Michael Wales

Graduate Research Assistant
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Education:

Ph.D.	2011-current	Kansas State University	Chemical Engineering
Graduate Certificate	2011-current	Kansas State University	Biobased Products and Bioenergy
B.A.	2011	University of California Santa Cruz	Chemistry

Experience:

09/2011-Present: **Kansas State University, Department of Chemical Engineering**
Graduate Research Assistant (PhD Student)

Design and fabricate hollow fiber membrane modules. Investigate catalytic non-porous membranes to serve as gas-liquid-solid contact zones for selective hydrogenation of model compounds. Develop composite membranes that are chemically resistant to aromatic hydrocarbons.

11/2004 – 02-2008: **Curtis and Tompkins, LTD. Analytical Laboratories Berkeley, CA**
GC/MS Chemist
TEH Chemist
Mercury Chemist

Provide organic, inorganic, and wet chemical extractions and analyses of a wide range of environmental sample matrices. Operated, trouble shot and maintained multiple instruments including GC/MS for compound ID, gas chromatography (GC) for hydrocarbon analysis and atomic adsorptions (AA) for mercy content.

- Experience testing and analyzing soil and water samples for pollutants
- Troubleshot an assortment of analytical equipment:
  - GC/MS, AA, GC-FID, ICP, ICP-MS, IC
- Detailed record keeping consistent with industry best practices, including both Governmental and Private Sector Audits.
- Responsible for both organic extractions, and inorganic digestions
- Largely self-managed, promoted two times internally

06/2004 – 09/2004: **Protein Design Labs, Inc** **Fremont, Ca**
Antibody Chemist (Internship)

Participated in experimental design and conducted experiments to isolate and purify monoclonal antibodies from ascites fluid and cell culture supernatants. Employed analytical methodologies such as HPLC, western blotting, gel electrolysis, UV

spectrometry and ELISA to characterize antibodies. Gained exposure to protein conjugation chemistry.

- Project goals involved testing/isolating antibodies using affinity capture and ion exchange techniques.
- Analyzed and conveyed experimental results via written reports and visual presentation.
- Gained experience working with antibodies and ascites.
- Performed Quality Control Analyses via western blotting, gel electrolysis, and HPLC.

Summers/School Breaks 1996-2003 EML Associates Sacramento, Ca
Foreman (Conveyor Installation)

I spent many summers installing and constructing conveyer systems for a variety of applications. I have experience working in factory settings that range from bread factories, to postal disruptions warehouses, to computer manufactures. By my fourth year I was promoted to foreman and operated 3-4 person installation crews. I can work with anything mechanical, and although I am not an electrician, I have sufficient knowledge to install motors, pumps, and sensors.

Undergraduate Research Assistants:

Logan Loos	2014-present	Fabrication of composite gas separation membranes
Wade Traylor	2012-2014	Construction of lab scale hollow fiber membrane contact reactors for the evaluation of selective hydrogenation of model compounds

Presentations:

Michael D. Wales; W. Traylor; L. Joos; P. H. Pfromm; M. E. Rezac; "***Catalytic Ceramic Hollow Fiber Membranes for Use in Model Three Phase Reactions: Understanding the influence of hydrogen pressure on selectivity and reaction rate***", ICOM 2014, The 10th International Congress on Membranes and Membrane Processes, Suzhou, China, July 20-25 **(Oral)**

Michael D. Wales; W. Traylor; L. Joos; P. H. Pfromm; M. E. Rezac**; "Lignin Valorization Using Catalytic Membrane Reactors"**, 2014 Energy Symposium, Kansas State University, Manhattan, KS, April 9-10, 2014, (Poster)

Michael D. Wales; W. Traylor; M. E. Rezac; P. H. Pfromm; L. Schulte; J. Stanford; M. Young; M. Heidlage, "***Membrane Reactors for Multiphase Hydrotreating of Biomass: Overcoming Gas-Liquid Mass Transfer Limitations***", AIChE 2014 Spring Meeting and 10th Global Congress on Process Safety, New Orleans, LA, March 30 - April 3, 2014 **(Oral)**

Michael D. Wales, W. Traylor, M. E. Rezac, P. H. Pfromm, "***MEMBRANE REACTORS FOR USE IN THE PARTIAL HYDROGENATION OF VEGETABLE OIL: UNDERSTANDING THE INFLUENCE OF PRESSURE AND THE RATIO OF MEMBRANE AREA TO REACTION VOLUME***", Research and the State Graduate Student Poster Session, Kansas State University, Manhattan, KS October 29, 2013 (Poster)

Michael D. Wales; M. E. Rezac; P. H. Pfromm , "**CATALYTIC POLYMERIC HOLLOW FIBER MEMBRANE MODULES FOR USE IN MODEL THREE PHASE REACTIONS: Understanding the influence of the ratio of membrane area to reaction volume treated",** North American Membrane Society Annual Meeting, Boise, ID, USA, June 8-12 2013 (Poster)

Michael D. Wales; M. E. Rezac; P. H. Pfromm , "***CATALYTIC HOLLOW FIBER MEMBRANE REATORS FOR USE IN LIGIN HYDROGENATION",*** 2013 Bio Energy Symposium, Kansas State University, Manhattan, KS, April 11, 2013 (Poster)

Honors and Awards:

Carl Storm Underrepresented Minority Fellowships, Gordon Research Conference, July 2014

William H. & Virginia Honstead Fellowship Scholarship, February 2014

2nd Place, Food Science Category, Research and the State Graduate Student Poster Session, Kansas State University, Manhattan, KS October 29, 2013 (Poster)

Elias Klein Founders' Travel Awards, North American Membrane Society, June 2013

Graduate Student Council Travel Awards, Spring 2013

Conferences Attended:

July 2014	The 10th International Congress on Membranes and Membrane Processes, Suzhou, China
July 2014	Gordon Research Conference: Membranes: Materials & Processes, New London, NH
April 2014	2014 Energy Symposium, Kansas State University, Manhattan, KS
March 2014	AIChE 2014 Spring Meeting and 10th Global Congress on Process Safety, New Orleans, LA
July 2013	International Conference on Catalysis in Membrane Reactor, Porto, Portugal
June 2013	North American Membrane Society Annual Meeting, Boise, ID
April 2013	2013 Bio Energy Symposium, Kansas State University, Manhattan, KS

Activities:

Member, North American Membrane Society

Member, American Institute of Chemical Engineers

Assistant Coach, Kansas State/Ft. Riley Rugby Football Club

Member, Graduate Students of Color – HUES

Member, K-State Rock Climbing Club

Hobbies/Interests:

Assistant Coach for Kansas State University Men's Rugby, rock climbing, and music. Of note, I have traveled across the United States with an award winning music group.