem.* 2016, 18 (7), 1983–1993.
- Dobson, K. D.; Lin, Z.; Arivalagan, J; Shafarman, W. N. “Surface Texturing of Zinc Oxide by Oxalic Acid for Photovoltaic Application”, in preparation.

Skills and Techniques

Software skills:

Microsoft Office, ASPEN, MATLAB, Origin, Python, AFT Fathom, FLUENT

Experimental Techniques:

Temperature-programmed desorption (TPD), High resolution electron energy loss spectroscopy (HREELS), Density Functional Theory (DFT), High-performance liquid chromatography (HPLC), Dynamic light scattering (DLS), X-ray diffraction (XRD),

Achievements

- Robert L. Pigford Scholarship Fall 2014
- University of Delaware Summer Undergraduate Research Fellow Summer 2014
- AIChE – Wilmington Student Award Spring 2014, 2015
- Tau Beta Pi Engineering Honor Society member Fall 2013 – Present
- Catalysis Center for Energy Innovation REU Fellow Summer 2013
- Alpha Lambda Delta Honor Society member Fall 2012 – Present