JENNIFER BEEM

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EDUCATION

University of Oklahoma
Norman, OK

B.S. in Chemical Engineering — May 2013
GPA: 3.92 / 4.0

EXPERIENCE

Chevron Phillips Chemical Company LLC
Research and Technology Center
Bartlesville, OK

Technical Service Engineer — June 2013 - June 2016

Geomembrane Materials & Application Subject Matter Expert

- Youngest employee to-date to hold position
- Primary contact for geomembrane support and development projects
- Managed scale-up of developmental products from pilot to full production scale
- Generated mechanical property (tensile, tear, puncture, etc.), oxidation stability (OIT, HP-OIT), and stress-cracking failure (NCTL, ESCR, etc.) analyses
- Evaluated the effect of various additive formulations on durability properties (OIT/HP-OIT after oven and QUV aging)
- Assisted in fabrication trials using full-scale production equipment (round and flat die sheet extrusion)
- Led technical application-driven discussions with customers
- Collaborated with catalyst and additive chemists to develop and improve products
- Trained employees on geomembrane technology and resin properties

Polyethylene Materials & Applications Development

- Coordinated a group engineering effort to evaluate the material properties of various resins. Testing included assessment of chemical, mechanical, and thermal properties. Processing studies on full-scale fabrication machines (blow molding and film extrusion)
- Worked closely with manufacturing quality control testing lab to improve techniques
- Supported geomembrane and blow molding application areas (developmental projects and technical support)
- Briefed CEO and Vice Presidents on current technical topics

Injection Molding Studies & Resin Development

- Formulated new polyphenylene sulfide (PPS) resins for injection molding automotive applications. Completed comprehensive mechanical and thermal property analyses. Performed additional curiosity-driven studies
- Conducted studies on injection molding regrind use, focusing on mechanical property effects. Formulated final summary report on findings for use by customers
- Created an intuitive data management system for accessing large quantities of material properties data

Chevron Phillips Chemical Company LLC
Houston, TX

Summer Intern — May 2012 - July 2012

- Produced Global Inventory Model to cut costs. Created more efficient feedstock and product shipments through optimization of feedstock inventory based on product and location

EXPERIENCE CONTINUED

Southwest Nanotechnologies Inc.
Norman, OK

Research Intern Sept. 2011 - April 2012

- Functionalized conductive carbon nanotubes through metal nanoparticle decoration for use in transparent conductive films (TCFs)
- Studied effects of high temperature on acid-functionalized carbon nanotubes

École Nationale Supérieure de Chimie de Paris
Dr. Michael Tatoulian
Paris, France

Research Intern (NSF International REU) May 2011 - Aug. 2011

- Produced and analyzed cobalt catalyst micro-fluidic systems through the use of plasma enhanced chemical vapor deposition using SEM, TEM, XPS, and XRD.

University of California
Dr. Edward Kramer
Santa Barbara, CA

Research Intern (NSF RISE-REU) June 2010 - Aug. 2010

- Characterized the morphology of polymer-based solar cells using DSC, dynamic secondary ion mass spectrometry (DSIMS), FTIR, GPC, and XRR.

University of Oklahoma
Dr. Daniel Resasco
Norman, OK

Research Assistant Jan. 2010 - May 2010

- Aided in development of techniques for printing carbon nanotube electrical circuits using inkjet printers

PUBLICATIONS

Journal Papers

Zheng, X., Chen, G.,, Zhang, Z., **Beem, J.**, Massey, S., and Huang, J. **"A Two-Step Process for Surface Modification of Poly(ethylene terephthalate) Fabrics by Ar/O2 Plasma-induced Facile Polymerization at Ambient Conditions."** *Surface and Coatings Technology* 226 (2013): 123-29.

Zheng, X., Chen, G., Zhang, Z., Lu, G., **Beem, J.**, Massey, S., and Tatoulian, M. **"Different Polymerizing Characteristics of Ar/He Atmospheric Pressure Plasma Jets at Room Temperature."** *Plasma Processes and Polymers Plasma Processes Polm.* 10.4 (2013): 379-87.

Chen, G. L., Guyon, C., Zhang, Z.X., Ognier, S., **Beem, J.**, Tatoulian, M., **"The Different Structure Characteristics of Nanosized Co3O4 Film Crystallized by the Annealing and Plasma Techniques."** *Materials Letters* 107 (2013): 111-114.

Presentations

Beem, J., Chen, G., and Tatoulian, M. 2012-03-27 **"Plasma Post Treatment and Thermal Annealing on Cobalt Catalyst Micro-Fluidic Systems"** ACS Conference, San Diego, California, 2012.

Beem, J., Jennings, C. S., Chen, W., and Silvy, R. P. 2011-11-04 **"Metal Nanoparticles Decorated Carbon Nanotubes for Transparent Conductive Films"** Oklahoma Research Day, Cameron University, Lawton, OK

Beem, J., Perez, L., and Kramer, E. 2010-08-12 **"Depth Profile Analysis on P3HT:PCBM Bulk Heterojunction Films using DSIMS"** RISE Poster Session, UCSB Materials Research Laboratory, Santa Barbara, CA

LEADERSHIP

Practical Education Network

Curriculum Builder — Aug. 2016 - Present

- Building hands-on science curriculum for low-resource communities

Math Mentors
Eugene Field Elementary

Mentor — Sept. 2016 - Present

- Mentoring low-income community students in math exercises

After-School Homework Club
Brookside Library

Homework Coach — Oct. 2016 - Present

- Coaching and tutoring students in a one-on-one environment

Society of Women Engineers Outreach Program
Edison Elementary School

Volunteer — Jan. 2016

- Showcased science and engineering experiments to a group of elementary-aged girls to encourage science and engineering learning

New Hire Network
Chevron Phillips
Chemical Company LLC

Committee Member, Social Chair (Jan. 2016 - June 2016) — Jan. 2015 - June 2016

- Jumpstarted committee as a key initial founder
- Mentored incoming employees to ensure they have the resources needed to transition into work
- Organized volunteer and social events for new hires

Employee Safety Committee
Chevron Phillips
Chemical Company LLC

Group Representative — Feb. 2015 - Jan. 2016

- Communicated policy revisions with management, safety group, and work group

Society of Plastics Engineers
Oklahoma Board of Directors

Board Member, Secretary — June 2015 - June 2016

- Organized monthly meetings
- Formulated meeting minutes and distribution to group

Bartlesville District Science Fair
Bartlesville Public Schools

Judge — Feb. 2014 - Feb. 2015

- Judged elementary through high school science projects

Chemistry Week Outreach Program
Bartlesville Public Schools

Volunteer — Oct. 2013 - Present

- Teach science experiments to 4th and 5th grade classes to encourage involvement in science

Dean's Leadership Council
University of Oklahoma
College of Engineering

Mentor — Aug. 2010 - May 2012

- Led groups of freshmen engineering majors in various outreach and educational activities and classes

Chevron Phillips Mentor Program
University of Oklahoma CBME

Chemical Engineering Mentor — Aug. 2010 - Dec. 2010

- Tutored, mentored, and graded exams and homework for chemical engineering sophomores

Oklahoma State University Symphony Orchestra

Cello Section Leader — Sept. 2008 - May 2009

SKILLS

Research Techniques

ATR-FTIR, Carbon black content, Density column/displacement, DSIMS, DSC, ESCR, Flexural, Fatigue, GPC, Impact (Izod & Charpy), Melt index (MI & HLMI), NCTL, NCLS, OIT/HP-OIT, Rheology (capillary & dynamic), Taber abrasion, TGA, Tensile, Tensile tear, Tensile impact, XPS, XRD

Languages

Mandarin Chinese (fluent, oral)

AWARDS & HONORS

Goldwater Scholarship Nominee

Engineering Program of Excellence Scholarship

British Petroleum Inspire Scholarship

Laurance Reid Gas Conditioning Conference Scholarship

International School of Hydrocarbon Measurement Scholarship

PERSONAL

FabLab

Tinkering with 3D modeling and fabrication techniques

Tulsa Rowing Club

Training both in and out of the water

Cellist

Bartlesville Symphony Orchestra member

Cyclist

Avid rider

Outdoorswoman

Hiker, camper, and general outdoors enthusiast

References available upon request.