CCS Researcher of the Year Award

Awarded annually to a full time internal academic of the College of Chemical Sciences, Institute of Chemistry Ceylon, for the most outstanding contributions to scientific research in the course of a particular year. The criteria for the evaluation of the awardee includes peer-reviewed scientific publications, including research articles, review articles, and book chapters, conference presentations and Web of Science citations garnered throughout the course of the year.

CCS Researcher of the Year Award - 2022

Dr. Gobika Thiripuranathar obtained the Graduateship in Chemistry qualification with first class honors from the College of Chemical Sciences, Institute of Chemistry Ceylon and topped winning the Shireen Jayasuriya Memorial Gold Medal in 2006. She secured the ORSAS/HW research scholarship to continue with her PhD in Heriot-Watt University, Scotland, where she worked on polyhedral boron cluster chemistry. Dr. Gobika has 23 peer reviewed publications to her name and 25 communications, with 240 citations and an h-index of 9. Her publications include 7 review articles, and 16 original research articles. Her interest in research focuses on sustainable production of nanomaterials towards value addition. Dr Gobika currently serves as a senior lecturer and the Head of the Department of Chemistry at the College of Chemical sciences, Institute of Chemistry Ceylon.

Abstract of the CCS Researcher of the Year Award - 2022

Sustainable production of nanomaterials and their activities

Gobika Thiripuranathar

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Agriculture is the mainstay of the livelihoods of Sri Lankans. Over the years, the horticulture sector, which includes fruits and vegetables, has gained significant importance and is identified as one of the major contributors to the agriculture sector. Due to Sri Lanka's tropical climate and geography, over 80 varieties of fruits and vegetables are being produced. Sri Lankan fruits, including mango, papaya, pineapple, avocado, banana, watermelon, rambutan, mangosteen, wood apple, guava, pomegranate, and jackfruits are very popular across the globe due to their characteristic color, flavor, and aroma. At present, 69,800 hectares are used for cultivating fruits, and from that, the average annual production of fruits is about 590,000 metric tonnes. Among the produced, 50-55% is consumed by Sri Lankans, and 30-40% is wasted mainly due to storage and transportation issues. About 11% is exported, mainly to United Arab Emirates, India, and the Maldives, either in the fresh or mainly in processed form. The consumption of these fruits by Sri Lankans or export after processing produces a huge amount of fruit waste and could lead to substantial land, water, or air pollution. However, valorization reduces environmental pollution and leads to value-added products, thus creating subsidiary markets and income. Besides, the research carried out by our group on fruit wastes of a few varieties of *Mangifera indica* (karuthacolomban, vellaicolomban, and Willard), peel, and seed kernel, exhibited significant biological activities and in a few cases higher than the consumable portion, pulp, and the standard. An alternate way of getting the maximum benefit from fruit waste is synthesizing nanomaterials as they exhibit unique and significantly

improved physicochemical and biological properties than their bulk materials due to their diminutive size. Hence, their applications are widespread and are being used in almost every field. The nanomaterials produced from fruit wastes have several competitive advantages over the other physical and chemical methodologies as the phytochemicals in the fruit wastes act as reducing, capping, and stabilizing agents. Besides, these green syntheses involve a single-step, environmentally friendly procedure and lead to the sustainable production of nanomaterials. All above, the environmental pollution that arises due to dumping the fruit wastes into landfills could be reduced significantly. Interestingly, the research carried out by our group on the biological activities of nanoparticles (NPs) synthesized from several fruit wastes exhibited remarkably higher biological activities compared to the waste extracts of the respective fruits. Hence, conducting further research, the NPs produced from these wastes could be utilized for value addition.

Theme Seminar on

Shaping Minds to Break Through Frontiers in Chemical Research

Date : 23.06.2022 via ZOOM

Programme

9.00 a.m.	Registration
9.20 a.m.	Welcome address **Prof. S A Deraniyagala** *President, Institute of Chemistry Ceylon*
9.30 a.m.	**Dr. Wasundara Fernando** Mechanisms of Breast Cancer Progression and Development of Novel Treatment Options *Postdoctoral Scholar, Department of Pathology, Faculty of Medicine, Dalhousie University, Canada*
10.15 a.m.	**Dr. Ann Sanoji Samarakkody** A Journey: from a Chemist to a Cancer Biologist *Research Fellow, Boston Children's Hospital and Harvard Medical School, Boston, USA*
11.00 a.m.	**Dr. Angelo Gunasekera** Multiplexed Assays for point-of-care diagnostic applications *Senior Director, R&D Chembio Diagnostic Systems Inc, New York, USA*
11.45 a.m.	**Dr. Chandrasiri Jayakody** Solid Solutions for Fluid Challenges *Director of Innovation and Product Development, Porex Technologies Corporation, Filtration Group, USA*
1.30 p.m.	**Dr. Buddini Karawdeniya** From Nanopore to Nanowire Sensors: Can Our Health be in Our Hands? *Research Fellow, Research School of Physics, Australian National University, Australia*
2.15 p.m.	**Dr. Nuwan Bandara** A Nanoscale Aperture with Molecular-level Fingerprinting Prospects *Research Fellow, The Australian National University, Australia*
3.00 p.m.	Vote of thanks