

**Nawaraj Karki**  
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## **CURRENT POSITION**

**Graduate Research Assistant**  
Department of Chemistry  
University of Louisville, Louisville, KY

July 2024 – present

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## **EDUCATION**

- **University of Louisville.** Louisville, KY  
Ph.D., Electrochemistry  
Magnetocatalysis for CO<sub>2</sub>RR  
Expected, August 2025
  - **University of Louisville.** Louisville, KY  
M.S., Chemistry  
Enhancing the selectivity of electrocatalytic CO<sub>2</sub> reduction with  
magnetic fields  
May 2023
  - **Middle Tennessee State University.** Murfreesboro, TN  
M.S., Chemistry  
Electrochemical detection of dopamine using p-doped SiNWs  
December 2020
  - **Birendra Multiple Campus.** Bharatpur, Nepal  
MSc., Inorganic Chemistry  
August 2015
  - **Tri-Chandra Multiple Campus.** Kathmandu, Nepal  
BSc., Major Chemistry  
August 2013
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## **PROFESSIONAL EXPERIENCE**

- **Chemical Analyst**  
August 2017–July 2018  
Hongshi Shivam Cement Industry. Nawalparasi, Nepal
- **Process Chemist**  
August 2018–Dec 2018  
Bottlers Nepal, The Coca-Cola Company Pvt Ltd.  
Kathmandu, Nepal

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## GOOGLE SCHOLAR

- [Nawaraj Karki](#)
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## AWARDS

- Graduate Student Council Travel Award, University of Louisville, March, and August 2023
  - Graduate Merit Scholarships, University of Louisville, Spring, 2023
  - Outstanding Chemistry Student UofL, American Chemical Society (ACS) Louisville Section, April 2023
  - Certificate of Excellence for the Completion of Doctoral Degree Candidacy, May 2023
  - Graduate Network in A&S (GNAS) Travel Award, University of Louisville, December 2023
  - ACS Technical Division Energy & Fuel (ENFL) Travel Award, January 2024
  - Dorothy Gibson Memorial Fellowship, University of Louisville, July 2024 – July 2025
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## LEADERSHIP SKILL

- President of Chemistry Graduate Student Association (CGSA), University of Louisville, KY, 2023-2024
  - Executive member in American Chemical Society (ACS) Louisville Section, 2023-Current
  - Vice president of Nepalese Student Association (NSA), University of Louisville, 2023-2024
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## MEMBERSHIP

- American Chemical Society (ACS), October 2019 - Current
  - ACS Technical Division Energy & Fuels (ENFL), January 2023 – Current
  - The Electrochemical Society, October 2023 - Current
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## PRESENTATIONS

1. Electrochemical detection of dopamine with doped and undoped silicon nanowires, 71<sup>st</sup> Southeastern Regional Meeting of the American Chemical Society (SERMACS), poster, Savannah, GA, October 20-23, 2019
2. Electrochemical detection of dopamine with p-doped silicon nanowires, CBAS Graduate Research Showcase, oral, Middle Tennessee State University (MTSU), Murfreesboro, TN, February 5, 2020

3. The effects of an external magnetic field in electrocatalytic CO<sub>2</sub> reduction, Graduate Student Regional Research Conference (GSRRC), oral and poster, University of Louisville Health Sciences Campus, Louisville, KY, March 22-23, 2023
  4. Tuning the selectivity of electrocatalytic CO<sub>2</sub> reduction with an external magnetic field, American Chemical Society (ACS) National Meeting, oral and poster (ENFL), Indianapolis, IN, March 26-30, 2023
  5. Magnetic field-induced modulation of the ratio of CO:H<sub>2</sub> in electrocatalytic CO<sub>2</sub> reduction, Southeastern Regional Meeting of the American Chemical Society (SERMACS), oral, Durham, NC, October 25-28, 2023
  6. Magnetic field-induced modulation of the ratio of CO:H<sub>2</sub> in electrocatalytic CO<sub>2</sub> reduction, outreach poster, Fairdale High School, Louisville, KY, February 2, 2024
  7. Enhancing CO:H<sub>2</sub> selectivity in CO<sub>2</sub> electroreduction with an external magnetic field, American Chemical Society (ACS) National Meeting, oral (ENFL) and poster (Sci-Mix), New Orleans, LA, March 17-21, 2024
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## PUBLICATIONS

1. **N. Karki**, A.V. Davydov, S. Krylyuk, C. C. Chusuei\*. "Electrochemically assaying dopamine with p-doped silicon nanowires," *Analytical Letters*, **2022**, 2161-2169
  2. P.B. Joshi, **N. Karki**, and A.J. Wilson\*. "Electrocatalytic CO<sub>2</sub> reduction in acetonitrile enhanced by the local environment and mass transport of H<sub>2</sub>O," *ACS Energy Lett.*, **2022**, 7, 602-609
  3. **N. Karki**, I.G. Marquina, J.V. Hemmer, Y. Yu, and A.J. Wilson\* "Suppressing competing solvent reduction in CO<sub>2</sub> electroreduction with a magnetic field," *J. Phys. Chem. Lett.*, **2024**, 15, 27, 7045-7054
  4. **N. Karki**, F.L. Mufoyongo, and A.J. Wilson\*. "Utilizing the magnetic properties of electrodes and magnetic fields in electrocatalysis," *Inorg. Chem. Front* **2024**, 11, 5414-5434
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## SERVICE & OUTREACH

- Mentored undergraduate senior students in their individual proposed research for CHEM-527, Fall 2021
- Mentored undergraduate senior students in their individual proposed research for CHEM-426, Fall 2022
- Judge
  - Undergraduate Arts & Research Showcase, University of Louisville, Louisville, KY, April 22, 2022

- Undergraduate Poster Session, SERMACS, Durham, NC, October 27, 2023
  - High School Poster Competition, Fairdale High School, Louisville, June 17, 2024
  - Certificate of Completion of online ACS Reviewer Lab
  - Mentored undergraduate student in their research project. Spring 2024
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## TEACHING EXPERIENCE

### Middle Tennessee State University

- **Chem 1010**, Introduction to General Chemistry, Lab Spring 2019
- **Chem 1111**, General Chemistry, Lab I Fall 2019, Spring & Fall 2020

### University of Louisville

- **Chem 343**, Organic Chemistry, Lab I Spring & Summer 2021
  - **Chem 527**, Introduction to Separations and Spectroscopy, Lab Fall 2021
  - **Chem 101**, **Chem 202** Introduction to Chemistry Spring 2022
  - **Chem 426**, Instrumental and statistical analysis, Lab Fall 2022 & Fall 2023
  - **Chem 202**, General Chemistry II, Recitation Spring 2023
  - **Chem 201**, General Chemistry I, Recitation Spring 2024
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## REFERENCES

### Andrew J. Wilson, Ph.D.

Assistant Professor  
Department of Chemistry,  
University of Louisville, Louisville, KY  
Office: Chemistry building, RN. 151  
<https://www.ajwilsonlab.org>

### Charles C. Chusuei, Ph.D.

Associate Professor  
Department of Chemistry,  
Middle Tennessee State University, Murfreesboro, TN  
Office: Science building, RN. 3065  
<https://cchusuei.wixsite.com/cc-lab>

### Francis P. Zamborini, Ph.D.

Professor  
Department of Chemistry,  
University of Louisville, Louisville, KY  
Office: Chemistry building, RN. 320  
<https://louisville.edu/faculty/fpzamb01>