SUNETH RAJAPAKSHA (PH.D.)

62/1 A, Koswattegoda Road,
Matugama, Sri Lanka

suneth@sjp.ac.lk
0703301300

06/2016 to present **Senior Lecturer Gr. II**
Department of Chemistry
University of Sri Jayewardenepura
Gangodawila, Nugegoda
Sri Lanka.
http://science.sjp.ac.lk/che/dr-suneth-rajapaksha-2

Teaching Responsibilities:

CHE 341 1.0	Colloids and Nanochemistry
CHE 465 1.0	Biophysical Chemistry
CHE 495 1.0	Principles and Practices of Optical and Electron Microscopy
ICH 357 1.0	Introduction to Bioinformatics and Computational Biology
ICH 367 2.0	Microscopic and Scattering Techniques
CHE 315 2.0	Organic Chemistry Practical (3rd year)
IAC 509 2.0	Analytical Tools for Nanoscience
MPST 527 1.0	Modeling and Simulations

Research Interests:

- Molecular dynamics simulations of biological macromolecules and systems.
- Molecular dynamics simulations of nanoparticles.
- Kinetic simulations of biological pathways.
- Green synthesis of nanoparticles.

Research Grants:

1. ASP/01/RE/SCI/2017/18
   MD Simulations Study of Dengue Virus Capsid protein Mediated Cell Infections
   Start date: 10/03/2017 End date: 09/03/2020
   Amount: Rs. 1500000.00

2. ASP/01/RE/SCI/2017/19
   Anti-Cancer Activity of Garcinol Capped Silver Nanoparticles
   Start date: 10/03/2017 End date: 09/03/2020
   Amount: Rs. 1800000.00

EDUCATIONAL BACKGROUND

01/2015 to 04/2016 **Postdoctoral Fellow**
Department of Pharmacology and Toxicology
Health Science Campus (Medical College of Georgia)
Augusta University
Augusta, GA 30912 USA
Advisor: Prof. Nevin Lambert, Ph.D.

05/2012 to 12/2014 **Postdoctoral Fellow**
Center for Petroleum and Geosystems Engineering
Cockrell School of Engineering
The University of Texas at Austin
Austin, TX 78712 USA
Advisor: Prof. Gary Pope, Ph.D.

08/2006 to 04/2012 **Ph.D.** in Chemistry
Center for Photochemical Sciences
Department of Chemistry
Bowling Green State University
Bowling Green, OH 43403 USA
Advisor: Prof. H. Peter Lu, Ph.D.

Thesis Title: *Single Molecule Spectroscopy Studies of Membrane Protein Dynamics and Energetics by Combined Experimental and Computational Analyses*.
https://scholarworks.bgsu.edu/photo_chem_diss/52/

08/1999 to 01/2004 **B.Sc.** (Chemistry Honors-2nd class upper)
Department of Chemistry
University of Sri Jayewardenepura
Gangodawila, Nugegoda, Sri Lanka
Research Advisor: Prof. P. M. Jayaweera, Ph.D.

TEACHING EXPERIENCE

- 2016-present Senior Lecturer Gr. II in Department of Chemistry, University of Sri Jayewardenepura, Nugegoda, Sri Lanka.
- 2006-2007 Teaching Assistant in Department of Chemistry, Bowling Green State University, Bowling Green, OH, USA (Introductory Chemistry).
- 2004-2005 Teaching Assistant in Department of Chemistry, University of Sri Jayewardenepura, Nugegoda, Sri Lanka (Physical Chemistry).

EXTRA ACTIVITIES

- Department Coordinator-Extended Degree Program 2016-2017
- Department Coordinator-Extended Degree Program 2019-Present
- Department representative-Faculty Quality Assurance Cell 2017-2019
- Coordinator-Physical Chemistry Moderation Panel 2016-2019

RESEARCH EXPERINCE

- **Department of Pharmacology and Toxicology, Health Science Campus Augusta University, Augusta, GA USA**
  Post-doctoral research conducted with Prof. Nevin Lambert. G protein coupled receptor signaling in neurons. The similarities and differences in G-protein mediated calcium release from inter-cellular stores in cell body, dendrites and axon.

- **Center for Petroleum and Geosystems Engineering, Cockrell School of Engineering, The University of Texas at Austin, Austin, TX USA**
  Post-doctoral research conducted with Prof. Gary Pope. Investigation of applicability of different synthetic and bio polymers to satisfy the mobility requirement needed in tertiary oil production. Restoration of reservoir cores to their original reduced state for chemical flooding tests.

- **Center for Photochemical Sciences/Department of Chemistry, Bowling Green State University, Bowling Green, OH USA**
  Doctoral dissertation research conducted with Prof. Peter Lu. Pioneering studies in correlating electrophysiology and optical imaging on horizontal lipid bilayers. Computational modeling and simulations to investigate the membrane proteins dynamics (ion channel proteins and light harvesting complexes).

- **Department of Chemistry, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka**
  Undergraduate research conducted with Prof. P. M. Jayaweera. The influence of the second cationic dye to enhance the photovoltaic efficiency of dye-sensitized solar cells.

AREA OF EXPERTISE:

- Molecular dynamics simulations
- Nanoparticle synthesis
- Single-molecule microscopy and spectroscopy
- Time correlated single photon counting (TCSPC)
- Fluorescence resonance energy transfer (FRET)
- Electrophysiology
- Formation of artificial suspended lipid bilayers
- Live cell imaging

COMPUTER SKILLS

- **Programming languages:**
  - MATLAB/OCTAVE
  - LABVIEW
  - BASH

FELLOWSHIPS AND AWARDS

- 2008-2012 Research Fellowship from Department of Chemistry, Bowling Green State University, Bowling Green, OH
- 2007-2008 McMaster Fellowship from Department of Chemistry, Bowling Green State University, Bowling Green, OH (Awarded for the highest GPA in the first year of graduate studies 4/4)
- 2002-2003 CIC Award from Department of Chemistry, University of Sri Jayewardenepura, Nugegoda, Sri Lanka (Awarded jointly with CIC Sri Lanka (Pvt.) Ltd. for the highest GPA in the third year of the undergraduate studies)

EMPLOYMENT HISTORY

- 03/2005-10/2005 Junior Quality Assurance Executive- Lanka Walltile (Pvt.) Ltd., Sri Lanka
- 11/2005-07/2006 Assistant Government Analyst- Government Analyst's Department, Sri Lanka

PUBLICATIONS

- **Rajapaksha, S.P.***; Upahari, S., Anti-Correlated Position Fluctuation of Lipids in Forming Membrane Water Pores: Molecular Dynamics Simulations Study with Dengue Virus Capsid Protein-**Submitted** (**Corresponding Author*)

- Lakmal, J. T. H.; **Rajapaksha, S.P.***, The Impact of Endoplasmic Reticulum Calcium Concentration on Transient Calcium Response in Phospholipase C pathway: A Simulation Study. *JSLASS* **2019**, *2*, 4-13. (**Corresponding Author*)

- Fernando, H.N.; Kumarasinghe, K.G.U.R.; Gunasekara, T.D.C.P.; Wijekoon, H.P.S.K.; Ekanayaka, E.M.A.K.; **Rajapaksha, S.P.***; Fernando, S.S.N.; Jayaweera, P.M., Synthesis, Characterization and Antimicrobial Activity of Garcinol Capped Silver Nanoparticles. *J Microbiol Biotechnol.* **2019**, *29*, 1841-1851. (**Corresponding Author*).

- **Rajapaksha, S.**; Pal, N.; Zheng, D.; Lu, H.P. Protein-fluctuation-induced water-pore formation in ion channel voltage-sensor translocation across a lipid bilayer membrane. *Phys. Rev. E* **2015**, *92*, 052719.

- **Rajapaksha, S.**; Britton, C.; McNeil, R.; Kim, D. H.; Unomah, M.; Kulawardana, E.; Upamali, N.; Weerasooriya, U.; Pope, G. A., Restoration of Reservoir Cores to Reservoir Condition before Chemical Flooding Tests. SPE Improved Oil Recovery Symposium, 12-16 April **2014**, Tulsa, Oklahoma, USA **(**SPE 169887)

- **Rajapaksha, S.**; Wang, X.; Lu, H. P., Suspended Lipid Bilayer for Optical and Electrical measurements of Single Ion Channel Proteins. *Anal. chem.* **2013**, *85*, 8951-8955.

- **Rajapaksha, S**.; He, Y.; Lu, H. P., Combined Topographic, Spectroscopic, and Model Analyses of Inhomogeneous Energetic Coupling of Linear Light Harvesting Complex II Aggregates in Native Photosynthetic Membrane. *Phys. Chem. Chem. Phys.* **2013**, *15*, 5636-5647.

- He, Y.; Zeng, X.; Mukherjee, S.; **Rajapaksha, S**.; Kaplan, S.; Lu, H. P., Revealing Linear Aggregates of Light Harvesting Antenna Proteins in Photosynthetic Membrane. *Langmuir* **2010,** *26*, 307-313.

- Jayaweera, P; **Rajapaksha, S**.; Tennakone, K., TiO_2 nano-porous photoelectrochemical cells (PECs) sensitized with mixed cationic/anionic dye systems: Role of the second cationic fluorescent dye on the photocurrent enhancement. *Chem. Phys. Lett.* **2005,** *412*, 29-34.

- Jayaweera, P.; Pathiraja, C.; **Rajapaksha, S**., Light Scattering Intensity and Viscosity Correlation for the Letters Printed on the Tobacco Cigarettes. *Sri Lankan Journal of Physics* **2005**, *6*, 1-6.

OTHER PUBLICATIONS

1. Oral Presentation on "The effect of temperature and salt concentration on the stability of dengue virus capsid protein: A molecular dynamics simulations study" at the 76th annual session of Sri Lanka Association for the Advancement of Science (December 2020), Page No. 102.
Authors: Walgampaya, HMSN, **Rajapaksha SP.**

2. Oral Presentation on "Molecular dynamics simulations study of membrane deformations by combined effects of membrane potential and protein concentration" at the 76th annual session of Sri Lanka Association for the Advancement of Science (December 2020), Page No. 100.
Authors: Vishwabhanu, NAPGD, **Rajapaksha SP.**

3. Poster presentation on "Antimicrobial activity of acemannan-silver nanoparticle assembly" at the International Conference on Health Sciences, Sri Lanka (October 2019), Page No: 162.
Authors: Gunapala AHMHPW, Peiris MMK, Gunasekara TDCP, **Rajapaksha SP.**

4. Oral Presentation on "Synthesis, Characterization and Antimicrobial Activity of Garcinol Coated Titanium Dioxide Nanoparticles" at the International Conference on Health Sciences, Sri Lanka (October 2019), Page No. 71.
Authors: Fernando HN, Kumarasinghe UR, Gunasekara TDCP, Fernando SSN, Jayaweera PM, Soysa P, **Rajapaksha SP.**

5. Poster presentation on "Evaluation of antimicrobial activity of silver nanoparticles capped with garcinol, extracted from Garcinia quaesita pierre" at the 74th Annual session of Sri Lanka Association For the Advancement of Science (December2018), Page No: 117.

Authors: Fernando HN, Kumarasinghe UR, Gunasekara TDCP, Fernando SSN, Jayaweera PM, **Rajapaksha SP.**

Awarded as the BEST POSTER PRESENTATION at the 74th annual sessions of Sri Lanka Association for the Advancement of Science (SLAAS) under section E3 – chemical sciences

6. Poster presentation on "The effect of ER calcium concentration on transient cytosolic calcium response in phospholipase-C pathway: a simulation study" at the International Conference on Health Sciences, Sri Lanka (October 2018), Page No: 76.
Authors: Lakmal JTH, **Rajapaksha SP.**

7. Poster presentation on "Determination of the Antimicrobial and Antioxidant Activity of Garcinol Capped Silver Nanoparticles" at the International Conference on Health Sciences, Sri Lanka (October 2018), Page No: 118.
Authors: Fernando HN, Kumarasinghe UR, Gunasekara TDCP, Fernando SSN, Jayaweera PM, **Rajapaksha SP.**

8. Probing Single-Molecule Ion Channel Dynamics by Combined Patch-Clamp Single-Molecule Fret Imaging Microscopy. *Biophysical Journal* **2011**, 100, 5a.
Authors: **Rajapaksha, SP**, and Lu, HP

9. Correlated AFM-Spectroscopy Imaging of Linear Light Harvesting Protein Aggregates in Bacterial Native Photosynthetic Membrane. *Biophysical Journal* **2012**, 102, 166a-167a.
Authors: **Rajapaksha, SP**, He, Y, and Lu, HP

PERSONAL INFORMATION

- Date of birth : 31st January 1978
- Gender : Male
- Marital Status : Married

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Date Signature