

# Imalka Munaweera, PhD

Department of Chemistry  
Faculty of Applied Sciences  
University of Sri Jayewardenepura  
Nugegoda, Sri Lanka

Mobile: +94772943738  
Email: [imalkamunaweera@gmail.com](mailto:imalkamunaweera@gmail.com)  
[imalka@sjp.ac.lk](mailto:imalka@sjp.ac.lk)  
[www.linkedin.com/in/imalkamunaweera](http://www.linkedin.com/in/imalkamunaweera)  
<https://scholar.google.com/citations?user=HY3LPNEAAAAJ&hl=en>

## HIGHLIGHTS

- Featured in the “Asian Scientist 100” list by *Asian Scientist Magazine* in 2022 and 2024 editions.
- Recipient of prestigious international awards:
  - OWSD–Elsevier Foundation Award for Early-Career Women Scientists (2021)
  - TWAS–Atta-ur-Rahman Award in Chemistry (2023)
- Inventor of U.S. and Sri Lankan patents — granted, licensed, and commercialized innovations.
- Three years of postdoctoral research experience in the United States.
- Teaching experience in:  
Nanotechnology, Physical Chemistry, Inorganic Chemistry, Polymer Chemistry, Materials Chemistry, Advanced Chemical Synthesis, and Instrumental Analysis.
- Strong research background in nanotechnology, inorganic chemistry, and materials science.
- Awarded multiple competitive research grants, including:
  - TWAS Research Grants (2019 & 2020)
  - Sri Lanka NRC–PPP Grant (2019)
  - UTSW Center for Translational Medicine (CTM) Pilot Grant (USA, 2017)
- Highly skilled in instrumentation, nanocharacterization, and analytical techniques, including: SEM, TEM, AFM, FTIR, UV–Vis, Mass Spectrometry, Chromatography, Ion Mobility, PXRD, HPLC, GC–MS, Raman, TGA, DSC, DLS, and related methods.
- Delivered 50+ invited talks and conference presentations at national and international forums.

## EDUCATION

Postdoctoral Training Certificate UT Southwestern Medical Center, Dallas, Texas, USA	2015-2018
Doctor of Philosophy Degree (Ph.D.) in Chemistry The University of Texas at Dallas, Department of Chemistry and Biochemistry, Texas, USA	2011-2015
Master of Philosophy Research Degree in Chemical and Process Engineering University of Moratuwa, Sri Lanka	2009-2011
Bachelor of Science (Special Degree) in Chemistry University of Peradeniya, Sri Lanka	2003-2007

## FELLOWSHIP

Fellow - Institute of Chemistry Ceylon	since 2023
--	------------

## EMPLOYMENT

<u>Professor in Chemistry</u> <i>University of Sri Jayewardenepura, Nugegoda, Sri Lanka</i>	2023- present
<u>Senior Lecturer in Chemistry</u> <i>University of Sri Jayewardenepura, Nugegoda, Sri Lanka</i>	2020- 2023
<u>Senior Lecturer (contract basis)</u> <i>University of Sri Jayewardenepura, Nugegoda, Sri Lanka</i>	2019- 2020
<u>Assistant Professor in Chemistry</u> <i>Prairie View A&amp;M university, Texas, USA</i>	2018- 2019
<u>Postdoctoral Researcher</u> <i>Department of Radiology, UT Southwestern Medical Center, Dallas, Texas, USA</i>	2015-2018

<u>Graduate Research/Teaching Assistant</u> <i>Department of Chemistry, University of Texas at Dallas, Texas, USA</i>	2011-2015
<u>Scientist</u> <i>Sri Lanka Institute of Nanotechnology, Sri Lanka</i>	2009-2011
<u>Research and Development Chemist</u> <i>Hayleys Dipped Products PLC, Sri Lanka</i>	2008-2009

## RESEARCH EXPERIENCE

<i>Department of Chemistry, University of Sri Jayewardenepura, Nugegoda, Sri Lanka</i>	2019-Present
<ul style="list-style-type: none"> <li>• Development of visible-light-active photocatalytic nanomaterials and nanofiber composites for environmental and biomedical applications.</li> <li>• Design and antimicrobial evaluation of metal-doped silica nanoparticle hybrid nanofibrous membranes as advanced antimicrobial functional layers.</li> <li>• Fabrication of amine-functionalized mesoporous silica nanoparticle-incorporated electrospun cellulose acetate nanofibers for efficient hardness removal from drinking water; performed adsorption kinetics studies.</li> <li>• Development of anti-inflammatory molecule-loaded layered double hydroxides (LDHs) and assessment of controlled release behavior.</li> <li>• Engineering of functional nanohybrids to reduce post-harvest losses in fruits and vegetables.</li> </ul>	
<i>Department of Chemistry, A&amp;M University, Prairie View, Texas, USA</i>	2018-2019
<ul style="list-style-type: none"> <li>• Developed magnetic nanoparticle composites for drug delivery and biomedical applications.</li> <li>• Designed temperature-sensitive antibiotic-loaded nanoparticles aimed at eradicating biofilm-associated infections.</li> </ul>	
<i>Department of Radiology, UT Southwestern Medical Center, Dallas, Texas, USA</i>	2015-2018
<i>Postdoctoral research</i>	
<ul style="list-style-type: none"> <li>• Investigated the use of alternating magnetic fields (AMF) with temperature-sensitive, antibiotic-loaded lipid nanoparticles for biofilm eradication.</li> <li>• Explored targeted nanoparticle delivery to brain tumors using ultrasound-mediated blood–brain barrier (BBB) opening and LDL–docosahexaenoic acid (DHA) nanocarriers.</li> </ul>	
<i>Department of Chemistry, University of Texas at Dallas, Richardson, Texas, USA</i>	2011-2015
<i>Ph.D. dissertation research</i>	
<i>Advisor: Prof. Kenneth J. Balkus Jr.</i>	
<ul style="list-style-type: none"> <li>• Synthesized and characterized nanoparticles and nanofiber composites for drug delivery, cancer chemoradiotherapy, and other biomedical applications.</li> <li>• Investigated drug release kinetics from platinum-based nanoparticles, nanocomposites, and nanofibers.</li> </ul>	
<i>Department of Chemical Engineering, University of Moratuwa, Sri Lanka</i>	2009-2011
<i>M.Phil. dissertation research</i>	
<ul style="list-style-type: none"> <li>• Prepared and characterized drug- and nutrient-loaded nanoparticles and nanocomposites for controlled release applications.</li> </ul>	
<i>Sri Lanka Institute of Nanotechnology, Sri Lanka</i>	2009-2011
<i>Research scientist</i>	
<ul style="list-style-type: none"> <li>• Synthesized and characterized porous nanoparticles and nanocomposites for agricultural applications.</li> </ul>	
<i>Hayleys Dipped Products PLC, Sri Lanka</i>	2008-2009
<i>Research and development chemist</i>	
<ul style="list-style-type: none"> <li>• Developed dipped gloves based on elastomeric nanocomposites for industrial applications.</li> </ul>	
<i>Department of Chemistry, University of Peradeniya, Sri Lanka</i>	2003-2007
<i>Undergraduate research</i>	
<ul style="list-style-type: none"> <li>• Prepared and characterized formic acid modified iron oxide nanoparticles for biomedical applications.</li> </ul>	

## TEACHING EXPERIENCE

*University of Sri Jayewardenepura, Nugegoda, Sri Lanka*  
*Online and classroom teaching for,*

March 2019-Present

- Concepts in inorganic chemistry I
- Concepts in inorganic chemistry II
- Chemical kinetics
- Applications of nanotechnology in industry
- Inorganic materials
- Solid state chemistry
- Inorganic reaction mechanisms
- Inorganic polymers
- Polymer nanotechnology
- Polymer characterization
- Polymer nanomedicine
- Advanced materials & technology (MSc)
- Characterization of nanomaterials (MSc)

*Assistant Professor in Chemistry, A&M University, Prairie View, Texas, USA*

2018-2019

- Physical and Inorganic chemistry
- General chemistry

*Teaching Assistant, University of Texas at Dallas, Texas, USA*

2011-2015

Led weekly lab sessions for,

- Instrumental analysis
- General chemistry
- Introductory organic chemistry laboratory I and II
- Advanced chemical synthesis

## VISITING LECTURER

1. M.Sc. / PG Diploma in Industrial Analytical Chemistry (2020 – 2025)  
*University of Sri Jayewardenepura*
2. M.Sc. / PG Diploma in Nanotechnology (2020-2021)  
*University of Moratuwa*
3. M.Sc. in Polymer Science and Technology (2019-2020)  
*University of Sri Jayewardenepura*
4. Bachelor of Biosystems Technology – CST 32012: Nanotechnology for Biosystems (2021)  
*South Eastern University of Sri Lanka*
5. B.Sc. (Honors) Degree – FST 171 1.0: Concepts in Inorganic Chemistry  
Department of Food Science and Technology, *University of Sri Jayewardenepura*
6. B.Sc. (Honors) Degree – FST 264 1.0: Chemical Kinetics  
Department of Food Science and Technology, *University of Sri Jayewardenepura*
7. B.Sc. (Honors) Degree – FST 482 1.0: Nanotechnology in Food Systems  
Department of Food Science and Technology, *University of Sri Jayewardenepura*

## HONORS AND AWARDS

*National and International Excellence Awards*

1. **CVCD Excellence Award for Most Outstanding Inventor – 2024**  
*Committee of Vice Chancellors and Directors (CVCD), Sri Lanka*
2. **TWAS–Atta-ur-Rahman Award in Chemistry – 2023**  
*The World Academy of Sciences (TWAS)*
3. **OWSD–Elsevier Foundation Award for Early-Career Women Scientists in the Developing World – 2021**
4. **National Science & Technology Award – 2010**  
*Category: Innovative Advanced Technologies with Commercial Potential*  
*(Awarded by the President of the Democratic Socialist Republic of Sri Lanka)*

### *National Recognition and Research Awards*

5. SUSRED Award – 2024, 2023  
*National Science Foundation (NSF), Sri Lanka*
6. Ramakrishna Memorial Award – 2023  
*Institute of Chemistry Ceylon (ICChemC), Sri Lanka*
7. The Young Scientist Award for Technology – 2022  
*National Science and Technology Commission (NASTEC), Young Scientists Forum (YSF), Sri Lanka*

### *University Research Awards – University of Sri Jayewardenepura (USJP)*

8. 2023  
Research Award – Indexed Publications  
Research Award – Full Paper Publications in Refereed Journals  
Research Award – Google Scholar Index >15  
Research Award – Obtaining Patents  
Research Award – Completion of PhD/MPhil Degrees
9. 2022  
Early Career Researcher Award  
Research Award – Indexed Publications  
Research Award – Full Paper Publications in Refereed Journals  
Research Award – Google Scholar Index >15  
Research Award – Obtaining Patents  
Research Award – Completion of PhD/MPhil Degrees
10. 2021  
Research Award – Indexed Publications  
Research Award – Full Paper Publications in Refereed Journals  
Research Award – Google Scholar Index >15  
Research Award – Obtaining Patents
11. 2020  
Research Award – Indexed Publications

### *Research and Academic Awards – USA*

12. Translational Pilot Grant Program Award – 2017–2018  
*UT Southwestern Center for Translational Medicine (CTM), USA*
13. New Investigator Travel Award – 2017  
*Society for Thermal Medicine (Jayne Koskinas Ted Giovanis Foundation), USA*
14. Research Day Award – Best Basic Science Poster Presentation – 2016  
*Department of Radiology, University of Texas Southwestern Medical Center, USA*  
*Presentation: “Localized Delivery of Docosahexaenoic Acid Loaded Low-Density Lipoprotein Nanoparticles to the Rat Brain Using Focused Ultrasound”*
15. Natural Sciences and Mathematics Scholarship – 2011–2015  
*School of Natural Sciences and Mathematics, University of Texas at Dallas (UTD), USA*
16. Betty and Gifford Johnson Graduate Scholarship – 2013  
*University of Texas at Dallas, USA*

### *Conference and Competition Awards – USA*

17. 1st Place – American Chemical Society (ACS) Meeting-in-Miniature Graduate Student Competition – 2015  
*Talk: “Nitric oxide and cisplatin releasing wrinkle amine mesoporous silica nanoparticles for treatment of non-small cell lung carcinoma”*
18. 2nd Place – ACS Meeting-in-Miniature Graduate Student Competition – 2014  
*Talk: “Novel chemoradiotherapeutic magnetic nanoparticles for targeted treatment of non-small cell lung cancer”*
19. Finalist – The Fiber Society Graduate Student Paper Competition – 2014

## PUBLICATIONS

### 2025

- 1) Piumika Yapa, **Imalka Munaweera**, Mayuri Geethanjalie Thammitiyagodage, Evaluation of the safety profile of a metal-based nanosystem for developing antimicrobial polymer membranes in healthcare applications, *Nanoscale Advances*, 7, 5735, 2025.
- 2) Sanduni Dabare, Sisitha Rajapaksha, **Imalka Munaweera**, Sustainable innovation in nanotechnology-based water treatment: aligning climate change adaptation with industrial ecology and CSR goals, *Environmental Science: Water Research & Technology*, 11, 2100-2124, 2025.
- 3) Dinithi Senanayake, **Imalka Munaweera**, 2D materials for nutraceutical delivery and smart packaging: multifunctional, sustainable, and responsive applications, *RSC Advances*, 15, 35233-35252, 2025.
- 4) Sanduni Dabare, Sisitha Rajapaksha, **Imalka Munaweera**, Lifecycle analysis of nanotechnology-enhanced soft materials in the circular economy, *Molecular Systems Design & Engineering*, 2025
- 5) Loshini Rodrigo, **Imalka Munaweera**, Pamoda Thavish Perera, Integrated SA-CMC hydrogel formulation with the NAA hormone, ZnO nanoparticles, and potassium chloride: a sustainable approach to enhance flowering and crop yield in the short-term crop chili (*Capsicum annuum*), *RSC Advances*, 15, 22587-22604, 2025.
- 6) Viraj Pasindu, **Imalka Munaweera**, Harnessing atomic-scale defect engineering in 2D photocatalysts: synergistic integration of nanocomposite architectures for bandgap tuning and charge transfer optimization, *RSC Advances*, 15, 34191-34210, 2025.
- 7) Viraj Pasindu, Piumika Yapa, Sanduni Dabare, **Imalka Munaweera**, Multifunctional transition metal oxide/graphene oxide nanocomposites for catalytic dye degradation, renewable energy, and energy storage applications, *RSC Advances*, 15, 33162-33186, 2025.
- 8) Piumika Yapa, **Imalka Munaweera**, Functionalized nanoporous architectures derived from sol-gel processes for advanced biomedical applications, *Journal of Materials Chemistry B*, 13, 10715-10742, 2025.
- 9) Dinithi Senanayake, Piumika Yapa, Sanduni Dabare, **Imalka Munaweera**, Precision targeting of the CNS: recent progress in brain-directed nanodrug delivery, *RSC Advances*, 15, 25910-25928, 2025.
- 10) Maheshika Sethunga, Piumika Yapa, **Imalka Munaweera**, Katugampalage Don Prasanna Priyantha Gunathilake, Kamburawala Kankanamge Don Somathilaka Ranaweera, Mayuri G Thammitiyagodage, Nanoemulsions of cinnamon bark, clovebud, and ginger oleoresins: A phase inversion temperature approach for natural beverage flavoring while prioritizing safety through toxicity evaluation, *Next Research*, 100812, 2025.
- 11) Malshani Chathuranika Nissanka, Ayomi Dilhari, Jagath Anuradha Munasinghe, Gayan Priyadarshana, Kumudu Bandara, **Imalka Munaweera**, Manjula Manoji Weerasekera, Decoding *Proteus mirabilis* biofilms: expression of selected virulence genes and association with antibiotic resistance. *BMC Microbiology*, 25, 481, 2025.
- 12) Viraj Pasindu, Piumika Yapa, Sanduni Dabare, **Imalka Munaweera**, Thusitha Etampawala, Manjula M Weerasekera, Dinesh Attygalle, Shantha Amarasinghe, Harnessing the power of visible light with GO-Ni-ZnO nanohybrid electrospun polymeric membranes for improved photocatalysis: a focused approach to fabrication, characterization, and applications. *Emergent Materials*, 1-26, 2025.
- 13) Dinithi Senanayake, Piumika Yapa, Sanduni Dabare, **Imalka Munaweera**, Manjula M Weerasekera, Thusitha NB Etampawala, Maheshika Sethunga, Dinesh Attygalle, Shantha Amarasinghe, Combined antimicrobial and anti-inflammatory properties of electrospun PCL nanohybrids infused with metal-turmeric oleoresin and metal-curcuminoids, *RSC Advances*, 15, 20061-20083, 2025.
- 14) RK Maduwanthi, **I Munaweera**, WPTD Perera, Nutrient nanohybrids based on sodium alginate and carboxymethyl cellulose provide enhanced slow release of magnesium, zinc and copper. *Chemical Papers*, 79, 6227–6245, 2025.
- 15) Piumika N Yapa, **Imalka Munaweera**, Manjula M Weerasekera, Laksiri Weerasinghe, Innovative inorganic polymeric nanohybrid-based dressing to combat a wide array of microbes in biofilms. *Emergent Materials*, 1-28, 2025.
- 16) Loshini Rodrigo, **Imalka Munaweera**, Employing sustainable agriculture practices using eco-friendly and advanced hydrogels, *RSC Advances*, 15, 21212-21228, 2025.
- 17) Piumika Yapa, Sisitha Rajapaksha, **Imalka Munaweera**, The integration of nanotechnology, nanomedicine, and artificial intelligence for advancements in healthcare: A conceptual review based on PRISMA method and future research directions, *Next Research*, 100330, 2025.
- 18) Sanduni Dabare, Sisitha Rajapaksha, **Imalka Munaweera**, Empowering innovative strategies: Utilizing polymer-based nanotechnology for the prevention, control, and detection of aflatoxins, ochratoxins, and fusarium toxins in food systems, *Grain & Oil Science and Technology*, 2025.

- 19) Janitha Jayapamoda Mahanthe, L Karunanayake, **Imalka Munaweera**, DAS Amarasinghe, KAKEI Dharmapala, Hashma Imnisar, Investigating the aspect ratio and concentration of ZnO nanoparticles as a filler to improve the electrical, thermal and mechanical properties of rubber composites, *Journal of Rubber Research*, 2025, 1-17.
- 20) Saranya Selvaraj, Monali Perera, Piumika Yapa, **Imalka Munaweera**, Inoka C Perera, Tharindu Senapathi, Laksiri Weerasinghe, *In vitro* Analysis of XLAsp-P2 Peptide Loaded Cellulose Acetate Nanofiber for Wound Healing, *Journal of Pharmaceutical Sciences*, 2025, 911-922.
- 21) Sisitha Rajapaksha, Piumika Yapa, **Imalka Munaweera**, Innovation management and nanotechnology: a PRISMA-based analysis and research implications, *International Journal of Innovation Science*, 2025.

## 2024

- 22) PN Yapa, **I Munaweera**, C Sandaruwan, L Weerasinghe, MM Weerasekera, Metal doped silica nanohybrids with extensive bacterial coverage for antibacterial applications exhibit synergistic activity, *Biomaterials Advances*, 2024, 157, 213753.
- 23) Piumika Yapa, **Imalka Munaweera**, Manjula M Weerasekera, Laksiri Weerasinghe, Synergistic antimicrobial nanofiber membranes based on metal incorporated silica nanoparticles as advanced antimicrobial layers, *RSC Adv*, 2024, 14, 33919-33940.
- 24) Maheshika Sethunga, Katugampalage Don Prasanna Priyantha Gunathilake, Kamburawala Kankanamge Don Somathilaka Ranaweera, **Imalka Munaweera**, Antimicrobial and antioxidative electrospun cellulose acetate-essential oils nanofibrous membranes for active food packaging to extend the shelf life of perishable fruits, *Innovative Food Science & Emerging Technologies*, 2024, 103802 (97).
- 25) P Yapa, **I Munaweera**, MM Weerasekera, L Weerasinghe, C Sandaruwan, Potential antifungal applications of heterometallic silica nanohybrids: A synergistic activity, *Biomaterials Advances*, 2024 162, 213930.
- 26) PN Yapa, **I Munaweera**, MM Weerasekera, L Weerasinghe, Nanoarchitectonics for synergistic activity of multimetallic nanohybrids as a possible approach for antimicrobial resistance (AMR), *Journal of Biological Inorganic Chemistry*, 2024, 1-22.
- 27) Piyumi Kodithuwakku, Dilushan Jayasundara, **Imalka Munaweera**, Randika Jayasinghe, Tharanga Thoradeniya, Achala Bogahawatta, KR Jaliya Manuda, Manjula Weerasekera, Nilwala Kottegoda, Ilmenite-Grafted Graphene Oxide as an Antimicrobial Coating for Fruit Peels, *ACS Omega* 2024, 9, 24, 26568–26581.
- 28) Ineesha Piumali Madhushika, Piumika Yapa, **Imalka Munaweera**, Chanaka Sandaruwan, MM Weerasekera, The antimicrobial synergy of polymer based nanofiber mats reinforced with antioxidants intercalated layered double hydroxides as a potential active packaging material, *Nano Express*, 2024, 5 025018.
- 29) Kithmini Ranathunga, Piumika Yapa, **Imalka Munaweera**, MM Weerasekera, Chanaka Sandaruwan, Preparation and characterization of Fe–ZnO cellulose-based nanofiber mats with self-sterilizing photocatalytic activity to enhance antibacterial applications under visible light, *RSC Adv.*, 2024, 14, 18536-18552
- 30) Sehan Jayasinghe, **Imalka Munaweera**, Chandani Perera, Dumindu P Siriwardena, Nilwala Kottegoda, Low-Carbon-Footprint Plasma-Functionalized Coconut-Coir-Based Porous Carbon as an Efficient and Sustainable Adsorbent, *ChemistrySelect*, 2024, 9(13), e202305164.
- 31) Aseni S Pathiraja, Senuri Kumarage, **Imalka Munaweera**, Chanaka Sandaruwan, Amino Silica Nanohybrid Membranes for Enhanced Removal of Cu (II) Ion in Aqueous Solutions, *Water, Air, & Soil Pollution*, 2024, 235(4), 1-17.
- 32) Sachini D Deshapriya, **Imalka Munaweera**, Visible-Light-Active Electrospun Membranes Based on Cobalt-Doped ZnO Nanohybrids: Applications for Food Packaging, *ChemistrySelect*, 2024, 9(9), e202303830.
- 33) Aseni Sahasri Pathiraja, **Imalka Munaweera**, Innovative nanotechnology-based sustainable food packaging: A brief review, *JSFA Reports*, 2024, 4(1), 19-32.
- 34) S.M.M.C. Sethunga, K.K.D.S. Ranaweera, **I. Munaweera** and K.D.P.P. Gunathilake, In-Vitro Antioxidant Activity of Essential Oils and Oleoresins of Cinnamon, Clove bud, Ginger and their synergistic interactions, *Ceylon Journal of Science*, 2024, 53 (1), 5-13.

## 2023

- 35) Senuri Kumarage, **Imalka Munaweera**, Chanaka Sandaruwan, Laksiri Weerasinghe, Nilwala Kottegoda, Electrospun amine-functionalized silica nanoparticles–cellulose acetate nanofiber membranes for effective removal of hardness and heavy metals (As(V), Cd(II), Pb(II)) in drinking water sources, *Environ. Sci.: Water Res. Technol.*, 2023, 9, 2664-2679.
- 36) C Madhusha, T Jayasundara, **I Munaweera**, C Perera, G Wijesinghe, M Weerasekera, C Sandaruwan, A Meiyazhagan, FC Robles Hernandez, PM Ajayan, N Kottegoda, Synthesis and structural characterization of copper nanoparticles doped activated carbon derived from coconut coir for drinking water purification, *Materials Today Chemistry*, 2023, 27, 101312.

- 37) Manesha Fernando, **Imalka Munaweera**, Nilwala Kottegoda, Preparation and Characterization of a Plant-Nutrient-Loaded Cellulose Acetate Nanofiber Mat as a Potential Slow-Release Fertilizer, *Ind. Eng. Chem. Res. (ACS)*, 2023, 62, 51, 22149–22154.
- 38) Maheshika Sethunga, M.M.K.D. Ranasinghe, K.K.D.S. Ranaweera, **Imalka Munaweera**, K.D.P.P. Gunathilake, Synergistic antimicrobial activity of essential oils and oleoresins of cinnamon (*Cinnamomum zeylanicum*), clove bud (*Syzygium aromaticum*) and ginger (*Zingiber officinale*), *Biocatalysis and Agricultural Biotechnology*, 2023, 51, 102800.
- 39) Maheshika Sethunga, Kamburawala Kankanamge Don Somathilaka Ranaweera, **Imalka Munaweera**, Katugampalage Don Prasanna Priyantha Gunathilake, Optimization of enzyme-assisted extraction of essential oils of *Cinnamomum zeylanicum*, *Syzygium aromaticum*, and *Zingiber officinale*, by response surface methodology, *JSFA Reports*, 2023, 3(19), 19-29.
- 40) Chamalki Madhusa, Kavindya Weerasinghe, **Imalka Munaweera**, Chandani Perera, Gayan Wijesinghe, Manjula Weerasekera, Yugantha Idangodage, CS Kalpage, Nilwala Kottegoda, Phosphate functionalized activated carbon sachet filters for drinking water purification, *Environmental Science: Water Research & Technology*, 2023, 9, 193-210.
- 41) Kasun L Seneviratne, **Imalka Munaweera**, Sriyani E Peiris, Piyumi Kodithuwakku, Colin N Peiris, Nilwala Kottegoda, Visible Light Active Silver Decorated Iron Titanate/Titanium Dioxide Nanohybrid for Sterilization of Explants Grown by In Vitro Technique, *Advanced Materials Technologies*, 2023, 2201292.
- 42) Manesha Fernando, **Imalka Munaweera**, Nilwala Kottegoda, Potential Applications of Electrospun Nanofibers in Agriculture, *Current Scientia*, 1-23, 2023.
- 43) Sayani Nimanka, Nimshi Fernando, Madhavi de Silva, **Imalka Munaweera**, Nilwala Kottegoda, Climate Smart Agriculture: The Role of Fertilizer Innovations and Efficient Plant Nutrient Management, *Current Scientia*, 73-99, 2023.
- 44) Aseni Sahasri Pathiraja, **Imalka Munaweera**, Nilwala Kottegoda, Surface Functionalized Mesoporous Silica Nanoparticles for Enhanced Removal of Heavy Metals: A Review, *Current Scientia*, 24-44, 2023.
- 45) Peiris, S. E., Seneviratne, K. L., Shashikala, R. P. A., Peiris, Colin N., **Imalka, M.** & Piumika, Y. P. In Vitro Evaluation of Antibacterial Activity of Copper and Sulfur Nanoparticles for Controlling Bacterial Blight Caused by *Xanthomonas* sp. in *Anthurium andraeanum* Lind, *SLIIT J Hum & Sci.*, 46-55, 2023.

## 2022

- 46) Piyumi Kodithuwakku, Dilushan Jayasundara, **Imalka Munaweera**, Randika Jayasinghe, Tharanga Thoradeniya, Manjula Weerasekera, Pulickel M Ajayan, Nilwala Kottegoda, A review on recent developments in structural modification of TiO<sub>2</sub> for food packaging applications, *Progress in Solid State Chemistry*, 2022, 67, 100369.
- 47) Maheshi Sethunga, KKDS Ranaweera, KDPP Gunathilake, **Imalka Munaweera**, Recent advances in the extraction methods of essential oils and oleoresins from plant materials and its potential applications: A comprehensive review, *Journal of Food and Bioprocess Engineering*, 2022, 5(2), 151-167.
- 48) Prasad Disanayake, Chamalki Madhusa, **Imalka Munaweera**, Gayan Wijesinghe, Manjula Weerasekera, Samitha Deraniyagala, Nilwala Kottegoda, Microwave-Assisted Synthesis of Cobalt-Doped Rutile/Ilmenite Derived from Natural Sands as Visible-Light-Active Photocatalytic and Antimicrobial Agents, 2022, *ChemistrySelect*, 7(33), e202202598.
- 49) Chamalki Madhusa, Madhavi De Silva, **Imalka Munaweera**, Chandani Perera, Nilwala Kottegoda, The Quest for Sustainable Catalysis through Transition Metal Doped Carbonbased Single-Atom Catalysts, 2022, *Iranian Journal of Catalysis*, 12(3), 261-282.
- 50) Sehan Jayasinghe, Pasan Siriwardena, **Imalka Munaweera**, Chandani Perera, Nilwala Kottegoda, Sustainable Synthesis of Highly Functionalized Activated Carbon using Plasma Technology, *Chempluschem*, 2022, 87(10), e202200202.
- 51) Senuri Kumaraage, Chamalki Madhusa, **Imalka Munaweera**, Nilwala Kottegoda, Application of Metal/Metal Oxide Doped Electrospun Nanofiber Membranes in Sustainable Catalysis, *Current Scientia*, 2022, 25(01), 26-42.
- 52) Senuri Kumaraage, **Imalka Munaweera**, Nilwala Kottegoda, A comprehensive review on electrospun nanohybrid membranes for wastewater treatment, *Beilstein Journal of Nanotechnology*, 2022, 137-159.
- 53) Thilini Amarasinghe, Chamalki Madhusa, **Imalka Munaweera**, Nilwala Kottegoda, Review on Mechanisms of Phosphate Solubilization in Rock Phosphate Fertilizer, *Communications in Soil Science and Plant Analysis*, 2022, 944-960.
- 54) Senuri Kumaraage, **Imalka Munaweera**, Nilwala Kottegoda, Contemporary, Multidisciplinary Roles of Mesoporous Silica Nanohybrids/Nanocomposites, *ChemistrySelect*, 2022, e202200574.

## 2021

- 55) Kasun L Seneviratne, **Imalka Munaweera**, Sriyani E Peiris, Colin N Peiris, Nilwala Kottegoda, Recent Progress in Visible-Light Active (VLA) TiO<sub>2</sub> Nano-Structures for Enhanced Photocatalytic Activity (PCA) and Antibacterial Properties: A Review, *Iranian Journal of Catalysis*, 2021, 11, 217-245.
- 56) Chamalki Madhusa, Kumudu Rajapaksha, **Imalka Munaweera**, Madhavi de Silva, Chandani Perera, Gayan Wijesinghe, Manjula Weerasekera, Dinesh Attygalle, Chanaka Sandaruwan, Nilwala Kottegoda, A Novel Green Approach to Synthesize Curcuminoid-Layered Double Hydroxide Nanohybrids: Adroit Biomaterials for Future Antimicrobial Applications, *ACS omega*, 2021, 6, 9600-9608.
- 57) Chamalki Madhusa, **Imalka Munaweera**, Nilwala Kottegoda, Functional nanomaterials as smart food packaging: A Brief, *African Journal of Agriculture and Food Science*, 2021, 3, 58-78.

## 2020

- 58) Chamalki Madhusa, **Imalka Munaweera**, Veranja Karunaratne, Nilwala Kottegoda, A Facile Mechanochemical Approach to Synthesizing Edible Food Preservation Coatings Based On Alginate/Ascorbic Acid-Layered Double Hydroxide Bio-Nanohybrids, *Journal of Agricultural and Food Chemistry*, 2020, 68, 8962–8975.

## 2018

- 59) Chenchen Bing, Yu Hong, Christopher Hernandez, Megan Rich, Bingbing Cheng, **Imalka Munaweera**, Debra Szczepanski, Yin Xi, Mark Bolding, Agata Exner, Rajiv Chopra, Characterization of different bubble formulations for blood-brain barrier opening using a focused ultrasound system with acoustic feedback control, *Nature Scientific Reports*, 2018, 8, 7986.
- 60) **Imalka Munaweera**, Sumbul Shaikh, Danny Maples, Ashish Ranjan, David Greenberg, Rajiv Chopra, Temperature-Sensitive Liposomal Ciprofloxacin for the Treatment of Biofilm on Infected Metal Implants using Alternating Magnetic Fields, *International Journal of Hyperthermia*, 2018, 34, 189-200. (Special issue - Thermal Therapy and Infectious diseases).

## 2017

- 61) Rajiv Chopra, Sumbul Shaikh, Yonatan Chatzinoff, **Imalka Munaweera**, Bingbing Cheng, Seth M. Daly, Yin Xi, James J. Howard, Joris Nofiele, Chenchen Bing, Dennis Burns, David E Greenberg, Employing high-frequency alternating magnetic fields for the non-invasive treatment of prosthetic joint infections, *Nature Scientific Reports*, 2017, 7, 7520.
- 62) Nadeesh Madusanka, Chanaka Sandaruwan, Nilwala Kottegodaa, Dinaratne Sirisena, **Imalka Munaweera**, Ajith De Alwis, Veranja Karunaratne, Gehan A.J. Amaratung, Urea–hydroxyapatite-montmorillonite nanohybrid composites as slow release nitrogen compositions, *Applied Clay Science*, 2017, 150, 303–308.

## 2016

- 63) Rohit S Mulik, Chenchen Bing, Michelle Ladouceur-Wodzak, **Imalka Munaweera**, Rajiv Chopra, Ian R Corbin, Localized delivery of low-density lipoprotein docosahexaenoic acid nanoparticles to the rat brain using focused ultrasound, *Biomaterials*, 2016, 83, 257-268.
- 64) **Imalka Munaweera**, Michael Trinh, Jessica Hong, and Kenneth J. Balkus Jr. Chemically Powered Nanomotor as a Delivery Vehicle for Biologically Relevant Payloads, *Journal of Nanoscience and Nanotechnology*, 2016, 16, 9063-9071.
- 65) Bhuvaneswari Koneru, Yi Shi, **Imalka Munaweera**, Mary Wight-Carter, Humam Kadara, Hong Yuan, Anthony J Di Pasqua, Kenneth J Balkus Jr. Radiotherapeutic bandage for the treatment of squamous cell carcinoma of the skin, *Nuclear medicine and biology*, 2016, 43, 333-338.

## 2015-2011

- 66) **Imalka Munaweera**, Shi Yi, Bhuvaneswari Koneru, Ruben Saez, Ali Aliev, Anthony J. Di Pasqua, Kenneth J. Balkus Jr. Chemoradiotherapeutic magnetic nanoparticles for targeted treatment of non-small cell lung cancer, *Mol. Pharmaceutics*, 2015, 12, 3588–3596.
- 67) **Imalka Munaweera**, Yi Shi, Bhuvaneswari Koneru, Amit Patel, Mai H. Dang, Anthony J. Di Pasqua, Kenneth J. Balkus Jr. Nitric oxide and cisplatin releasing wrinkle amine mesoporous silica nanoparticles for treatment of non-small cell lung carcinoma, *Journal of Inorganic Biochemistry*, 2015, 153, 23-31.
- 68) **Imalka Munaweera**, Ali Aliev, Kenneth J. Balkus, Jr. Electrospun cellulose acetate-garnet nanocomposite magnetic fibers for bioseparations, *ACS Applied Materials & Interfaces*, 2014, 6, 244–251.

- 69) **Imalka Munaweera**, Bhuvaneswari Koneru, Yi Shi, Anthony J. Di Pasqua, Kenneth J. Balkus Jr. Chemoradiotherapeutic wrinkled mesoporous silica nanoparticles for use in cancer therapy, *APL Materials*, 2014, 2, 113315 (Invited paper).
- 70) **Imalka Munaweera**, Daniel Levesque-Bishop, Shi Yi, Anthony J. Di Pasqua, Kenneth J. Balkus Jr. Radiotherapeutic bandage based on electrospun polyacrylonitrile containing holmium-166 iron garnet nanoparticles for the treatment of skin cancer. *ACS Applied Materials & Interfaces*, 2014, 6, 22250–22256.
- 71) **Imalka Munaweera**, Jessica Hong, Alicia D'Souza, Kenneth J. Balkus Jr. Novel wrinkled periodic mesoporous organosilica nanoparticles for hydrophobic anticancer drug delivery. *Journal of Porous Materials*, 2014, 22, 1–10.
- 72) G P Gunaratne, Nilwala Kottegoda, Nadeesh Madusanka, **Imalka Munaweera**, Chanaka Sandaruwan, W M G I Priyadarshana, Asitha Siriwardhana, B A D Madhushanka, U A Rathnayake, Veranja Karunaratne, Two new plant nutrient nanocomposites based on urea coated hydroxyapatite: Efficacy and plant uptake, *Indian Journal of Agricultural Sciences*, 86, 494–9.
- 73) Nilwala Kottegoda, **Imalka Munaweera**, Nadeesh Madusanka, Dinaratne Sirisena, Nimal Dissanayaka, Gihan A.J. Amararatunga and Veranja Karunaratne, The advent of nanotechnology in smart fertilizer, *World Agriculture*, 2012, 3, 27–31.
- 74) Nilwala Kottegoda, **Imalka Munaweera**, Nadeesh Madusanka and Veranja Karunaratne, A green slow release fertilizer composition based on urea modified hydroxyapatite nanoparticles encapsulated wood, *Current Science*, 2011,101, 73–78.

## PATENTS - International

- 1) Iron garnet nanoparticles for cancer radiotherapy and chemotherapy, Anthony J. Di Pasqua, Kenneth J. Balkus Jr., **Imalka Munaweera**, Yi Shi, United States Patent US9808543, Nov. 7, 2017. (Granted & Licensed).
- 2) Iron garnet nanoparticles for cancer radiotherapy and chemotherapy, Anthony J. Di Pasqua, Kenneth J. Balkus Jr., **Imalka Munaweera**, Yi Shi, United States Patent and US10195297, Feb. 5, 2019. (Granted & Licensed).
- 3) Compositions for sustained release of agricultural macronutrients and process thereof, Nilwala Kottegoda, **Imalka Munaweera**, Nadeesh Madusanka and Veranja Karunaratne, United States Patent Publication: US8361185 B2, Jan. 29, 2013. (Granted & Commercialized)
- 4) A cellulose based sustained release macronutrient composition for fertilizer application, Nilwala Kottegoda, **Imalka Munaweera**, Nadeesh Madusanka, Sunanda Gunasekara, Lilantha Samaranayake, Ajith De Alwis and Veranja Karunaratne, United States Patent Publication: US8617284 B2, Dec. 13, 2013. (Granted & Commercialized).
- 5) A method of making silver-iron titanate nanoparticles and uses thereof, Kasun Laknath Seneviratne, **Imalka Munaweera**, Sriyani Edussuriya Peiris, Colin Nisantha Peiris, Nilwala Kottegoda, US20240051842A1, Feb.15, 2024.
- 6) Nilwala Kottegoda, Imalka Munaweera, Nadeesh Madusanka, Ajith De Alwis, Sunanda Gunasekara, Veranja Karunaratne, A Cellulose Based Sustained Release Macronutrient Composition for Fertilizer Application, MX336854B, 2016-01-05 (Mexico patent).
- 7) Nilwala Kottegoda, Imalka Munaweera, Nadeesh Madusanka, Ajith De Alwis, Sunanda Gunasekara, Veranja Karunaratne, A Cellulose Based Sustained Release Macronutrient Composition for Fertilizer Application, AP3633A, 2016-03-08 (ARIPO patent).
- 8) Nilwala Kottegoda, Imalka Munaweera, Nadeesh Madusanka, Ajith De Alwis, Sunanda Gunasekara, Veranja Karunaratne, A Cellulose Based Sustained Release Macronutrient Composition for Fertilizer Application, ZA201209065B, 2014-06-25 (South Africa patent).
- 9) Elastomeric polymer/spinel nanoparticles composites to introduce special properties to dipped articles, W.S.Fernando, L.P.Nethsinghe, N.S.Kottegoda and **M.T.I.S.Munaweera**, PCT/IB2009/051158, WO/2010/046789, April. 29, 2010.
- 10) Method of making a nano-fertilizer composition for sustained release of macronutrients, K.T.H. Piumi Ayesha Lakmini Peiris, Manikkuwadu Thilini Uthpala Amarasinghe, **M.T. Imalka Shanika Munaweera**, Nanayakkara Liyanage Veranja Vipul Karunaratne, Nilwala Svetlana Kottegoda, PCT/IB2022/051529, WO/2022/180504, Sep.01, 2022.
- 11) A method of making silver-iron titanate nanoparticles and uses thereof, Kasun Laknath Seneviratne, **Imalka Munaweera**, Sriyani Edussuriya Peiris, Colin Nisantha Peiris, Nilwala Kottegoda, PCT/IB2021/053178, WO/2022/219380, Oct.10, 2022.
- 12) Chamalki Madhusha, **Imalka Munaweera**, A.D.L. Chandani Perea, Kavindya Weerasinghe,Sehan Jayasinghe, Idangodage Yugantha Chathuranga Perera, Tissa Dodangoda, C.S. Kalpage, Nilwala Kottegoda, A process for manufacturing functionalized activated nanoporous carbon and use thereof, PCT/IB2022/051863, WO2023166331A1, July.09, 2023.
- 13) Chamalki Madhusha, **Imalka Munaweera**, A.D.L. Chandani Perea, Kavindya Weerasinghe,Sehan Jayasinghe,

## PATENTS – Local (Sri Lanka)

- 14) Dipped gloves based on elastomeric nanocomposites, W.S.Fernando, L.P.Nethsinghe, N.S.Kottegoda and **M.T.I.S.Munaweera**, Sri Lankan Patent Application No: 15164, 2011.
- 15) Thilini Uthpala Amarasinghe, **Imalka Munaweera**, Veranja Karunaratne, Nilwala Kottegoda, A Composition and Method to Manufacture Nano-Rock Phosphate and Urea Modified Nano-Rock Phosphate for fertilizer applications, Sri Lanka patent application No: 21626, 2021.
- 16) Piyumi Kanchana, Imalka Munaweera, Dilushan Jayasundara, Randika Jayasinghe, Tharanga Thoradeniya, Nilwala Kottegoda, Modified ilmenite nanohybrid materials for food packaging applications and a mechanochemical method of preparation thereof, Sri Lanka patent application No: 21845, 2023.
- 17) Namal Arachchilage Kasun Laknath Seneviratne, **Imalka Munaweera**, Sriyani Edussuriya Peiris, Colin Nisantha Peiris, Nilwala Kottegoda, A method of making silver-iron titanate nanoparticles and uses thereof, Sri Lanka patent application No: 22180, 2023.
- 18) Chamalki Madhusa, Imalka Munaweera, A.D.L. Chandani Perea, Kavindya Weerasinghe, Sehan Jayasinghe, Idangodage Yugantha Chathuranga Perera, Tissa Dodangoda, C.S. Kalpage, Nilwala Kottegoda, A process for manufacturing functionalized activated nanoporous carbon and use thereof, Sri Lanka patent application No: 22195, 2022. (Status – Patent filed)
- 19) Chamalki Madhusa, Imalka Munaweera, Chandani Perera, Gayan Wijesinghe, Manjula Weerasekera, Nilwala Kottegoda, Electrospun activated carbon nanofibrous membrane as an efficient and multi-purpose smart nanomaterial for drinking water purification, Sri Lanka patent application No: 22287, 2022. (Status – Patent filed)
- 20) Senuri Hansika Kumara, **Imalka Munaweera**, Chanaka Sandaruwan, Laksiri Weerasinghe, Nilwala Svetlana Kottegoda, A portable filter with incorporated amine functionalized silica nanoparticles in electrospun cellulose acetate nanofibers for effective removal of hardness and heavy metals in drinking water sources, Sri Lanka patent application No: 22661, 2023. (Status – Patent filed)
- (19) Yapa Mudiyansele Piumika Nisansala Yapa, **Imalka Munaweera**, Manjula Manoji Weerasekera, Rankothge Laksiri Prasanna Weerasinghe, An anti-microbial functional layer and the process of making thereof, Sri Lanka patent application No: 22761, 2023. (Status – Patent filed)
- (20) Sethunga Mudiyansele Maheshika Chathurangane Sethunga, **Imalka Munaweera**, Kamburawala Kankanamge Don Somathilake Ranaweera, Katugampalage Don Prasanna Priyantha Gunathilake, Active food packaging membrane for shelf-life enhancement and the method of preparation, Sri Lanka patent application No: 22762, 2023. (Status – Patent filed)

\*Patents 3 and 4 above have been extended to China, Mexico, Brazil, Australia, Canada, ARIPO, European Union, India, Vietnam, Philippines, Indonesia, Malaysia, South Africa, and Nigeria.

## INNOVATIONS LEADING TO SALE OF TECHNOLOGY

- Patents 1 and 2 were licensed to DB Therapeutics, USA
- Patents 3 and 4 were purchased by Nagarjuna Fertilizer Ltd., India

## BOOKS

1. **Imalka Munaweera**, M.L. Chamalki Madhusa, *Characterization Techniques for Nanomaterials*, CRC Press, 2023
  - ISBN: 9781032406619 (hbk), 9781032406640 (pbk), 9781003354185 (ebk)
  - DOI: 10.1201/9781003354185
2. **Imalka Munaweera**, M.L. Chamalki Madhusa, *Smart Nanomaterials*, CRC Press, 2023
  - ISBN: 9781032416175 (hbk), 9781032432243 (pbk), 9781003366270 (ebk)
  - DOI: 10.1201/9781003366270
3. **Imalka Munaweera**, Piyumika Yapa, *Principles and Applications of Nanotherapeutics*, CRC Press, 2024
  - ISBN: 978-1-032-53875-4 (hbk), 978-1-032-58034-0 (pbk), 978-1-003-44220-2 (ebk)
  - DOI: 10.1201/9781003442202

4. Laksiri Weerasinghe, **Imalka Munaweera**, Senuri Kumarage, *Nanotechnology in Drug Discovery*, Bentham Books, 2024
  - ISBN: 978-981-5238-82-2 (Print), 978-981-5238-81-5 (Online)
  - DOI: 10.2174/97898152388151240101

## BOOK CHAPTERS

1. Susanthi Jayasinghe, **Imalka Munaweera**, Disni Dedunupitiya, Chamalki Madhusa, Nilwala Kottegoda, Veranja Karunaratne, *Recent Patents and Commercially Available Nanotherapeutics on Hepatocellular Carcinoma*, in *Nanotherapeutics for the Treatment of Hepatocellular Carcinoma*, 2022, pp. 449–490, Bentham Science Publisher. ISBN: 978-981-5039-76-4
2. **Imalka Munaweera**, Susanthi Jayasinghe, Dimanthi Uduwela, Chamalki Madhusa, D. Nedra Karunaratnea, Veranja Karunaratnea, *Nanotheranostics and Cancer Prognosis, Diagnosis and Therapy*, in *Novel Molecular Oncotargets and Nano-Oncotherapeutics*, 2023, pp. 285–350, Cambridge Scholars Publishing. ISBN: 978-1-5275-0713-5
3. Senuri Kumarage, Laksiri Weerasinghe, **Imalka Munaweera**, *Advanced Mass Spectrometry for Organic Contaminants Detection*, in *Applications of Modern Mass Spectrometry*, 2023, Vol. 2, pp. 1–54, Bentham Science Publisher. ISBN: 978-981-5050-07-3
4. Wathsala Dissanayake, Madhavi de Silva, **Imalka Munaweera**, Veranja Karunaratne, Nilwala Kottegoda, *Nanotechnology-Based Urea Delivery Systems as Climate-Smart Fertilizers: Current Status and Beyond*, in *Nanofertilizer Delivery, Effects and Application Methods*, 2024, pp. 483–496, Elsevier Publisher. ISBN: 9780443133329
5. Senuri Kumarage, **Imalka Munaweera**, *Graphene-Based Hybrid Photocatalysts for Environmental Remediation*, 2024, Vol. 2, pp. 1–54, Springer Publisher. ISBN: 978-3-031-68464-7

## NEWS PAPER ARTICLE

- **Imalka Munaweera**, Chamalki Madhusa, *Insights of Nanotechnology in Covid-19: Therapy, Detection, and Prevention*, The Morning, Friday, July 9, 2021, pp. 5–6.

## RESEARCH GRANTS

- (1) National Research Investigator Driven Grants 2024  
NRC IDG 24-023  
Role: Co-PI, University of Sri Jayewardenepura  
Amount: Rs. 3 M  
Duration: Three-years  
Project: Bio-based solution to remove antibiotic contaminants in drinkable and waste water: put micro-biomes to green nanotechnology
- (2) TWAS research grant 2020  
20-102 RG/CHE/AS\_I – FR3240314134  
Role: PI, University of Sri Jayewardenepura  
Amount: USD 14200  
Duration: Two-years  
Project: Electrospun membranes for multi-purpose nano-water filters
- (3) National Research Council Private Public Partnership Grant 2019  
NRC PPP-2019  
Role: Co-PI, University of Sri Jayewardenepura  
Amount: Rs. 42 M  
Duration: Three-years  
Project: Waste coconut coir based multi-purpose nano-water filters

- (4) TWAS research grant 2019  
19-237 RG/CHE/AS\_G – FR3240310129  
Role: Co-PI, University of Sri Jayewardenepura  
Amount: USD 35,980  
Duration: Two-years  
Project: Functional  
Alginate-TiO<sub>2</sub>-graphene oxide nanohybrids to minimize the post-harvest loss of fruits and vegetables
  
- (5) USJP research grant 2022  
ASP/01/RE/SCI/2022/15  
Role: PI, University of Sri Jayewardenepura  
Amount: LKR 2,977,053  
Duration: Two-years  
Project: Hybrid nanofibrous membranes as a promising antibacterial functional layer for personal protection equipment: development and antibacterial assessments
  
- (6) USJP research grant 2021  
ASP/01/RE/SCI/2021/23  
Role: PI, University of Sri Jayewardenepura  
Amount: LKR 2,846,157  
Duration: Two-years  
Project: Development of low-cost nanotechnology-based water filter using bio-based material to remove the heavy metals (Cd, Pb, and As) in contaminated water and to effectively remove hardness in domestic drinking water.
  
- (7) USJP research grant 2021  
ASP/01/RE/SCI/2021/24  
Role: Co-PI, University of Sri Jayewardenepura  
Amount: LKR 2,534,000  
Duration: Two-years  
Project: A novel plasma assisted synthesis of coir based activated carbon for toxic gas adsorption.
  
- (8) USJP research grant 2021  
ASP/01/RE/SCI/2021/12  
Role: Co-PI, University of Sri Jayewardenepura  
Amount: LKR 2,998,834.85  
Duration: Three-years  
Project: Nanoencapsulation of Optimized volatile, Non-Volatile extracts and bioactive compounds in selected spices.
  
- (9) USJP research grant 2022  
ASP/01/RE/SCI/2022/90  
Role: Co-PI, University of Sri Jayewardenepura  
Amount: LKR 2,997,000  
Duration: Two-years  
Project: Study to assess the crystalline biofilm formation of *P. mirabillis* on in situ silicon foley catheter material and evaluation of biofilm suppression by selected medicinal plant extracts.
  
- (10) UTSW Translational Pilot Program 2017-2018 Funding-Approved  
The University of Texas Southwestern Medical School, USA  
Role: PI  
Amount: \$35000  
Duration: one-year  
Project: Non-invasive treatment of prosthetic joint infections using alternating magnetic fields

## JOURNAL REVIEW

ChemistrySelect, JSFA, International Journal of Materials Science and Applications, American Journal of Nanoscience and Nanotechnology, American Journal of Health Research and SOP Transaction on Analytical Chemistry, Groundwater for Sustainable Development, Journal of Hazardous Materials, Kalyani Journal-UOK, Rajarata University Journal, Ceylon Journal of Science-UOP, RRISL journal (Rubber Research Institute), Vidyodaya Journal of Science.

## RESOURCE PERSON:

- Sri Lanka Standards Institution – *Diploma in Quality Management* (2023)  
Lecture Topic: *Introduction to Nanotechnology and Its Applications*
- National Innovation Agency – *World Intellectual Property Day Celebration* (2023)  
Event: *“The Sri Lankan Women and IP: Right Brain for National Development”*
- Sri Lanka Standards Institution – *Diploma in Quality Management* (2022)  
Lecture Topic: *Introduction to Nanotechnology and Its Applications*
- City School of Architecture – *Smart Materials and Technology for CSA Part I & II* (2022)  
Lecture Topic: *Smart Materials and Nanotechnology*
- College of Biochemists of Sri Lanka (CBSL) – *3rd Annual Conference* (2021)  
Theme: *Natural Products and Microbes for Health and Sustainability*
- College of Biochemists of Sri Lanka (CBSL) (2021)  
Lecture Topic: *Introduction to Nanomedicine*
- City School of Architecture – *Smart Materials and Technology for CSA Part I & II* (2021)  
Lecture Topic: *Smart Materials and Nanotechnology*
- University of Sri Jayewardenepura – *Workshop on Laboratory Techniques, Good Laboratory Practices, Measurements, and Safety* (2021)
- University of Sri Jayewardenepura / Sri Lanka Association for the Advancement of Science (SLAAS) – *Workshop on Advanced Scientific Instruments* (2019)
- University of Sri Jayewardenepura / SLAAS (2019)  
Lecture Topic: *Applications of a Simultaneous TGA–DSC Thermal Analysis System*

## PROFESSIONAL ACTIVITIES:

### 1) Editorial Roles

- Editor-in-Chief, *11th Undergraduate Research Symposium – UNI-IN ALLIANCE 2025*, Faculty of Applied Sciences, University of Sri Jayewardenepura, Nugegoda, Sri Lanka (August 2025).
- Editorial Review Panel Member (Nanotechnology), *Vidya E-News*, Research and Innovation Division, Ministry of Education – Skills Development, Vocational Education, Research and Innovation Division (2021 – Present).

### 2) Reviewer

- Technical Sessions, Institute of Chemistry Ceylon (2023)
- 9th Annual Research Congress (RESCON 2022), Postgraduate Institute of Science, University of Peradeniya
- International Conference on Applied and Pure Sciences (ICAPS 2022), University of Kelaniya
- International Conference on Multidisciplinary Approaches (ICMA 2022), Faculty of Graduate Studies, University of Sri Jayewardenepura
- International Research Conference in Health Sciences (IRCHS 2022), University of Sri Jayewardenepura
- PGIS Research Congress (2021, 2019), University of Peradeniya
- SICASH 2020 Conference, Sri Lanka Institute of Information Technology (SLIIT)
- ICAPS 2021, University of Kelaniya
- University Research Grants (2020), Research Council & Faculty of Allied Health Sciences, University of Sri Jayewardenepura
- Engineering Research Conference (2018, 2019), University of Moratuwa
- Undergraduate Research Symposium (2019), Rajarata University

### 3) Evaluator

- Member, Grant Evaluation Panel for “Nanotechnology and Chemical Sciences,” National Research Council (2022)
- Evaluator, Investigator-Driven Grants, National Research Council (2022)
- Evaluator, International Conference on Innovation and Emerging Technologies (ICIET 2022), Faculty of Technology, University of Sri Jayewardenepura
- Evaluator, Young Innovators Award in Health Sciences, Faculty of Allied Health Sciences, University of Sri Jayewardenepura (2022)
- Evaluator, Research Grant Proposals – National Science Foundation (2020)
- Evaluator, Research Grant Proposals – Research Council, University of Sri Jayewardenepura
- Examiner for PhD and MSc Theses – Universities of Peradeniya, Sri Jayewardenepura, and Moratuwa (2019 – Present)

### 4) Guest Lectures / Talks

- Lecture: *Application of a Simultaneous TGA-DSC Thermal Analysis System*, organized by SLAAS Section E2
- Seminar: *Nanotechnology Applications* for Grade 9 students, Lalith Athulathmudali College, Mount Lavinia (2019)

### 5) Curriculum Development

- *Advanced Inorganic Polymers* (PCH 462 1.0), USJP
- *Polymers in Medicinal/Biotechnology Applications* (PCH 366 1.0), USJP
- *Applied Polymer Sciences II* (PSC 407 3.0), USJP
- *B.Sc. (Honors) in Human Biology – Direct Intake Program*, USJP
  - HIC 1101 – Inorganic Chemistry
  - HCP 1131 – Chemistry Practical

### 6) Workshops / Training Programs

- Main Coordinator & Organizer, *Workshop on Laboratory Techniques, Good Laboratory Practices, Measurements, and Safety in the Laboratory*, Department of Chemistry, University of Sri Jayewardenepura (2021)

### 7) Committee Memberships and Academic Roles

- Committee Member, SLAAS (2021–2024)
- National Chair, International Chemical Biology Society (2021–2023)
- Rapporteur, SLAAS Section E2 (2022)
- Secretary, SLAAS Section E2 (2023)
- Member, Organizing Committee, *2nd Global Experts Meet on Applied Science, Engineering and Technology*, Paris, France (2022)
- Coordinator, Department of Chemistry, B.Sc. (Honors) in Applied Sciences, USJP (2022–2025)
- Quality Assurance Coordinator, Department of Chemistry, USJP (2020–2025)
- Secretary, Faculty Research Committee, Faculty of Applied Sciences, USJP (2025)

### POST GRADUATE RESEARCH SUPERVISION:

- (1) Ms. Saduni Dabare- MPhil (Supervisor)  
University of Sri Jayewardenepura, 2024-Present  
Project: Enhanced the solubilization of rock phosphate via nanotechnology
- (2) Ms. Harshani Madushika- PhD (Co-Supervisor)  
University of Sri Jayewardenepura, 2025-Present  
Project: Bio-based solution to remove antibiotic contaminants in drinkable and waste water: Put microbiomes to green nanotechnology.

- (3) Ms. W.M.B.S. Bandara- PhD (Co-Supervisor)  
RMIT Australia/University of Moratuwa, 2023-Present  
Project: Development of CO<sub>2</sub> absorbing nanofiber functionalized textile material
- (4) Ms. Piyumika Yapa - PhD (Supervisor)  
University of Sri Jayewardenepura, 2022-Present  
Project: Electrospun hybrid nanofibrous membranes as a promising antimicrobial functional layer with the potential to use in personal protection equipment: development and antimicrobial assessments.
- (5) Ms. Senuri Kumara - MPhil (Supervisor)  
University of Sri Jayewardenepura, 2023 (Graduated)  
Project: Development of low-cost nanotechnology-based water filter using bio-based material to remove the hardness and heavy metals in domestic drinking water.
- (6) Ms. Maheshika Sethunga- PhD (Co-Supervisor)  
University of Sri Jayewardenepura, 2023 (Graduated)  
Project: Nanoencapsulation of optimized volatile, non-volatile extracts and bioactive compounds in selected spices
- (7) Ms. Chamalki Madhusa - MPhil (Supervisor)  
University of Sri Jayewardenepura, 2022 (Graduated)  
Project: Synthesis of Metal doped Activated Carbon Nanohybrid and Its Potential Application as an Electrocatalyst
- (8) Ms. Piyumi Kanchana - MPhil (Co-Supervisor)  
University of Sri Jayewardenepura, 2022 (Graduated)  
Project: Functional Alginate-TiO<sub>2</sub>-Graphene Oxide Nanohybrids to Minimize the Post-harvest Loss of Fruits and Vegetables
- (9) Ms. Kumudu Rajapaksha - MSc (Co-Supervisor)  
University of Sri Jayewardenepura, 2023 (Graduated)  
Project: Development of curcumin encapsulated layered double hydroxides (LDHs) nanocomposites to use in skin formulations
- (10) Mr. Sehan Jayasinghe - MPhil Student (Co-Supervisor)  
University of Sri Jayewardenepura, 2020-Present  
Project: A novel plasma assisted synthesis of coir based activated carbon for toxic gas adsorption.

## CONFERENCE PAPERS - FULL PAPER PUBLICATIONS

- (1) Piumika Yapa, **Imalka Munaweera**, Manjula M. Weerasekera, Laksiri Weerasinghe, Multimetallic Silica Nanohybrids Incorporated Nanofiber Membrane for Potential Synergistic Antibacterial Applications, Chemistry in Sri Lanka, The Tri-Annual Publication of the Institute of Chemistry Ceylon, Vol. 42 No. 2, 18-19, 2025. (Professor M. U. S. Sultanbawa Award for Research in Chemistry – 2024)
- (2) MMD Samintha, DRC Thalayarathna, JJ Mahanthe, D Attygalle, **Imalka Munaweera**, DAS Amarasinghe, L Karunanayake, VSC Weragoda, Room Temperature Signal Enhancement of ZnO Nanoparticle Gas Sensor through Photoexcitation, 2024 Moratuwa Engineering Research Conference (MERCon), IEEE, 406-411, 2024.
- (3) Pathiraja A.S., Kumara S.H. and **Munaweera I**, Enhanced Removal of Cu(II) Ion in Aqueous Solution Using Amino Mesoporous Silica Nanoparticles, 2<sup>nd</sup> International Symposium on Advanced Functional Materials (ISAFM), Monash University Malaysia, 2023 Malaysia.
- (4) Kumara S.H., **Munaweera I**, Sandaruwan C, Weerasinghe L, and Kottegoda N, Development and characterization of electrospun cellulose acetate nanofibers incorporated with amine functionalized silica for effective removal of hardness in drinking water sources, 2<sup>nd</sup> International Symposium on Advanced Functional Materials (ISAFM), Monash University Malaysia, 2023 Malaysia.
- (5) Eranga Warsakoon, Nuwan Gunawardene, Hasitha Kalahe, **Imalka Munaweera**, Nadeesh Madusanka, Nilwala Kottegoda, Defluorination of Drinking Water using Layered Double Hydroxide, 63-68, Volume 3. International Conference on Sustainable Built Environment. 2010, Kandy, Sri Lanka.
- (6) N Kottegoda, **I Munaweera**, N Madusanka, C Sandaruwan, D Sirisena, N Disanayake, M Ismail, A De Alwis, V Karunaratne, Plant nutrient nanoparticles encapsulated cellulose matrix for slow and sustained release of nitrogen Cellulose Based Slow-Release Nano-Fertiliser, Conference and workshops organized by NSF, 2012, Mt. Lavinia, Sri Lanka.
- (7) Chenchen Bing, Debra Szczepanski, **Imalka Munaweera**, Yu Hong, Ian Corbin, Rajiv Chopra, Acoustic emissions during blood-brain barrier disruption with focused ultrasound and real-time feedback control under infusion administration of microbubbles—feasibility study in rodent model, The International Society for Therapeutic Ultrasound (ISTU)- The 17th International Symposium, Nanjing, China, 2017, Journal of Therapeutic Ultrasound, 2018.

## CONFERENCE PROCEEDINGS/ ABSTRACTS

- (1) S.P.N.C.L. Senevirathna, **Imalka Munaweera**, L. Karunanayake, The 31st PPC Symposium on Petroleum, Petrochemicals, and Polymers and the 16th Research Symposium on Petrochemical and Materials Technology, at Mandarin Hotel Bangkok and The Petroleum and Petrochemical College, Thailand, 25 - 27 June 2025.
- (2) S. Dabare, **I. Munaweera**, Mechanochemical Modification of Eppawala Rock Phosphate Using Oxalic Acid: Structural Transformation and Nutrient Release Potential, 29th Annual Technological Advances in Science, Medicine, and Engineering (TASME) Conference, University of Toronto (at Scarborough), Canada, July 2025.
- (3) V. Pasindu, P. Yapa, S. Dabare, **I. Munaweera**, T. Etampawala, M. Weerasekera, D. Attygalle, S. Amarasinghe, Enhancing Industrial Wastewater Management Through Photocatalytic Degradation of Organic Dyes Using Ni-ZnO nanoparticles incorporated GO Nanohybrid Electrospun Polymeric Membranes: Fabrication, Characterization, and Functional Applications, 29th Annual Technological Advances in Science, Medicine, and Engineering (TASME) Conference, University of Toronto (at Scarborough), Canada, July, 2025.
- (4) Rodrigo L., **Munaweera I.**, Perera W. P. T. D. Biodegradable hydrogel formulation as a slow-release fertiliser: a sustainable alternative for enhanced flowering and crop yield in short-term crop chili (*Capsicum Annuum*), **11th** Consecutive Annual Undergraduate Research Symposium-UNI-IN ALLIANCE 2025, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka, August 2025.
- (5) P.N. Yapa, **I. Munaweera**, M.M. Weerasekera, Enhanced Antifungal Activity of Heterometallic Nanoparticles in Hydrogel Systems for Biomedical Applications, 29th Annual Technological Advances in Science, Medicine, and Engineering (TASME) Conference, University of Toronto (at Scarborough), Canada, July 2025.
- (6) P.N. Yapa, **I. Munaweera**, M.M. Weerasekera, Antifungal efficacy of metallic silica nanohybrids embedded in hydrogel formulations for enhanced dermatological applications, Chemistry in Sri Lanka, The Tri-Annual Publication of the Institute of Chemistry Ceylon, Vol. 42 No. 2, 46, 2025.
- (7) Dinithi Senanayake, Piumika Yapa, Sanduni Dabare, Manjula M. Weerasekera, Thusitha N.B. Etampawala, Maheshika Sethunga, Dinesh Attygalle, Shantha Amarasinghe, **Imalka Munaweera**, Enhanced antimicrobial and anti-inflammatory properties of PCL metal-turmeric oleoresin and metal-curcumin nanohybrids, Chemistry in Sri Lanka, The Tri-Annual Publication of the Institute of Chemistry Ceylon, Vol. 42 No. 2, 47, 2025.
- (8) Viraj Pasindu, Piumika Yapa, Sanduni Dabare, **Imalka Munaweera**, Thusitha Etampawala, Manjula M. Weerasekera, Dinesh Attygalle, Shantha Amarasinghe, Harnessing the Power of Visible Light with GO-Ni-ZnO Nanohybrid Electrospun Polymeric Membranes for Improved Photocatalysis: A Focused Approach to Fabrication, Characterization, and Applications, Chemistry in Sri Lanka, The Tri-Annual Publication of the Institute of Chemistry Ceylon, Vol. 42 No. 2, 48, 2025.
- (9) Hasitha Herath, T.A.V. Pasindu Viduranga, Piumika Yapa, **Imalka Munaweera**, Upeka Samarakoon, Copper-zinc oxide nanohybrids for advanced antimicrobial and photocatalytic applications, Chemistry in Sri Lanka, The Tri-Annual Publication of the Institute of Chemistry Ceylon, Vol. 42 No. 2, 49, 2025.
- (10) Yapa PN, **Munaweera I.**, Weerasekera MM, Weerasinghe L, Combined antibiofilm properties of multimetallic silica polymeric nanohybrids against a broad spectrum of pathogenic microorganisms, 11th International Conference on Multidisciplinary Approaches (iCMA) – 2025, Faculty of Graduate Studies, University of Sri Jayewardenepura, Sri Lanka.
- (11) R.M.A.U.Kumari, **I. Munaweera**, W.P.D. Perera, Preparation and Characterization of High Potassium-Based Micronutrient (Mg, Zn) Nanoparticles Incorporated Slow Released Hydrogel Fertilizer, 29th Annual Technological Advances in Science, Medicine, and Engineering (TASME) Conference, University of Toronto (at Scarborough), Canada July, 2025.
- (12) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, M. Weerasekera. Electrospun Self-Sterilizing Nanofibrous Mats Containing Silver, Copper, and Cobalt Doped Silica Nanohybrids for Potential Synergistic Antimicrobial Applications. ACS Spring 2025 Meeting on 26<sup>th</sup> March 2025, American Chemical Society.
- (13) P. N. Yapa, **I. Munaweera**. Synergistic antibiofilm activity of silver, copper, and cobalt-doped silica nanoparticles against bacteria and fungi. 13<sup>th</sup> YSF Research Symposium organized by the Young Scientists Forum of the National Science and Technology Commission on 24<sup>th</sup> January 2025, Colombo.
- (14) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, and M.M. Weerasekera. Combined Antibiofilm Properties of Multimetallic Silica Polymeric Nanohybrids Against a Broad Spectrum of Pathogenic Microorganisms. 11<sup>th</sup> International Conference on Multidisciplinary Approaches (iCMA) – 2025 organized by University of Sri Jayewardenepura on 03<sup>rd</sup> April 2025.
- (15) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, M.M. Weerasekera, Multimetallic Silica/Polymer Nanohybrids for Self-Sterilizing Synergistic Antifungal Applications, International Conference on Innovation and Emerging Technologies (ICIET), University of Sri Jayewardenepura, Sri Lanka: November 21-22, 2024.
- (16) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, M.M. Weerasekera, Multimetallic Silica Nanohybrids Incorporated Nanofiber Membrane for Potential Synergistic Antibacterial Applications, Frontiers in Chemical Technology – 2, Institute of Chemistry Ceylon, June 21, 2024.

- (17) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, M.M. Weerasekera, Synergistic Activity of Heterometallic Silica Nanohybrids as Potential Antifungal Agents, 2nd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems, Gampaha Wickramarachchi University of Indigenous Medicine, March 01, 2024.
- (18) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, M.M. Weerasekera, Preparation and Characterization of Multimetallic Nanohybrids Reinforced Broad Spectrum Antibacterial Nanofibrous Membrane with Synergistic Self-Sterilizing Activity, International Conference "TASME 2024", University of Toronto, Canada, July 07, 2024.
- (19) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, M.M. Weerasekera, Synergism of Multimetallic Nanohybrids as Promising Antimicrobial Agents with an Expansive Coverage of Microbes, World Forum Women in Science 2024, Rome, Italy, April 16, 2024.
- (20) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, C. Sandaruwan, N.M.C. Nissanka, M.M. Weerasekera, Synthesis, Characterization and Comparison of Metal Doped Silica Nanoparticles for Antibacterial Applications, International Conference on Innovation and Emerging Technologies (ICIET), University of Sri Jayewardenepura, Sri Lanka: November 24-25, 2023.
- (21) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, C. Sandaruwan, M.M. Weerasekera, Multimetallic Nanohybrids as Potential Antimicrobial Agents with Extensive Microbe Coverage to be Used in Personal Care Products, 4th Commonwealth Chemistry Posters, Royal Society of Chemistry, UK, October 04-05, 2023.
- (22) K. Ranathunga, P.N. Yapa, **I. Munaweera**, L. Weerasinghe, Synthesis and Characterization of Visible Light Active Fe Doped ZnO Nanohybrids for Self-Sterilizing Applications, Frontiers in Chemical Technology – 2, Institute of Chemistry Ceylon, June 21, 2024.
- (23) I.P. Madhishika, P.N. Yapa, **I. Munaweera**, L. Weerasinghe, Development of Antimicrobial Agents Intercalated Layered Double Hydroxides Incorporated Nanofiber Based Active Packaging Material, Frontiers in Chemical Technology – 2, Institute of Chemistry Ceylon, June 21, 2024.
- (24) K. Ranathunga, P.N. Yapa, **I. Munaweera**, L. Weerasinghe, Preparation and Characterization of Fe Doped ZnO Nanohybrids as a Potential Self-Sterilizing Photocatalytic Material, 2nd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems, Gampaha Wickramarachchi University of Indigenous Medicine, March 01, 2024.
- (25) I.P. Madhishika, P.N. Yapa, **I. Munaweera**, L. Weerasinghe, Synergistic Activity of Antioxidants Intercalated Layered Double Hydroxides as a Potential Active Packaging Material, 2nd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems, Gampaha Wickramarachchi University of Indigenous Medicine, March 01, 2024.
- (26) Sachini Deshapriya, **Imalka Munaweera**, Photocatalytic visible light active Co doped ZnO/cellulose acetate nanofiber membranes for functional food packaging, American Chemical Society Spring 2024.
- (27) Thanuka Ranathunga, **Imalka Munaweera**, Dilushan Jayasundara, Nilwala Kottegoda, Graphene oxide/natural ilmenite nanocomposites as coatings for preserving perishable fruits, American Chemical Society Spring 2024.
- (28) Sehan Jayasinghe, **Imalka Munaweera**, Chandani Perera, Dumindu Siriwardena, Nilwala Kottegoda, Preparation and characterization of plasma activated, multifunctional, pyrolyzed, coconut coir adsorbent for the removal of pollutants from aqueous and gaseous phases, American Chemical Society Spring 2024.
- (29) Koshila Maduwanthi, **Imalka Munaweera**, Pamoda Perera, Preparation and characterization of sodium alginate-carboxymethyl cellulose based essential nutrient slow release nanohybrids, American Chemical Society Spring 2024.
- (30) De Alwis B, Rathnayake I., **Munaweera I.**, Perera A. D. L. C., Jayasinghe S, Comparative desorption efficiency of Cd(II) and Pb(II) from used plasma-functionalized coconut coir biochar, International Conference on Applied and Pure Sciences, 2024, Faculty of Science, University of Kelaniya, Sri Lanka.
- (31) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, C. Sandaruwan, N.M.C. Nissanka, M.M. Weerasekera, Synthesis, Characterization and Comparison of Metal-doped Silica Nanoparticles for Antibacterial Applications, International Conference on Innovation and Emerging Technologies 2023, Faculty of Technology, University of Sri Jayewardenepura, November 23-24, 2023.
- (32) Koshila Maduwanthi, **I. Munaweera**, W.P.T.D. Perera, Preparation and Characterization of Micronutrient Loaded Hydrogel Nano-hybrids as a Slow-Release Fertilizer, International Conference on Innovation and Emerging Technologies 2023, Faculty of Technology, University of Sri Jayewardenepura, November 23-24, 2023.
- (33) Sayani Nimanka, Nilwala Kottegoda **Imalka Munaweera**, Nimshi Fernando, Nitrogen-fortified humic acid-modified rock phosphate hybrids as precision release nitrogen and phosphorous plant nutrient formulation, American Chemical Society National Meeting Spring 2023, Virtual presentation.
- (34) S.D. Deshapriya, **I. Munaweera**, Visible light active photocatalytic cellulose acetate/Co-ZnO nanofiber membranes for active food packaging, Sri Lanka Association for the Advancement of Science, Proceedings of the 79<sup>th</sup> Annual Sessions, 2022.

- (35) Senuri Kumaraage, Imalka Munaweera, Laksiri Weerasinghe, Chanaka Sandaruwan, Nilwala Kottegoda, Amine-modified silica-cellulose acetate nanofiber membranes for effective removal of hardness and heavy metals in drinking water, 4th Commonwealth Chemistry Posters (/cwcp2023/), October 4 - 5, 2023, Online, United Kingdom.
- (36) Manesha Fernando, **Imalka Munaweera**, Nilwala Kottegoda, Preparation and characterization of a NPK nutrient loaded biodegradable cellulose acetate electrospun nanofiber mat to be used as a slow release fertilizer, American Chemical Society National Meeting Spring 2023, Virtual presentation.
- (37) P.N. Yapa, **I. Munaweera**, L. Weerasinghe, C. Sandaruwan, M.M. Weerasekera, Multimetallic nanohybrids as potential antimicrobial agents with extensive microbe coverage to be used in personal care products, 4th Commonwealth Chemistry Posters (/cwcp2023/), October 4 - 5, 2023, Online, United Kingdom.
- (38) S.D. Deshapriya, **I. Munaweera**, Visible light active photocatalytic cellulose acetate/Co-ZnO nanofiber membranes for active food packaging, 4th Commonwealth Chemistry Posters (/cwcp2023/), October 4 - 5, 2023, Online, United Kingdom.
- (39) Koshila Maduwanthi, **I. Munaweera**, W.P.T.D. Perera, Magnesium, zinc, and copper nutrient nanoparticles infused sodium alginate-carboxymethyl cellulose-based nano-hybrids as an efficient slow-release fertilizer, 4th Commonwealth Chemistry Posters (/cwcp2023/), October 4 - 5, 2023, Online, United Kingdom.
- (40) Fernando W.A.M.B, **Munaweera I**, Kottegoda N, Preparation and Characterization of NPK Nutrient Loaded Electrospun Cellulose Acetate Nanofiber Mat to be used as a Slow-release Fertilizer, 27th International Forestry and Environment Symposium 2023, University of Sri Jayewardenepura, 2023.
- (41) Fernando W.A.M.B, **Munaweera I**, Fabrication and characterization of N, P, K nutrient-loaded electrospun cellulose acetate nanofiber mats to be used as a slow-release fertilizer, Sri Lanka Association for the Advancement of Science, Proceedings of the 78<sup>th</sup> Annual Sessions, 2022.
- (42) Senuri Kumaraage, **Imalka Munaweera**, Chanaka Sandaruwan, Nilwala Kottegoda, Electrospun cellulose acetate/amine-functionalized mesoporous silica nanofibers for efficient removal of calcium ions in drinking water, American Chemical Society National Meeting Fall 2022.
- (43) Piyumi K. Kodithuwakku, Dilushan Jayasundara, **Imalka Munaweera**, Randika Jayasinghe, Tharanga Thoradeniya, Manjula Weerasekera, Achala Bogahawatta, Nilwala Kottegoda, American Chemical Society National Meeting Fall 2022.
- (44) Chamalki Madhusa, **Imalka Munaweera**, Chandani Perera, Chanaka Sandaruwan, Nilwala Kottegoda, Preparation and characterization of polycaprolactone nanofibrous membrane embedded copper doped activated carbon nanoparticles for water filtration, American Chemical Society National Meeting Fall 2022.
- (45) S.M.M.C. Sethunga, K.K.D.S. Ranaweera, **I. Munaweera**, K.D.P.P. Gunathilake, Enzyme assisted extraction of ginger (*zingiber officinale*) oil and the effect of enzyme pre-treatment on extraction yield and  $\alpha$ -zingiberene CONTENT, International Conference on Food Research Development and Applications 2022, University of Sri Jayewardenepura.
- (46) S.H. Kumaraage and **I. Munaweera**, Amine functionalized mesoporous silica nanoparticles incorporated electrospun cellulose acetate nanofibers for effective removal of  $\text{CaCO}_3$  in drinking water, Sri Lanka Association for the Advancement of Science, Proceedings of the 78<sup>th</sup> Annual Sessions, 2022.
- (47) A. Pathiraja, S.H. Kumaraage and **I. Munaweera**, Enhanced removal of heavy metals in wastewater using amino mesoporous silica nanoparticles, Sri Lanka Association for the Advancement of Science, Proceedings of the 78<sup>th</sup> Annual Sessions, 2022.
- (48) M.L.C. Madhusa, G.K.M. Rajapaksha and **I. Munaweera**, A facile greener approach to synthesize curcuminoids incorporated layered double hydroxides, Sri Lanka Association for the Advancement of Science, Proceedings of the 77<sup>th</sup> Annual Sessions, 2021.
- (49) Chamalki Madhusa, Thushani Jayasundara, **Imalka Munaweera**, Chandani Perera, Gayan Wijesinghe, Manjula Weerasekera, Chanaka Sandaruwan, Nilwala Kottegoda, Preparation and Characterization of Antibacterial Copper Doped Activated Carbon from Coconut Coir and its Application in Removal of Hardness and Fluoride in Drinking Water, American Chemical Society Fall 2021.
- (50) Dulanjalee Gajasinghe, Chamalki Madhusa, **Imalka Munaweera**, Nilwala Kottegoda, Mechanochemical preparation and characterization of citric acid intercalated Layered Double Hydroxides (CA-LDH) /montmorillonite clay (CA-MMT) nanohybrids, American Chemical Society Fall 2021.
- (51) Prasad Dissanayake, Chamalki Madhusa, **Imalka Munaweera**, Nilwala Kottegoda, Samitha Deraniyagala, Gayan Wijesinghe, Manjula Weerasekera, Facile Approach to Synthesize and Characterization of Cobalt Doped Titanium Dioxide from Natural Ilmenite to be Used as a Photocatalytic/Antibacterial Agent Under Visible Irradiation, American Chemical Society Fall 2021.
- (52) Maheshika Sethunga, K. K. D. S. Ranaweera, K. D. P. P. Gunathilake, **Imalka Munaweera**, Evaluation of the Antioxidant Activity in Cinnamon, Clovebud and Ginger Essential Oils and Oleoresins, International Conference on Multidisciplinary Approaches in Science 2021, Track: B, Faculty of Science, University of Colombo, 2021.

- (53) S. M. M. C. Sethunga, K. K. D. S. Ranaweera, **I. Munaweera**, and K. D. P. P. Gunathilaka, Enzyme-assisted extraction of cinnamon (*Cinnamomum zeylanicum*) bark oil and its effect on extraction yield and quality, International Conference on Applied and Pure Sciences, Faculty of Science, University of Kelaniya, 2021.
- (54) S. M. M. C. Sethunga, K. K. D. S. Ranaweera, **I. Munaweera**, and K. D. P. P. Gunathilaka, Enzyme-assisted extraction of oleoresin from cinnamon (*Cinnamomum zeylanicum*) and its effect on trans-cinnamaldehyde content and yield, Proceedings of the Young Scientists' Conference on Multidisciplinary Research-2021, Young Scientists' Association, National Institute of Fundamental Studies, 2021.
- (55) S.M.M.C. Sethunga, K.K.D.S. Ranaweera, **I. Munaweera**, K.D.P.P. Gunathilake, Enzyme-assisted extraction of oleoresin from ginger (*Zingiber officinale*) and its effect on extraction yield and gingerol and shogaol content, Proceedings of the Young Scientists' Conference on Multidisciplinary Research-2022, Young Scientists' Association, National Institute of Fundamental Studies, Sri Lanka, 2022.
- (56) Sethunga SMMC, Ranaweera KKDS, Gunathilake KDPP, **Munaweera I**, Comparative evaluation of essential oil and oleoresin extraction from *Cinnamomum zeylanicum*, *Zingiber officinale*, *Syzygium aromaticum*, 9<sup>th</sup> International Conference on Multidisciplinary Approaches 2022, Faculty of Graduate Studies, University of Sri Jayewardenepura, 2022.
- (57) Jacques Lux, **Imalka Munaweera**, Christopher Malone, Jonathan Minnig, Robert Mattrey, Detection of Pathophysiologic Levels of Hydrogen Peroxide With Ultrasound Imaging Using Enzyme-Containing Nanoparticles, AIUM, Florida, 2017.
- (58) Yi Shi, **Imalka Munaweera**, Bhuvaneswari Koneru, Amit Patel, Mai H Dang, Kenneth J Balkus Jr, Anthony J Di Pasqua, Nitric oxide- and cisplatin-releasing amine-modified mesoporous silica nanoparticles for the treatment of non-small cell lung cancer, Research appreciation day, University of North Texas Health Science Center, Fort Worth, April 15, 2016.
- (59) Bhuvaneswari Koneru, Yi Shi, **Imalka Munaweera**, Emily Zangla, Kenneth J Balkus Jr, Anthony Di Pasqua, Radiotherapeutic Bandage for the Treatment of Skin Cancer, Research appreciation day, University of North Texas Health Science Center, Fort Worth, April 15, 2016.
- (60) Yi Shi, **Imalka Munaweera**, Daniel Levesque-Bishop, Ali Aliev, Ruben Saez, Kenneth Balkus, Jr., Anthony Di Pasqua. Neutron-activatable holmium-containing nanoparticles for the treatment of non-small cell lung and skin cancers, Research appreciation day, University of North Texas Health Science Center, Fort Worth, April 17, 2015.
- (61) **Imalka Munaweera**, Novel radiotherapeutic electrospun acrylonitrile-based fiber mats for the treatment of skin cancer, The Fiber Society 2014 Fall Meeting and Technical Conference, Chemical Heritage Foundation, Drexel University, Philadelphia, Pennsylvania, October 22–24, 2014.
- (62) **Imalka Munaweera**, Yi Shi, Bhuvaneswari Koneru, Ruben Saez, Russell Coyle, Ali Aliev, Anthony J. Pasqua and Kenneth J. Balkus. Novel chemoradiotherapeutic magnetic nanoparticles for targeted treatment of non-small cell lung cancer, 14AIChE Annual meeting, Atlanta, GA, November 16-21, 2014;
- (63) Zijie Wang, **Imalka Munaweera**, Kenneth J. Balkus, Jr., Synthesis of titanium containing porous silica nanospheres with flower-type morphology, 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, TX, United States, November 19-22, 2014;
- (64) Wijayantha A. Perera, **Imalka Munaweera**, Michael Trinh, Yuchi Gao, John P. Ferraris, Yves J. Chabal, Kenneth J. Balkus, Jr. Binder free graphene-sodium niobate nanotubes/ nanorods composite electrodes for supercapacitors, 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, TX, United States, November 19-22, 2014.
- (65) Michael N. Trinh, **Imalka Munaweera**, Kenneth J. Balkus Jr., Synthesis of holmium metal-organic cubes for enhanced cancer radiotherapy, 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, TX, United States, November 19-22, 2014.
- (66) Yi Shi, **Imalka Munaweera**, Daniel Levesque-Bishop, Ali Aliev, Ruben Saez, Kenneth Balkus, Jr., Anthony Di Pasqua. Holmium nanoparticles for the treatment of non-small cell lung and skin cancers, 2014 AAPS Annual Meeting and Exposition, San Diego, November 2-6, 2014.
- (67) **Imalka Munaweera**, Yi Shi, Bhuvaneswari Koneru, Ruben Saez, Ali Aliev, W. Russell Coyle, Anthony J. Di Pasqua, Kenneth J. Balkus Jr. Novel chemoradiotherapeutic magnetic nanoparticles for targeted treatment of non-small cell lung cancer, 248th ACS National Meeting & Exposition, 2014, San Francisco, CA, USA, August 10-14, 2014.
- (68) **Imalka Munaweera**, Yi Shi, Bhuvaneswari Koneru, Ruben Saez, Ali Aliev, W. Russell Coyle, Anthony J. Di Pasqua, Kenneth J. Balkus Jr. Novel chemoradiotherapeutic magnetic nanoparticles for targeted treatment of non-small cell lung cancer, 47th American Chemical Society Meeting in Miniature, Dallas, TX, USA, April 26, 2014.

- (69) **Imalka Munaweera**, Daniel Levesque-Bishop, Yi Shi, Anthony J Di Pasqua, Kenneth J. Balkus, Jr. Holmium iron garnet containing acrylonitrile-based electrospun bandages for skin tumour therapy, 247th ACS National Meeting & Exposition, Dallas, TX, USA, March 16-20, 2014.
- (70) **Imalka Munaweera**, Yi Shi, Anthony J Di Pasqua, Kenneth J. Balkus, Jr. Platinum drug loaded holmium iron garnet nanoparticles enhance combination chemotherapy and radiation therapy, 247th ACS National Meeting & Exposition, Dallas, TX, USA, March 16-20, 2014.
- (71) Daniel S Bishop, **Imalka Munaweera**, Yi Shi, Anthony J Di Pasqua, Kenneth J. Balkus, Jr. Electrospun holmium iron garnet/poly acrylonitrile bandages for skin tumor therapy, 69th Southwest Regional Meeting of the American Chemical Society, Waco, TX, United States, November 16-19, 2013.
- (72) Kenneth J. Balkus, Jr., **Imalka Munaweera**, Yi Shi, Anthony J Di Pasqua, Synthesis and characterization of holmium and dysprosium containing garnet nanoparticles for radiotherapy, 65th Southeast Regional Meeting of the American Chemical Society, Atlanta, GA, United States, November 13-16, 2013.
- (73) **Imalka Munaweera**, Jessica Hong, Michael Trinh, K. J. Balkus, Jr. Chemically powered nanomotor. 246th ACS National Meeting & Exposition, Indianapolis, IN, USA, September 8-12, 2013.
- (74) **Imalka Munaweera**, K. J. Balkus, Jr. Electrospun cellulose acetate: Garnet nanocomposite fibers with magnetic properties. 245th ACS National Meeting & Exposition, New Orleans, LA, USA, April 7-11, 2013.

## MEMBER OF NATIONAL / INTERNATIONAL COMMITTEES

- National Chair, *International Chemical Biology Society* – Outreach and Services Committee (2021 – Present)
- Member, *Olympiad Committee*, Institute of Chemistry Ceylon (2022)
- Member, *Committee for Training Seminars and Workshops*, Institute of Chemistry Ceylon (2022)
- Member, *Continuous Professional Development (CPD) and Recognition Committee*, Institute of Chemistry Ceylon (2022)
- Member, *Quality Assurance Committee*, Institute of Chemistry Ceylon (2022)
- Member, *Sri Lanka Association for the Advancement of Science (SLAAS)* (2021 – 2024)

## PROFESSIONAL TRAINING

- Grant Writing Workshop – *University of Texas Southwestern Medical Center*, USA (2017)
- Laboratory Safety and Hazard Management Training – Handling of Biohazardous Materials, Chemicals, and Radioactive Substances
  - *University of Texas Southwestern Medical Center*, USA (2015)
  - *University of North Texas Health Science Center*, USA (2014)
- Malvern Zetasizer Training – *India* (2010)
- Internal Auditing of Laboratory Management Systems (ISO/IEC 17025:2005) – *Sri Lanka* (2009)

## PROFESSIONAL MEMBERSHIPS

- American Chemical Society (ACS) — *Member* (2011 – Present)
- Golden Key International Honour Society — *Member* (2014 – Present)
- Royal Society of Chemistry (RSC) — *Member* (Jun 2015 – Jun 2024)
- National Postdoctoral Association (NPA) — *Member* (2015 – Present)
- Organization for Women in Science for the Developing World (OWSD) — *Member* (2021 – Present)
- International Chemical Biology Society (ICBS) — *Member* (2021)
- Sri Lanka Association for the Advancement of Science (SLASS) — *Member* (2020 – Present)
- Sri Lankan Academy of Young Scientists (SLAYS) — *Member* (2021)
- Institute of Chemistry Ceylon — *Member* (2021 – Present)