

CURRICULUM VITAE

HMAMC Herath

Professor in Chemistry (From 2016)

Department of Physical Sciences, Faculty of Applied Sciences, Rajarata University of Sri Lanka +94 25 2266129 (off), +94 77 4692681 (mobile)

RESEARCH PROFILE

My current and future research projects reflect my strong interest in a broader research area in Electrochemical Technology in Water treatment, Electrocatalysts, Advanced Oxidation Processes in destruction of Pollutants in water, Material chemistry. Analytical chemistry, Photochemistry, and Nanotechnology.

EDUCATION

Ph.D. in Chemistry, University of Peradeniya, Sri Lanka. 2005

PROFESSIONAL AFFILIATIONS

Member of the Royal Society of Chemistry, (MRSC) U.K
Fellow of the Institute of Chemistry, Sri Lanka (F.I. Chem. C.)
Chartered Chemist (C. Chem.), Institute of Chemistry, Sri Lanka

VISITING FACULTY & POSTDOCTORAL RESEARCH

VATAT- Post-doctoral Research fellow, Department of Chemistry, Ben-Gurion University, Beer-Sheva, Israel, 2006-2007.

Research scientist- Department of Chemistry, Ben-Gurion University, Beer-Sheva, Israel, 2011 and 2013

Research Professor- ,Dept. of chemistry, Hebrew University, Jerusalem, Israel, 2018

ACADEMIC HONOURS

Presidential Award for Peered Research. 2005

Presidential Award for Peered Research. 2006

Presidential Award for Peered Research. 2009

ACADEMIC APPOINTMENTS

Coordinator: Chemistry undergraduate program, Department of Physical Sciences. 2015- to date

Coordinator: Environmental Science and Technology Degree program, Physical Sciences. 2014- 2017

Administrative Head of the Department of Physical Sciences, Faculty of Applied Sciences. 2012-2014:

Coordinator: Chemistry undergraduate program, Department of Physical Sciences. 2010- 2011:

Senior lecturer in Chemistry, University of Peradeniya, Sri Lanka. 2007-2008

COURSES TAUGHT

Undergraduate

1st Year: CHE 1302 Physical Chemistry I (Electrochemistry, Thermodynamics, Kinetic Molecular Theory of Gases), CHE 1203 Organic chemistry I. **2nd Year:** CHE 2301 Physical Chemistry II (Chemical Kinetics, Phase equilibria, Surface Chemistry), CHE 2204 Physical chemistry lab. **3rd Year:** CHE 2103 Analytical Chemistry I, CHE 3212 Solid state Chemistry, CHE 3206 Theoretical fundamentals of chemical industry. CHE 3207 Electrochemistry, CHE 3217 Advanced Inorganic Chemistry Laboratory, CHE 3216 Advanced Physical Chemistry Laboratory. **4th Year:** CHE 4204 Photochemistry, PHY 4208 Characterization Techniques, CHE 4213 Molecular and Surface Spectroscopy, CHE4213 Advanced Physical Chemistry I, CHE 4315 Advanced Physical Chemistry II (Quantum Chemistry, Advanced Reaction Kinetics, Statistical Thermodynamics)

Postgraduate M.Sc in Environmental Nanotechnology, PGIS, University of Peradeniya

POSTGRADUATE RESEARCH STUDENT- SUPERVISION

Ph.D

Mr. H.D.N.S. Fernando, Rajarata University of Sri Lanka. 2011-2015

Mr. H.T.D. Madushanka, Wayamba University of Sri Lanka, Kuliypitiya (Thesis submitted)

M.Phil

Miss. Jayani Halpegama, University of Peradeniya, (Thesis submitted)

Miss Dilani Chandima, Rajarata University of Sri Lanka (In Progress, Started 2019)

Miss. Kumari Hansima, University of Peradeniya, Sri Lanka (In Progress, Started 2019)

Miss. Sriyani Gamage , Rajarata University of Sri Lanka (In Progress, Started 2019)

Mrs. Isuri de Silva, Rajarata University of Sri Lanka, 2015-2018

M.Sc

Mr. Umesh Chaturanda ,University of Peradeniya. 2015-2016

Mrs. N.D. Jayakody (M.Sc.), University of Peradeniya. 2013-2014

Mrs. P.N.S. Jayawardana (M.Sc.) University of Peradeniya. 2013-2014

Mr. I.S. Irshad (M.Sc.) University of Peradeniya. 2014-2015

Mr. U. Chaturanga (M.Sc.) University of Peradeniya. 2015-2016

AWARDS FOR RESEARCH OR INNOVATIVE PROJECTS

Source: National Research Council-(2015/20) NRC TO Grant 16-015

Title: Development of a Model Treatment Facility for Remediation of Total Dissolved Solids and Fluoride in Groundwater – A Sustainable Solution for Dry Zone Drinking Water Problems ”.

Source: National Research Council (11-196)

Title: Fabrication of efficient low cost photo-electrochemical solar cells using novel gel/solid polymer electrolytes and modifying the photo-electrode

Source: National Research Council (2015/20)

Title: Studies on the effect of Gamma irradiation in quality and safety of fish products

Source: Rajarata University (2015/R/05)

Title: Electrochemical and Computational analysis of light harvesting organic molecules

SCHOLARLY CONTRIBUTIONS IN PEER-REVIEWED JOURNALS (selected)

1. Tatiana Golub-Sedinkin, **Ajith C. Herath**, Robert West, and James Y. Becker, Electrochemical Properties of 9,9'-*Spiro*-Bifluorenes Containing Group 14 Elements (C, Si, Ge, Sn), *Chem Electro.Chem* 2019, 6, 1–6
2. H.T.D.S. Madusankaa,, **H.M.A.M.C Herath**, C.A.N. Fernando, High photoresponse performance of self-powered n-Cu₂O/p-CuIheterojunction based UV-Visible photodetector, *Sensors and Actuators A* 296 (2019) 61–69
3. N.W.P. . Perera, **Ajith C. Herath**, Chamila Gunathilake, C. A. N. Fernando, C. S. Kalpage, Methylene blue adsorption onto surface modified beli (Aegle marmelos)fruit shell biochar, *Biomed J Sci & Tech Res* 11(5)-2018
4. T.M.W.J. Bandara, D.G.N. Karunathilaka, J.L. Ratnasekera, L. Ajith DeSilva, **A. C. Herath**, B.-E. Mellander, Electrical and Complex Dielectric Behaviour of Composite Polymer Electrolyte based on PEO, Alumina and Tetrapropylammonium Iodide, *Ionics*, 2017, 1-11.
5. S.A.K.M. Dhanasekaraa,, A.N.B. Attanayake , **Ajith C. Herath**, N. Nanayakkara, A. Senaratne, S.P. Indrarathne, Rohan Weerasooriya, Partial degradation of carbofuran by natural pyrite, *Environmental Nanotechnology, Monitoring & Management*, 2015, 4, 51-57

6. **Ajith C. Herath**, Robert West, James Y. Becker, Anodic properties of silafluorenes *J. Electroanal. Chem.* 2014, 728, 118-122.
7. **Ajith C. Herath**, Veranja Karunaratne, R.M.G. Rajapakse, Anura Wickramasinghe Electrochemical investigation of the new dyad of the Zn²⁺ derivative of meso-5-(4-hydroxyphenyl)-10, 15, 20- tris (4-methoxyphenyl) porphyrin and meso-5-(4-hydroxyphenyl)-10,15,20- trisphenylporphyrin points to photoinduced electron transfer. *J.Natn.Sci.Foundation Sri Lanka.* 2012, 40(2):149-156,
8. **Ajith C. Herath**, James Y. Becker., Electrochemical study of tris(4-bromophenyl)amine and 2,2,6,6-tetramethylpiperidine-1-oxyl in room-temperature ionic liquids. *ElectrochimicaActa* 55 ,2010, 8319–8324.
9. **Ajith. C. Herath**, R.M.G Rajapakse, Anura Wicramasinghe and Veranja Karunaratne, Photodegradation of Triphenylamino Methane (Magenta) by Photosensitizer in Oxygenated Solutions. *Environ. Sci. Technol.*, 2009, 43 (1), pp 176–180
10. **Ajith C. Herath.**, James Y. Backer., 2,2,6,6-tetramethyl piperidine-1-oxyl (TEMPO) mediated catalytic oxidation of benzyl alcohol in acetonitrile and ionic liquid 1-butyl-3-methylimidazoliumhexafluorophosphate [BMIm][PF₆]: kinetic analysis. *Electrochimica.Acta*, 2008. 53, 4324
11. **Ajith C. Herath.**, James Y. Backer., Kinetics of redox mediator, tris(4-bromophenyl) amine in acetonitrile and ionic liquid [BMIm][PF₆]: Oxidation of benzyl and cyclohexyl alcohols. *J. Electroanal. Chem.* 2008, 619-620, 98.
12. **Ajith Herath.**, Namal Priyantha, Gamini Rajapakse, Veranja Karunaratne and Anura wickramasinghe, Porphyrin-sensitized photo-oxidation of hematoxylin in oxygenated solutions. *J. Natn. Sci. Foundation.* 35 (4), 239-244, 2007.
13. **Ajith M. C. Herath**, R. M. Gamini Rajapakse*, Veranja Karunaratne, Anura Wickramasinghe, Electrochemical Investigation of Superoxide Scavenging Ability of 1,2,3-triketohydrindene hydrate in Aprotic Solvents, *Electrochimica Acta*, 51, 2006, 2890-2897.
- 14.V. Karunaratne, A. Wickramasinghe, **A.M.C. Herath**, P. H. Amarasinghe, and S. H. P. P. Karunaratne G. Rajapakse, Phototoxic effect of some porphyrin derivatives against the larvae of *Aedes aegypti*, a major vector of dengue fever, *Current Science*, **89** (1), 170-173, 2005

ABSTRACTS AND RESEARCH COMMUNICATIONS

2019

1. M.G.G.S.N.Thilakarathna, W.P.S.L. Wijesinghe , R.B.S.D. Rajapakse, C.A. Thennakoon, M.M.M.G.P.G. Mantilaka ^c, **H.M.A.M.C. Herath**, R.M.G. Rajapakse, Synthesis of Hydroxyapatite Magnesium Oxide Nanocomposites from Naturally Occurring Dolomite and Their Antimicrobial Activity, International Research Conference, *Rajarata University of Sri lanka*, 2019
2. **Ajith C. Herath**, Sujoy Sarkar, Daniel Mandler, Nano to Nano: Electrodeposition of ZnO Nanoparticles using Scanning Electrochemical Microscopy, International Research Conference, Rajarata University of Sri lanka, 2019
3. Ganga Ekanayake, Lalith Jayasinghe, **Ajith C. Herath**, Cyanidin dye Isolated from Mangosteen Peel Waste: Higher Performance Efficiency in Dye-Sensitized Solar Cells, International Research Conference, Rajarata University of Sri lanka, 2019
4. Sajeewani Somaratne, Asoka. Kumara, **Ajith C. Herath**, D-131 dye -Sensitized Solid-State Solar Cells, International Research Conference, Rajarata University of Sri lanka, 2019
5. Ruwani Thakshila, Dinu Sri Madusanka, **Ajith C. Herath**, Nandena Fernando, High Photoresponse 5,10,15-tris(phenyl)-20-(4-hydroxyphenyl)porphyrin Sensitized n-Cu₂O Photodetector, International Research Conference, Rajarata University of Sri lanka, 2019
- 6.. Thanuja Dushanthi, Nilamini Yapa, **Ajith C. Herath**, Photodynamic Action of Porphyrin derivatives Against Skin Fungi of *candida albicans* and *malassezia furfur*, International Research Conference, Rajarata University of Sri lanka, 2019
7. Isuri Udara. SamithRathnayake, **AjithC.Herath** Electronic Structure and Optical Property Evaluation of Synthesized Organic dyes using DFT/TDDFT Computational Strategies for Contribution to Opt-Electronic Devices. International Research Conference, Rajarata University of Sri lanka, 2019

8. Upeksha Halpegama, **Ajith c. Herath**, Rohan Weerasooriya, Synthesis, Characterization and Anodic Dissolution of Reduced Graphene Nano Zero Valent Iron composite in Aqueous Solution of Na₂SO₄, International Research Conference, Rajarata University of Sri lanka, 2019
9. Saduni Mahaarachchi , **Ajith C. Herath**, Surface Modification of Montmorillonite Clay by Benzenediazonium Cation: Ammonia gas Sensor, International Research Conference, Rajarata University of Sri lanka, 2019
10. Tharidu Bandaranayake, **Ajith C. Herath**, Removal of residual aluminium in electrochemically treated water, International Research Conference, Rajarata University of Sri lanka, 2019

2018

11. JAKS Jayakodi, **Ajith C. Herath**, Separation of calcium and magnesium from electrocoagulated sludge by chemical precipitation technique, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2018, 11.
12. In House Test Method Validation for Determination of Chloride Content in Waste Sludge Sample, JMNY Jayasundera, **Ajith C. Herath**, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2018, 13.
13. Performance Evaluation of Electrocoagulation Process for Removing Hardness from Tube-Well and Tap Water at the Faculty of Applied Sciences and extraction of Aluminium from electrocoagulated sludge, MKA Madushanka, **Ajith C. Herath**, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2018, 14.
14. Investigation of FTIR Spectral Data Correlation Between Technical Standards and Product Formulations of Selected Pesticides, R. Purijjala, **Ajith C. Herath**, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2018, 15.
15. Synthesis and Characterization of Mg Based Cd Alloy, SMSL Bandara, **Ajith C. Herath**, U. Dhanayake, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2018, 33.

2017

16. J. Halpegama, S. Wijesinghe, **Ajith C. Herath**, Fabrication and Characterization of Graphene – Nano Zero Valent Iron composite, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2017, 15.
17. A. Wijeratna, S. Gajaweera, **Ajith C. Herath**, Molecular dynamics approach for modeling of nanozero valent iron-graphene composite, , *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2017, 23
- H. Weerasiri, S. Wijesinghe, **Ajith C. Herath**, Development of nano-hydroxyapatite dispersed Poly (Methyl Methacrylate) polymer matrix to reduce the usage of metals in the biomedical applications, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2017, 22.
18. H. Hettiarachchi, TMWJ Bandara, J.L. Ratnasekera, **Ajith C. Herath**, Quasi-Solid State Photo-Electrochemical Solar Cell Based on Spin Coated TiO₂ P25 Nano-powder and RbI and tetrahexylammonium iodide containing gel polymer electrolyte. , *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2017, 16.
19. N. Nawoda, S. Wijesinghe, **Ajith C. Herath**, Facile fabrication of montmorillonite-tris(4-bromophenyl)amine radical cation composite: Catalytic effect on oxidation of iodide ions, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2017, 19.
20. J. Madushika, A. Siriwardena, S. Senadeera, I. Senavirathna, **Ajith C. Herath**, Antioxidant activity of *Elaeocarpus serratus*, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2017, 18.
21. T. Dilushani, , S. Wijesinghe, **Ajith C. Herath**, Synthesis of hydroxyapatite nanoparticles to increase the bioavailability of Eppawala rock phosphate, *Applied Sciences Research Sessions, Rajarata University of Sri lanka*, 2017, 19.