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University of Michigan  
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## Research Interests

Plasma modeling, plasma-nanoparticle synthesis, plasma-nanoparticle interactions, plasma catalysis, low temperature plasmas

## Education

### University of Michigan

Ann Arbor, MI

Ph.D. Candidate, Chemical Engineering, Expected Summer 2023

- Advisor: Mark J. Kushner

### University of Michigan

Ann Arbor, MI

M.S., Chemical Engineering, December 2019

GPA: 3.65

### Mississippi State University

Mississippi State, MS

B.S., Chemical Engineering, May 2018

GPA: 3.91

- Spanish Minor

## Research Experience

### University of Michigan

Oct. 2018 - present

*Graduate Research Assistant, Computational Plasma Science and Engineering Group*

- 2-dimensional modeling of nanoparticle synthesis in low temperature plasmas
- Develops code for implementation into existing plasma-hydrodynamics model for exploring plasma-nanoparticle interactions and relationships.

### Mississippi State University

Oct. 2017 - Sep. 2018

*Molecular Science and Engineering Laboratory- Dr. Neeraj Rai*

- Performed molecular dynamics simulations on hierarchical zeolites used for the conversion of biomass to fuels and chemicals.
- Studied adsorption characteristics and electrostatic properties of anions on amorphous silicas.

## Professional Experience

### Site Design Intern

May 2017 – Aug. 2017

Southern Nuclear

Dothan, AL

- Executed special field test concerning pressurization criteria for determination of conformity with technical specifications.

- Created a comprehensive maintenance record for sixteen valves in support of a design change.

### **Summer Intern**

May 2016 – Aug. 2016

Schreiber Water LLC.

Trussville, AL

- Assisted in set-up, troubleshooting and test runs of Fuzzy Filter test in Pennsburg, PA.
- Managed data of a Continually Sequencing Reactor (CSR) Controls Optimizations Study.
- Presented CSR Optimization Study to company owner.

### **Conference Presentations**

1. **J. Polito**, S. J. Lanham, and M. J. Kushner. “Reactor Scale Modeling of Nanoparticle Synthesis in Low Temperature Plasmas.” Oral Presentation. *72<sup>nd</sup> Annual Gaseous Electronics Conference*, College Station, Texas. October 30, 2019.
2. **J. Polito**, S. J. Lanham, and M. J. Kushner. “Reactor Scale Modeling of Nanoparticle Synthesis in Low Temperature Plasmas.” Poster Presentation. *Michigan Institute for Plasma Science and Engineering Symposium*, Ann Arbor, Michigan. November 13, 2019.

### **Extra Curriculars**

University of Michigan Chemical Engineering Department Recruitment Chair, Sep. 2019 - present

Ann Arbor Ultimate League Captain- Jun. 2019 - present

Graduate Society of Chemical Engineers Social Chair, Jan. 2019 – present

University of Michigan Campus Band, Sep. 2018- present

Mississippi State University Famous Maroon Band section leader, Aug. 2014 – May 2018

### **Outreach and Community Service**

University of Michigan Common Reading Experience Facilitator, Fall 2019

University of Michigan Society of Women Engineers Graduate Student Mentor, Fall 2018 - present