

Johann V. Hemmer

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Education

2022–curr.	University of Louisville <i>Doctor of Philosophy: Chemistry</i> Advisor: Andrew J. Wilson, Ph.D.
2019–2023	Universidade do Vale do Itajaí (UNIVALI) <i>Master of Science: Pharmaceutical Sciences</i> Thesis: Preparation of γ -Fe ₂ O ₃ /Fe ₃ O ₄ /O-Carboxymethylchitosan/Activated Carbon magnetic nanocomposite and its Utilization in the Adsorption of Cr(VI) from Aqueous Media Advisor: Clóvis Antônio Rodrigues, Ph.D.
2019–2023	<i>Bachelor of Science in Engineering: Chemical Engineering</i> Thesis: Basic Metallic Oxides as Heterogeneous Catalysts for the Propanolysis of Methyl Paraoxon in a Batch Reactor Advisor: Gizelle I. Almerindo, Ph.D.

Publications

2024	Suppressing Competing Solvent Reduction in CO ₂ Electroreduction with a Magnetic Field Karki, N.; Marquina, I. G.; Hemmer, J. V. ; Yu, Y.; Wilson, A. J. <i>The Journal of Physical Chemistry Letters</i> 10.1021/acs.jpcclett.4c01672
	Quantification and description of photothermal heating effects in plasmon-assisted electrochemistry Al-Amin, M.; Hemmer, J. V. ; Joshi, P. B.; Fogelman, K.; Wilson, A. J. <i>Communications Chemistry</i> 10.1038/s42004-024-01157-8
	Reducing Ensemble Averaging for Mechanistic Understanding of Electrocatalysis in Energy Conversion Reactions Hemmer, J. V. ; Joshi, P. B.; Kaur, A.; Wilson, A. J. <i>The Journal of Physical Chemistry C</i> 10.1021/acs.jpcc.3c06615
2023	Tracking Electrochemistry on Single Nanoparticles with Surface-Enhanced Raman Scattering Spectroscopy and Microscopy Hemmer, J. V. ; Joshi, P. B.; Wilson, A. J. <i>Journal of Visualized Experiments</i> 10.3791/65486
2022	Synthesis and characterization of Schiff base derivatives and its effect on urinary parameters of Wistar rats: A comparative analysis with different classes of diuretics Adão, J. R. U.; de Souza, P.; Boeing, T.; Mariano, L.; Brandt, A. N. B.; Hemmer, J. V. ; Bazani, H. A. G.; de Andrade, S. F.; Corrêa, R.; Klein-Júnior, L. C.; Niero, R. <i>Journal of Molecular Structure</i> 10.1016/j.molstruc.2022.132849

Publications (continued)

2021	<p><i>Pterocladia</i> capillacea-stabilized silver nanoparticles as a green approach toward anti-bacterial biomaterials</p> <p>Cavalli, P. A.; Wanderlind, E. H.; Hemmer, J. V.; Gerlach, O. M. S.; Emmerich, A. K.; Bella-Cruz, A.; Tamanaha, M.; Almerindo, G. I.</p> <p><i>New Journal of Chemistry</i> 10.1039/d0nj05150k</p>
2020	<p>Green Synthesis of Gold Nanoparticles Obtained from Algae <i>Sargassum cymosum</i>: Optimization, Characterization and Stability</p> <p>Costa, L. H.; Hemmer, J. V.; Wanderlind, E. H.; Gerlach, O. M. S.; Santos, A. L. H.; Tamanaha, M.; Bella-Cruz, A.; Corrêa, R.; Bazani, H. A. G.; Radetski, C. M.; Almerindo, G. I.</p> <p><i>BioNanoScience</i> 10.1007/s12668-020-00776-4</p> <p>Simple and highly active strontium-based catalyst for detoxification of an organophosphorus chemical warfare agent simulant</p> <p>Hemmer, J. V.; Wanderlind, E. H.; Bazani, H. A. G.; Campos, C. E. M.; Wagner, T. M.; Emmerich, A. K.; Adão, J. R. U.; Almerindo, G. I.</p> <p><i>Brazilian Journal of Chemical Engineering</i> 10.1007/s43153-020-00048-4</p> <p>Use of brewing industry waste to produce carbon-based adsorbents: Paracetamol adsorption study</p> <p>Naldony, B.; Heineck, R. G.; Bazani, H. A. G.; Hemmer, J. V.; Biavatti, M. L.; Radetski, C. M.; Almerindo, G. I.</p> <p><i>Journal of Environmental Science and Health - Part A</i> 10.1007/s12668-020-00776-4</p>

Professional Experience

2021–2022	<p>Central de Laboratórios de Ensaaios Analíticos (CLEAn) - UNIVALI, Itajaí, SC, Brazil <i>Chromatography Sector Manager</i></p> <p>Main responsibilities: testing of cosmetics and pharmaceuticals products through HPLC, LC-MS and FTIR; method development and validation; corrective and preventive maintenance, and calibration of analytical instruments.</p>
2019–2020	<p><i>Laboratory Technician</i></p> <p>Main responsibilities: physical-chemical analysis in water, wastewater and foodstuffs; method development and validation; maintenance of equipment, instruments and laboratory materials; sampling; internal quality control; inventory management; SOP writing and reviewing; ISO 17025 implementation.</p>
2016–2018	<p><i>Laboratory Technician (Student Worker)</i></p> <p>Main responsibilities: physical-chemical analysis in water and wastewater; maintenance of equipment, instruments and laboratory materials; sampling.</p>
2012–2016	<p>Wizard Idiomas, Navegantes, SC, Brazil <i>English ASL teacher</i></p>

Awards

- 2024 Best Laboratory Teaching Assistant

Awards (continued)

- **2023** Most Auspicious First Year Graduate Student
- **2019** Honor of Merit, Conselho Regional de Química (CRQ)
- **2019** Honor of Merit, Conselho Regional de Engenharia e Arquitetura (CREA)

Presentations

- **Graduate Student Regional Research Conference**
"Measuring intermediates of electrochemical CO₂ reduction with spatially and temporally resolved SERS spectroscopy"
University of Louisville, Louisville, KY, March 22, 2023
- **II Simpósio de Investigações Químico-Farmacêuticas**
"Alumina-supported Strontium Oxide as Heterogeneous Catalyst for the Detoxification of an Organophosphorus Chemical Warfare Agent Simulant"
Universidade do Vale do Itajaí (UNIVALI), Itajaí, BR, September 19, 2019
- **IV Simpósio de Ciência e Tecnologia Ambiental**
"Adsorção de Paracetamol em Coluna de Leito Fixo Empacotada com Carvão Obtido de Bagaço de Malte"
("Adsorption of Paracetamol in a Fixed-bed Column Packed with Activated Carbon from Malt Bagasse")
Universidade do Vale do Itajaí (UNIVALI), Itajaí, BR, June 4, 2019

Teaching Experience

	University of Louisville
F2024	<i>CHEM426: Instrumental and Statistical Analysis</i> Instructor: Andrew J. Wilson, Ph.D.
S2024	<i>CHEM210: Introduction to Chemical Analysis 4</i> Instructor: Richard Baldwin, Ph.D.
	<i>CHEM209: Introduction to Chemical Analysis 3</i> Instructor: Richard Baldwin, Ph.D.
F2023	<i>CHEM210: Introduction to Chemical Analysis 4</i> Instructor: Xiang Zhang, Ph.D.
	<i>CHEM209: Introduction to Chemical Analysis 3</i> Instructor: Xiang Zhang, Ph.D.
Su2023	<i>CHEM344: Organic Chemistry</i> Instructor: Andrea Gorce, Ph.D.
S2023	<i>CHEM344: Organic Chemistry</i> Instructor: Andrea Gorce, Ph.D.
F2022	<i>CHEM208: Introduction to Chemical Analysis 2</i> Instructor: Richard Baldwin, Ph.D.
	<i>CHEM207: Introduction to Chemical Analysis 1</i> Instructor: Richard Baldwin, Ph.D.
	Universidade do Vale do Itajaí (UNIVALI)
2021.1	<i>Análise Instrumental (Instrumental Analysis)</i> Instructor: Rodolfo Moresco, Ph.D.

Outreach

- **Poster presentation organizer and presenter**

Fairdale High School, Louisville, KY, February 2, 2024

- **Outreach experiment organizer**

"Synthesis and optical characterization of Ag and Au nanoparticles"

Fairdale High School, Louisville, KY, October 25, 2023

- **Organizer and panel presenter**

Opção Profissional por Área (OPA)

Universidade do Vale do Itajaí (UNIVALI), Itajaí, BR, October, 2021