

Isuri Weeraratne, Ph. D.

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EDUCATION

Ph.D. in Inorganic Chemistry

Wayne State University | Detroit, MI, USA

Overall GPA: 3.83

Dissertation: Induction and Prevention of Electron Transport in Langmuir-Blodgett Films of 3d-based Metallosurfactants: Studies on Current Rectification and Corrosion Inhibition

Aug. 2015 - Apr. 2021

Advisor: Prof. C. N. Verani

B. Sc. in Chemistry (First Class)

University of Sri Jayewardenepura | Sri Lanka

Overall GPA: 3.50

Thesis: Determination of Radioactive Iodine Contamination in Maharagama and Suburb Areas

Sep. 2009 - Jan. 2014

Advisor: Dr. Pahan Godakumbura

TEACHING EXPERIENCE

Senior Lecturer | University of Sri Jayewardenepura

Jan. 2022 - Present

Graduate Teaching Assistant | Wayne State University

Aug. 2015 - Apr. 2021

- Demonstrated the operation of equipment and experiments for general chemistry and organic chemistry lab courses
- Led discussion and quiz sections of a variety of undergraduate general chemistry courses
- Developed and graded written assignments to evaluate student performance
- Supervised procedures and technical laboratory writing
- Enforced proper laboratory safety procedures

School Teacher | Vidura College

Feb. 2015 - Jul. 2015

- Taught science for grades 10 and 11
- Prepared mid semester assignments
- Involved in preparing final semester exam paper

Teaching Assistant | University of Sri Jayewardenepura

Feb. 2014 - Jan. 2015

- Demonstrated lab techniques, supervised experimental procedures and technical laboratory writing for laboratory classes
- Enforced proper laboratory safety procedures and guided students in completion of laboratory assignments adhering to safety procedures

Visiting Lecturer | University of Sri Jayewardenepura

Jul. 2014 - Jan. 2015

- Conducted practical classes for a B.Sc. Medical Laboratory Sciences degree program

RESEARCH EXPERIENCE

Research Assistant | Wayne State University

Aug. 2015 - Apr. 2021

- Synthesized and systematically investigated redox, electronic properties of transition metal complexes aimed towards the development of rectification devices
- Collaborated effectively with many research facilities to understand and develop necessary strategies of device functionalization
- Synthesized transition metal complexes that can form Langmuir-Blodgett films on aluminum and iron surfaces as a protection of the metal against corrosion
- Implemented new techniques to measure corrosion resistance properties of the films
- Proficient in organic and inorganic synthesis, methodology development, purification techniques, NMR, LC-MS, GC, SEM, UV-Vis, FTIR, CV, Tafel, EIS
- Experienced in ChemDraw, Origin pro®, Endnote, Microsoft Word, PowerPoint, and Excel

Research Assistant | University of Sri Jayewardenepura

Feb. 2013 - Jan. 2014

- Determined total iodine content in environmental samples near national cancer institute using kinetic spectrophotometric method
- Radioactive iodine contamination was measured by collaborating with Atomic Energy Authority, Colombo

Intern Chemist | Raigam Marketing Services [PVT] LTD

Jan. 2013 - Feb. 2013

- Involved in developing new flavors for soy-based products
- Carried out inspection and quality control tests for sanitary napkins

PUBLICATIONS

- Weeraratne, A. D. K. I.; Baydoun, H.; Shakya, R.; Niklas, J.; Xie, L.; Mao, G.; Stoian, S.; Poluektov, O.; Verani, C., Observation of Current Rectification by the New Bimetallic Iron (III) Hydrophobe [Fe^{III}₂ (L^{N406})] on Au| LB-Molecule| Au Devices. *Dalton Transactions*, **2018**, 47, 14352-14361.
- Weeraratne, A. D. K. I.; Hewa-Rahinduwage, C. C.; Gonawala, S.; Luo, L.; Verani, C. N., A Molecular Approach for Mitigation of Aluminum Pitting based on Films of Zinc(II) and Gallium(III) Metallosurfactants. *Chemistry – A European Journal*, **2019**, 25, 14048-14053.
- Weeraratne, A. D. K. I.; Hewa-Rahinduwage, C. C.; Luo, L.; Verani, C. N., Electrochemical Quantification of Corrosion Mitigation on Iron Surfaces with Gallium(III) and Zn(II) Metallosurfactants. *Langmuir*, **2020**, 36, 14173-14180.
- Weeraratne, A. D. K. I., Rani, N., Amunugama, S., Perera, S. S., Kpogo, K. K., Mazumder, S. and Verani, C. N., Influence of Electronic Configurations on the

Modulation of Fermi/Orbital Junction Energies for Directional Electron Transport through 3d1, 3d3, and 3d5 Metallosurfactants. *The Journal of Physical Chemistry C*, **2022**, 126(49), pp.21010-21021.

SELECTED PRESENTATIONS

- “Towards Current Rectification: Nanoscale Electronic Devices Based on Langmuir-Blodgett Films of Phenolate-based Homobimetallic Iron(III) Complex” American Chemical Society National Meeting and Expo, Philadelphia, USA. Mar. 2020, *Oral presentation*
- “Nanoscale Rectifying Devices and Corrosion Mitigation Coatings Based on Langmuir-Blodgett Films of Metallosurfactants” Inorganic Chemistry Seminar Series, Wayne State University, Detroit, MI, USA. Jan. 2020, *Oral presentation*
- “Development of Molecular Rectifiers Using Langmuir-Blodgett Films of Phenolate-rich Metal-containing Surfactants” NOBCChE 46th Annual Meeting, St Louis Union Station, MO, USA. Nov. 2019, *Oral presentation*
- “Towards molecular rectification: nanoscale devices based on Langmuir-Blodgett monolayers of asymmetric oxovanadium(IV) and chromium(III) complexes” ACS 48th Central Regional Meeting, Dearborn, MI, USA. Jun. 2017, *Poster presentation*
- “Determination of Radioactive Iodine Contamination in Environmental Samples near National Cancer Institute, Maharagama” Nineteenth International Forestry and Environment Symposium, Sri Lanka, Oct. 2014, *Oral presentation*

FELLOWSHIPS/AWARDS

- Received Esther and Stanley Kirschner Graduate Award (Top overall graduate student in Inorganic Chemistry) **Apr. 2021**
- Received Summer Dissertation Fellowship **May. 2020 - Aug. 2020**
- Received Thomas C. Rumble Graduate Fellowship **Jul. 2019 - Apr. 2020**
- Member of NOBCChE committee which won Wayne State University Champions of Diversity and Inclusion Team Award **Mar. 2019**
- High Distinction at Australian National Chemistry Quiz **Jul. 2007**

LEADERSHIP POSITIONS AND PROFESSIONAL DEVELOPMENT

- Guest talk at a session dedicated to the Women Chemists Committee at the Annual Sessions of the Institute of Chemistry Ceylon 2023 **Jun.2023**
- Member of American Chemical Society (ACS) **Jun. 2016 - Present**
- Member of the organizing committee of ACS graduate student symposium planning committee **Mar. 2021**
- Treasurer of NOBCChE organization, Wayne State University **Feb. 2019 - Nov. 2020**
- Lab safety officer, Verani lab, Wayne State University **Jan. 2019 - Dec. 2019**
- Member of the organizing committee of “Preparing for Life After Graduate School” workshop **May. 2019**
- Invited speaker for Graduate School Panel at Wayne State University **Aug. 2019**

- Member of the organizing committee of International Symposium on Polymer Science and Technology (IIUPST) organized by Department of Chemistry, University of Sri Jayewardenepura, Sri Lanka **Jul. 2012**

RESEARCH GRANTS

- **NSF 2023- Awarded,** **University of Sri Jayewardenepura**
 Role: PI Amount: Rs. 28 M Duration: Two-years
 Project: Development of Anticorrosive Surface Coatings Utilizing Redox-Innocent Metal Complexes

VOLUNTEER EXPERIENCE

- Assistant Editor Special Issue Current Scientia (Vidyodaya Journal of Science) **Jan. 2023 – Dec 2023**
- Served as a judge at the CLAS Undergraduate Research Symposium, Wayne State University **Feb. 2020**
- Volunteer GED science tutor at Southwest Solutions Adult Learning Lab **Aug. 2018 - Jul. 2019**
- Volunteer lab assistant at 20th ACS Annual Rouge River Water Festival **May. 2018**

REFERENCES

- **Prof. Sudantha Liyanage**
 Senior Lecturer
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 Faculty of Applied Sciences
 University of Sri Jayewardenepura, Nugegoda, Sri Lanka.
- **Prof. Claudio Verani**
 Associate Dean for Research and Space
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 Department of Chemistry
 Wayne State University
 5101 Cass Ave, Detroit, MI, USA.
- **Dr. Pahan Godakumbura**
 Senior Lecturer
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 Faculty of Applied Sciences
 University of Sri Jayewardenepura, Nugegoda, Sri Lanka.