ANUKRITI SHRESTHA

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EDUCATION

University of Virginia | **Charlottesville, VA | August 2019 – May 2024** ***(expected)***
Ph.D. in Chemical Engineering

Washington and Lee University | **Lexington, VA | August 2015 – May 2019**
Bachelor of Science in Integrated Engineering (Chemistry Emphasis) and Mathematics | *cum laude*
Semester Abroad **-** King's College London | London, United Kingdom | Jan – June 2018

RESEARCH EXPERIENCE

Graduate Research Assistant | Paolucci Lab, University of Virginia | August 2019 – Present

- Effects of Domain Size and Support Composition on the Reactivity and Reducibility of Oxide-supported Tungsten Oxide Clusters
  - Examining the role of different supports (titania, silica) and loadings (monomer, dimer, trimer) of tungsten oxides on its reactivity and reducibility
- Nanoparticle Size Effects on Phase Stability for Molybdenum and Tungsten Carbides
  - Derived thermodynamic phase diagram as a function of particle size and chemical potential of carbon
  - Studied the crystallization pathway during synthesis and compared to experimental data

Research Assistant for the Gastrointestinal Motility Research Group at Auckland Bioengineering Institute | Auckland, New Zealand | June 2018 – July 2018

- Developed, tested, and validated novel analysis techniques for gastrointestinal bio-electrical activity

Summer Research Scholar at Washington and Lee University (Mathematics) | June – Aug 2017

- Different degrees of polynomials that have roots in the form of continued fractions with common tails

AWARDS

- SUNCAT Summer Institute Poster Award (August 2023)
- ACS CATL ChemCatBio Travel Award for ACS National Meeting in San Francisco (July 2023)
- UVA All University Teaching Award, Office of Graduate and Postdoctoral Affairs (April 2023)
- UVA Professional Development Activity Award, Office of Graduate & Postdoctoral Diversity Programs (April 2023)
- Kokes Travel Award for North American Catalysis Society Meeting 2023 in Providence (March 2023)
- Oral Presentation Award at Southeastern Catalysis Society Annual Meeting (February 2023)
- Chemical Engineering Department Teaching Award for ChE 2215 (May 2022)

TEACHING EXPERIENCE

Adjunct Professor of Engineering | Washington and Lee University | Sept 2023 – Dec 2023

- 1-course teaching load – ENGN 178 – Introduction to Engineering

UVA Engineering Teaching Fellowship Program | ChE 2215 – Materials and Energy Balances, University of Virginia | Aug 2022 – Dec 2022

- Selected to co-teach with Prof. Rachel Letteri, designed and taught half of the lectures
- Held office hours two times a week, designed exam questions and graded 1 of 2 questions for 3 midterms
- Met with student groups for process project check in 3 times during the semester

Graduate Teaching Assistant | ChE 2215 | Aug 2021 – Dec 2021

- Led weekly discussion sections, held weekly office hours, and assisted with quiz grading

Guest Lectures

- ChE 6452 – Data Science in Chemical Engineering **–** March 2023 – *1 lecture*
- ChE 5561 – Computational Chemistry in Chemical Engineering **–** March 2022 – *2 lectures*
- ChE 6665 – Techniques for Chemical Engineering Analysis & Design **–** Aug 2021, Aug - Oct 2022 – *6 lectures*
- ChE 2215 – Materials and Energy Balances **–** October 2021 – *1 lecture*

PUBLICATIONS

- **Shrestha, A.,** Gao, X., Hicks, J. C., & Paolucci, C. (2021). Nanoparticle Size Effects on Phase Stability for Molybdenum and Tungsten Carbides. *Chemistry of Materials*, *33*(12), 4606–4620.
- **Shrestha, A.,** Mamedov, K., Whitcomb, C.A., Davis, R.J. & Paolucci, C. Influence of Domain Size and Support Composition on the Reducibility of TiO_2 and SiO_2 Supported Tungsten Oxide Clusters. *(in preparation)*

PRESENTATIONS

- **Shrestha, A.,** Mamedov, K., Davis, R.J., & Paolucci, C. Effects of Domain Size and Support Composition on the Reactivity and Reducibility of Oxide-supported Tungsten Oxide Clusters
    - Talk, AICHE Annual Annual Meeting in Orlando, FL (Nov 2023, accepted)
    - Talk, American Chemical Society Meeting (Aug 2023, accepted)
    - Talk, North American Catalysis Society Meeting (June 2023)
    - Talk, Southeastern Catalysis Conference Annual Symposium (February 2023)
    - Poster, AICHE Annual Annual Meeting in Phoenix, AZ (Nov 2022)
    - Poster, UVA Engineering Research Symposium (Mar 2023)
- **Shrestha, A.,** Gao, X., Hicks, J. C., & Paolucci, C. (2021). Nanoparticle Size Effects on Phase Stability for Molybdenum and Tungsten Carbides
    - Poster, Virginia Clean Energy and Catalysis Club (August 2022)
    - Talk, AICHE Annual Annual Meeting in Boston, MA (Nov 2021)
    - Talk, UVA Chemical Engineering Summer Seminar Series (July 2021)
    - Poster, UVA Chemical Engineering Research Symposium (March 2021)

MENTORSHIP AND LEADERSHIP EXPERIENCE

- International Student Liaison, UVA Chemical Engineering Graduate Board | Sept 2021 – Present
- Graduate Mentor for 4 undergraduate researchers, UVA Department of Chemical Engineering | Aug 2020 – Present (Shining Wang (2020-2022), Susan Furlough (2020-2021), Sarah Bhargava (2021-2022), Jalen Pryor (2022 - present))
- Recruitment Chair, UVA Chemical Engineering Graduate Board | Sept 2020 – Sept 2022
- Student Representative, UVA Department of Chemical Engineering IDEA (Inclusion, Diversity, Equity and Anti-Racism) Committee| Sept 2020 – Present
- Community Assistant (CA) for Global Service House | W&L University | Aug 2018 – May 2019
- Organic Chemistry Lab Teaching Assistant at W&L University | Sept 2018 – April 2019

TECHNICAL SKILLS

Computational Skills: Python, high performance computing, Mathematica, MATLAB, Inventor, VASP, Unix, Pandas, Scikit Learn, ASE, VESTA

Language Skills: Nepali (native), English (fluent), Hindi (advanced)