

Monika Molenda

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EDUCATION

Master's in Polymer Science

Feb. 2020

Freie Universität Berlin, Berlin, Germany

- Joint program with Humboldt University, Technical University of Berlin, University of Potsdam
- Thesis: Influence of branching agent on the synthesis and properties of poly(butylene succinate)

Bachelor's in Chemistry

Apr. 2017

Oakland University, Rochester Hills, MI

- Graduated *summa cum laude* (GPA 3.98/4.00), Presidential Scholarship recipient, member of the Honors College
- German minor, Member of the American Chemical Society Student Chapter and the German Club

WORK EXPERIENCE

Fraunhofer Institute for Applied Polymer Research

Oct. 2018 – Oct. 2019

Graduate researcher, polymer synthesis group

Golm, Potsdam, Germany

- Improved a processes for thermoplastic polyester synthesis in a laboratory setting
- Participated in organizing and executing synthesis scale-up, as part of a team
- Investigated polymer structure-property relationships by interpreting rheology and mechanical property data
- Analyzed viscometry and GPC data to examine polymer molar mass distributions
- Routine lab housekeeping: maintained instruments, managed inventory and supplies, safely disposed waste
- Maintained organized documentation of laboratory procedures and results
- Supported training of less-experienced students and technicians

National University of Singapore

Jun. – Aug. 2016

Undergraduate Researcher, ACS International Research Experience for Undergraduates

Singapore

- Synthesized and purified metal-organic frameworks for ion extraction according to established protocols
- Evaluated framework structure by surface area analysis (BET) and powder x-ray diffraction
- Performed anion-extraction experiments monitored by UV/Visible spectroscopy
- Reported results as a poster and oral presentation at the Spring 2017 ACS national meeting

University of Minnesota

Jun. – Aug. 2015

Undergraduate Research Fellow, Center for Sustainable Polymers

Minneapolis, MN

- Developed a new sugar-based hardener for thermoset epoxy resins
- Performed curing studies on epoxy resin with varying hardener ratios using DSC
- Tested physical properties and chemical/thermal degradation of cured resin

Oakland University

May 2014 – Apr. 2017

Undergraduate Researcher, Chavez group

Rochester Hills, MI

- Independently synthesized and purified organic molecules and metal complexes for enzyme modeling
- Used ¹H NMR, FTIR, and GC/MS to analyse purity of synthesized materials
- Performed substrate degradation experiments using NMR

SKILLS

- **Technical skills:** Analytical chemistry (GC-MS, UV-Vis, FT-IR, NMR, DSC, TGA, GPC, viscometry), polymer chemistry, synthesis, rheology, laboratory techniques (purification, extraction, rotary evaporator, analytical balance, TLC), MS Office (Word, Excel PowerPoint), data analysis
- **Languages:** Polish (fluent), German (intermediate), Spanish (basic)