Curriculum Vitae

Dr. Nadeesha Rathuwadu

SLINTEC, Nanotechnology and Science Park, Mahenwatte, Pitipana, Homagama, Sri Lanka.

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Present Positions

- Research Fellow 2017 – Present
  SLINTEC, Nanotechnology and Science Park, Mahenwatte, Pitipana, Homagama, Sri Lanka.

- Senior Lecturer II 2017 – Present
  SLINTEC Academy, Nanotechnology and Science Park, Mahenwatte, Pitipana, Homagama, Sri Lanka.

Academic Qualifications

- Ph.D. in Chemistry 2012 – 2016
  University of Iowa, USA

  Thesis Advisor – Dr. Johna Leddy
  Thesis Title: Magnetic Field Effects on Electrochemical Systems, Lanthanide Electrochemistry, Thin Layer Sonoelectrochemistry and Models for Polymer Film Characterization

- B.Sc. (Special) Degree in Chemistry 2007 – 2011
  University of Colombo, Sri Lanka

  Thesis Advisor – Prof. K. R. R. Mahanama
  Thesis Title: Assessing the Exposure to the Photochemical Smog in Colombo and Its Suburbs

Research Experience

- Research Areas
  - **Electrochemistry**
  - Inorganic Synthesis and Characterization, Separation, Environmental Chemistry

- Techniques and Skills - Voltammetric techniques (LSV, CV, LSSV), EIS, RDE, NMR, Mass Spectrometry, UV – Vis, IR, Inert Atmosphere Techniques (Schlenk Lines, Glove Box), LC-MS/MS, GC-MS

1. SLINTEC, Research Fellow (2017 - Present)

    - Electrochemistry – Lead Acid Battery, Photoelectrochemistry, Supercapacitors, Superhydrophobic surfaces

2. University of Iowa, Department of Chemistry, Graduate Research Assistant (2012 - 2016)

    Thesis Advisor – Dr. Johna Leddy

    - Electrochemistry – Electroanalytical characterization of polymer films, Models for polymer film characterization, Magnetic field effects on electrochemical systems (Magnetoelectrocatalysis), Lanthanide electrochemistry, Thin layer sonoelectrochemistry

3. University of Colombo, Undergraduate Research Project (2010 – 2011)

    Thesis Advisor – Prof. K. R. R. Mahanama

    - Environmental Chemistry

Teaching Experience

1. University of Iowa, Department of Chemistry, Graduate Teaching Assistant (2012 - 2014)

    - Analytical Measurements (Spring 2014) - Advanced laboratory course for chemistry major undergraduates that includes experiments and instrument handling for various analytical methods, qualitative and quantitative data analysis, understanding sources and statics of error, and presentation of results. Conducted laboratory sessions, office hours, graded reports, and proctored examinations.

    - Physical Measurements (Fall 2013, 2012) - Advanced laboratory course for chemistry major undergraduates that includes experiments and instrument handling related to various physical chemistry related concepts, qualitative and quantitative data analysis, understanding sources and statics of error and presentation of results. Conducted laboratory sessions, office hours, graded reports, and proctored examinations.

    - Principles I Lab Sessions (Spring 2013) – Fresh-man level laboratory course. Conducted laboratory sessions, office hours, graded reports, and proctored examinations.

2. University of Colombo, Department of Chemistry, Demonstrator (October 2011 – June 2012)

    - First Year Lab and Tutorial

        Conducted first year undergraduate chemistry laboratory and first year chemistry tutorial discussions and invigilated examinations

Mentoring Experience

1. Co-advisor (Research), MPhil, SLINTEC Academy (October 2017 - Present)
2. Student Mentor (Research), Undergraduate, University of Iowa (Fall 2015 – Fall 2016)
3. Student Mentor (Research), Secondary Student Training Program, University of Iowa (Summer 2015)

Awards and Grants

1. Woman of Innovation Award Finalist, Collegian Innovation and Leadership Category, The Technology Association of Iowa (2016)
2. University of Iowa Graduate Student Senate Travel Award (2016)
3. Electrochemical Society Travel Grant (2016)
4. University of Iowa Department of Chemistry Travel Award (ACS National Meeting) (2016)
5. University of Iowa Department of Chemistry Travel Award (ECS PRiME International Meeting) (2016)
6. University of Iowa Graduate College Summer Fellowship (2016)
7. Institute of Chemistry Merit Award for the performance at the GIC Examination (2007, 2008)
8. Institute of Chemistry Entrance Scholarship Merit Award (2006)

Publications and Patents

1. U. G. Mihiri Ekanayake, **N. Rathuwadu**, M. M. M. G. P. G. Mantilaka, R. M. G. Rajapakse, "Fabrication of ZnO nanoarchitectured fluorine-free robust superhydrophobic and UV shielding polyester fabrics for umbrella canopies", *RSC Advances.*, 2018, **8**, 31406.
2. J. Leddy, **N. P. W. Rathuwadu**, Carbon dioxide reduction and carbon compound electrochemistry in the presence of lanthanides, U.S. Patent Application 62403992, Filed 05.04.2018.
3. W. L. Gellett, K. L. Knoche, **N. P. W. Rathuwadu**, and J. Leddy , "Electron Hopping of Tris (2,2'-bipyridyl) Complexes $M(bpy)_3^{2+/3+}$ in Nafion", *Journal of the Electrochemical Society* (2016) **163** (7) H1-H10.

Presentations

1. *Charge Compensation in Nafion and Thin Layer Sonoelectrochemistry*, Final Thesis Defense, Public Seminar, University of Iowa (December 2016)
2. *Lanthanide Voltammetry: Electrocatalysis and Electrochemistry in Acetonitrile*, **Talk**, Fall International PRiME Meeting of Electrochemical Society, Hawaii (October 2016)
3. *Thin Layer Sonoelectrochemistry in Aqueous and Non-Aqueous Systems*, **Poster**, Fall International PRiME Meeting of Electrochemical Society, Hawaii (October 2016)
4. *Charge Compensation in Nafion*, Competitively selected for Sci-Mix meeting-wide **Poster** presentation of top 10% of all the abstracts at the meeting, Fall National Meeting of American Chemical Society, Philadelphia (August 2016)
5. *Charge Compensation in Nafion*, **Talk**, Fall National Meeting of American Chemical Society, Philadelphia (August 2016)
6. *Nafion Activity Model, Carbon Dioxide Reduction with Lanthanides and Magnetic Field Effects on Hydride Storage in Palladium*, Three Month Seminar (Pre-defense), Analytical Chemistry Divisional Seminar, University of Iowa (April 2016)

7. *Magnetic Field Effects on Hydride Storage in Palladium*, **Talk**, Jakobsen Conference, The University of Iowa (March 2016)
8. *Activity of Nafion*, **Poster**, Spring National Meeting of Electrochemical Society, Chicago (May 2015)
9. *A Model for Activity of Nafion*, **Talk**, Jakobsen Conference, The University of Iowa (March 2015)
10. *Activity of Nafion*, **Poster**, Electrochemical Society Twin Cities Section Symposium, Minnesota (October 2014)
11. *Activation of Dioxygen with Transition Metal Complexes*, Inorganic Chemistry Divisional Seminar, University of Iowa (October 2013)
12. *Semiconductor Nano Wires for Energy Conversion*, Public Seminar for Partial Fulfilment of The requirements for the degree of B.Sc. (Special) Degree in Chemistry, University of Colombo (October 2010)

Published Abstracts

1. *Lanthanide Magnetoelectrocatalysis: Studying Electrocatalytic Effects of Various Lanthanide Triflates As Related to Their Magnetic Properties*, **K.L. Knoche**, D. Parr, N. Rathuwadu, J. Leddy, **Invited Talk**, Fall International AiMES Meeting of Electrochemical Society, Mexico (October 2018)
2. *Evidence of a Magnetic Effect on the Electron Transfer of the Hydrogen Evolution Reaction (HER)*, K.L. Knoche, H.C. Lee, N. Rathuwadu, **J. Leddy**, **Talk**, Fall International AiMES Meeting of Electrochemical Society, Mexico (October 2018)
3. *Electrochemically Silent Films on Electrodes – Mean and Methods in Electroanalysis*, **J. Leddy** K. L. Knoche, and N. Rathuwadu, **Invited Talk**, Meeting of International Society of Electrochemistry, Rohde Island (August 2017)
4. *An Activity Model for Swelling of Nafion® in Varied Solvents*, **J. Leddy** and N. Rathuwadu, **Talk**, Spring National Meeting of Electrochemical Society, New Orleans (May 2017)
5. *Evidence for Magnetic Effects on Electron Transfer*, H. C. Lee, W. L. Gellett, S. D. Minteer, K. L. Knoche, N. Rathuwadu, and **J. Leddy**, **Invited Talk**, Spring National Meeting of Electrochemical Society, New Orleans (May 2017)
6. *A Systematic Study of* $M(bpy)_3^{z+}$ *Complexes in Nafion: Concentration, Activity, and Electron Hopping*, W. L. Gellett, K. L. Knoche, N. Rathuwadu, and **J. Leddy**, **Talk**, Fall International PRiME Meeting of Electrochemical Society, Hawaii (October 2016)
7. *Nafion: A Thermodynamic Sketch*, N. Rathuwadu, and **J. Leddy**, **Talk**, Spring National Meeting of Electrochemical Society, San Diego (May 2016)
8. *Fabrication of Smart Umbrella Canopy with Superhydrophobic Property*, **U. G. M. Ekanayake**, M. M. M. G. P. G. Mantilaka, N. Rathuwadu, K. M. Nalin de Silva, University of Uva Wellassa (2017)
9. *Effect of Thin Layer Sonoelectrochemistry on Palladium Hydride Storage*, **P. Dey**, N. Rathuwadu, J. Leddy, **Poster**, Fall Undergraduate Research Conference, University of Iowa (December 2016)
10. *Solvent Effects on Thin Layer Sonoelectrochemistry*, **P. Dey**, N. Rathuwadu, J. Leddy, **Poster**, Summer Undergraduate Research Conference, University of Iowa (July 2016)
11. *Thin Layer Sonoelectrochemistry in Aqueous and Non-Aqueous Systems*, **P. Dey**, N. Rathuwadu, J. Leddy, **Poster**, Spring Undergraduate Research Festival, University of Iowa (April 2016)
12. *Magnetic Effects on Hydride Storage in Palladium*, **D. Veerapaneni**, N. Rathuwadu, J. Leddy, **Poster**, Secondary Student Training Program Poster Presentation, University of Iowa (July 2015)

Professional Affiliations

1. Member of American Chemical Society (2016 – Present)
2. Member of Electrochemical Society (2014 – Present)
3. Member of Electrochemical Society Student Chapter of University of Iowa (2014 – 2016)
4. Associate Member of Institute of Chemistry (A. I. Chem. C.), Sri Lanka (2010 – Present)
5. Member of Chemical Society, University of Colombo (2009 – 2011)