

DILHARA SETHUNGA (PhD)

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PROFESSIONAL QUALIFICATIONS

Senior Lecturer (Grade II) – July 2021 - Present

Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka

- Lecturing for DCPE undergraduates
2020 Curriculum (New) Modules: Separation Processes, Process Dynamics and Control, Process Modelling and Simulation, Process Optimization, Waste to Energy, Environmental Engineering and Management
- Module Coordination
CH4016: Comprehensive Design Project I, CH2270: Lab Practices II
- Undergraduate and post graduate Research Projects Supervision
- Undergraduate Design Project Supervision
- Laboratory In-charge of 24/7 Laboratory
- Academic mentor
- Member of the Curriculum Development Team for of BSc (Hons) Chemical and Process Engineering programme, University of Moratuwa
- Senior Treasurer, Chemical Engineering Students' Society, University of Moratuwa
- DCPE Representative of Research Degree Board of Studies, Faculty of Engineering
- DCPE Representative of Orientation Committee, Faculty of Engineering
- Conference Chair of ChemEIcon for the year 2025, International Research Conference, DCPE, UoM
- Financial Chair and Publicity Chair of ChemEIcon, International Research Conference 2024, DCPE, UoM
- Track Chair of Chemical and Process Engineering in MERCon 2025, 2023, and 2022
- Lecturer of MSc in Sustainable Process Engineering, DCPE, UoM
Modules: Chemical Engineering Principals, Process Safety and Risk Management, Process Analysis and Mapping)
- UoM Program Coordinator and a Course Coordinator of MSc for Energy in Circular Economy, UoM
Course coordinator and teacher of Professional Ethics, Small Hydro Power Systems

Lecturer (Unconfirmed) – January 2021 – July 2021

Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka

- Lecturing for DCPE undergraduates
Heat and Mass Transfer, Unit Operations I, Environment Science and Technology, Safety and Loss Prevention, Environment Engineering and Management, Process Modelling and Simulation, Process Dynamics and Control, Process Synthesis and Integration
- Module Coordination
CH4015: Comprehensive Design Project I
- Undergraduate and post graduate Research Projects Supervision
- Undergraduate Design Project Supervision
- Laboratory In-charge of 24/7 Laboratory, Process Control Laboratory
- Academic mentoring
- Member of the Curriculum Development Team for of BSc (Hons) Chemical and Process Engineering programme, University of Moratuwa
- Track Chair of Chemical and Process Engineering in MERCon.
- Lecturer of MSc in Sustainable Process Engineering, DCPE, UoM
Modules: Chemical Engineering Principals, Process Safety and Risk Management, Process Analysis and Mapping)

Lecturer (On contract) – July 2019 – January 2021

Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka

- Lecturing for DCPE undergraduates.
2015 Curriculum Modules: Environment Science and Technology, Unit Operations I, Heat and Mass Transfer, Safety and Loss Prevention, Environmental Engineering and Management.
- Undergraduate Research project and design project supervisor.
- Development of 24×7 post graduate research lab (designing and upgrading the facility)
- Deputy Work Package Leader and Task leader of EUSL-energy (Europe Sri Lanka Capacity Building in Energy Circular Economy) MSc curriculum development project. (<https://eusl-energy.firebaseio.com/index.html>)
- Team member of EUSL-TESS project for curriculum development in waste management at UNIVOTEC and MSc degree program at UoJ
- Reviewer in MERCon since 2017, Renewable and Sustainable Energy Reviews (peer review journal, Impact Factor 12.110) since 2020

Teaching and Research Assistant – August 2016 – July 2018

School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore

- Obtained certificate course on University Teaching for Teaching Assistants

- Teaching assistant for BG2802 (Bioengineering Laboratory 1A_ Evaluation of Structure Properties in a Ligament-Bone System, semester 2, demonstrator) and CH2802 (Chemical & Biomolecular Engineering Laboratory 4_ Characteristics and Performance of Centrifugal Pumps, Semester 2, demonstrator)
- Teaching Assistant for CH1104 (Materials & Energy Balances (4 AU), paper marking)
- Conducting research and preparing project reports for research grant EWI-IRIS (1301-IRIS-49) offered by Singapore Public Utility Board

Instructor – April 2015 – July 2015

Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka

- Instructor for Fluid mechanics and Environment Science modules

Engineering Trainee – November 2013 - May 2014

Asia Pacific Brewery Lanka Ltd

- Development of a simulation for Mashing process in Asia Pacific Brewery Lanka Ltd.
- Creating modules in a CMMS (Maximo) Project at APBLK

Visiting Lecturing Positions

- Faculty of Technology, Department of Biosystems Technology, Sabaragamuwa University of Sri Lanka (BSc. Program- Modules Undertaken: Pollution Control of Bioenergy Technologies, Quality measurement and analytical methods)
- Faculty of Applied Sciences, Department of Polymer Science, University of Sri Jayewardenepura, Sri Lanka (MSc in Polymer Science and Technology, Modules undertaken: MPST 515- Process Engineering)
- Faculty of Engineering Technology, Department of Mechanical & Manufacturing Technology, University of Vocational Technology, Sri Lanka (BSc Program-Modules undertaken: Solid and Hazardous waste management)
- Visiting Lecturer, Department of Chemistry, University of Sri Jayewardenepura, Sri Lanka (BSc Program-Modules undertaken: Process Engineering Fundamentals)

Post Graduate Research Supervision

- Supervision of MSc Research (on-going) “Cellulose-Based Biopolymeric Membranes from Water Hyacinth and Rice Husk for Sustainable Wastewater Treatment: Exploring Efficacy and Scalability in Environmental Remediation”, 1 year MSc by Research, Department of Chemical and Process Engineering, University of Moratuwa
- Supervision of MSc Research (on-going) “valorization of rice husk for silica nanoparticle production: optimization of synthesis parameters and economic feasibility”, MSc / PG

Diploma in Energy Technology, Department of Mechanical Engineering, University of Moratuwa

- Supervision of MSc Research in MSc for Energy in Circular Economy Program (on-going)
Research Titles: Investigate the integration of solar thermal energy with membrane distillation (MD) processes for desalination, Assess the Feasibility of Integrating Renewable Energy Sources in Seawater Reverse Osmosis Desalination Plants
- Co-supervision of one PhD student (Joint supervision with UniSQ, Australia) (on-going)
Research Title: High performance Mixed Matrix Thin Film Composite Membrane for phytochemicals separation from waste citrus peels via solvent resistive nano filtration
- Co-supervision of two Full time MSc Students registered under the Department of Chemical and Process Engineering, University of Moratuwa (completed)
Research Titles: Process simulation-based Life Cycle Assessment for fuel-grade bioethanol production from paddy rice straw, Life Cycle Assessment of bioethanol production from Water Hyacinth using process simulation

RESEARCH GRANTS

- Senate Research Committee Grant 2024 (Short Term) for “*Upcycling of Acrylonitrile Butadiene Styrene (ABS) waste and cellulosic biowaste into forward osmosis (FO) membranes for wastewater treatment*”, Grant No: SRC/2024/ST/20, Value LKR 600,000.00, Start Date: 01/08/2024, End Date: 01/05/2025
- Senate Research Committee Grant 2024 (Long Term) for “*Cellulose-Based Biopolymeric Membranes from Water Hyacinth and Rice Husk for Sustainable Wastewater Treatment: Exploring Efficacy and Scalability in Environmental Remediation*”, Grant No: TBA, Value LKR 1,500,000.00, Start Date: 01/03/2025

NATIONAL LEVEL SERVICES

- Member of the Technical Expert Committee Meeting for the Implementation of the Basel Convention

WORKSHOP/TRAINING/CONFERENCES PARTICIPATION

- University of Kelaniya, Sri Lanka – University Teacher Training Unit, Six (06) Months Induction Training on Teaching in Universities and Higher Educational Institutes
- On-line Training of SAARC Professional on Small, Mini and Micro Hydro Power Generation 13 - 17 September 2021
- Workshop on Challenge Driven Learning – EUSL Energy in Circular Economy project from 22nd to 24th August 2022 at Open University of Sri Lanka
- Curriculum Development Workshop Waste Treatment Valorization Education in Sri Lanka (EUSL-TESS) 04 - 08 April 2022, Galadari Hotel, Colombo, Sri Lanka

- MerCon 2023-Pannelist Chemical and Process Engineering Track on 09th November 2023, University of Moratuwa

CONSULTANCY PROJECTS

- Rehabilitation and Augmentation of Embilipitiya Paper Mill –Environmental Impact Assessment- Through Uni Consultancy Services 2020
- Recommendation for Troubleshooting the Seawater Desalination (SWRO) Plant at Negambo for National Water Supply and Drainage Board – 2021 (free service, individual)
- Xpress Pearl Damage Assessment – under the subgroup of Fate of Chemicals as sea modeling and assessment
- Recommendations for Environment laboratory development at University of Kelaniya, (environmental technology laboratory that supports the current and emerging teaching and learning methodologies in the Engineering technology discipline is established in the proposed laboratory building, considering the appropriateness of the layouts of the laboratory, specifications of the equipment and the provision of necessary laboratory services, consultancy assignment is to ensure that a modern and cost-effective)
- TEC member appointed by University of Moratuwa for recommendations regarding the compliance of the grease manufacturing plant established by Prista Oil Holding EAD (represented by Desha Shakthi Private Limited in Sri Lanka) with the minimum requirements specified in Annex 01 issued by the Ministry of Energy, Sri Lanka. (2025)

PROFESSIONAL PROFILES

Researchgate: https://www.researchgate.net/profile/Dilhara_Sethunga

Google Scholar: <https://scholar.google.com/citations?user=5Pm7fXYAAAAAJ&hl=en>

Publon: <https://publons.com/researcher/1874371/dilhara-p-sethunga/>

ORCID: <https://orcid.org/0000-0003-2361-2029>

Manderley: <https://www.mendeley.com/profiles/dilhara-sethunga/>

SELECTED PUBLICATIONS

Journal Papers

1. **Sethunga, G. S. M. D. P.**, Rongwong, W., Wang, R., & Bae, T. H. (2018). Optimization of hydrophobic modification parameters of microporous polyvinylidene fluoride hollow-fiber membrane for biogas recovery from anaerobic membrane bioreactor effluent. *Journal of Membrane Science*, 548, 510-518.
2. **Sethunga, G. S. M. D. P.**, Karahan, H. E., Wang, R., & Bae, T. H. (2019). PDMS-coated porous PVDF hollow fiber membranes for efficient recovery of dissolved biomethane from anaerobic effluents. *Journal of Membrane Science*, 584, 333-342.

3. **Sethunga, G. S. M. D. P.**, Lee, J., Wang, R., & Bae, T. H. (2019). Influence of membrane characteristics and operating parameters on transport properties of dissolved methane in a hollow fiber membrane contactor for biogas recovery from anaerobic effluents. *Journal of Membrane Science*, 589, 117263.
4. Rongwong, W., Goh, K., **Sethunga, G. S. M. D. P.**, & Bae, T. H. (2019). Fouling formation in membrane contactors for methane recovery from anaerobic effluents. *Journal of Membrane Science*, 573, 534-543.
5. Chuah, C. Y., Li, W., Samarasinghe, S. A. S. C., **Sethunga, G. S. M. D. P.**, & Bae, T. H. (2019). Enhancing the CO₂ separation performance of polymer membranes via the incorporation of amine-functionalized HKUST-1 nanocrystals. *Microporous and Mesoporous Materials*, 290, 109680.
6. Samarasinghe, S. A. S. C., Chuah, C. Y., Li, W., **Sethunga, G. S. M. D. P.**, Wang, R., & Bae, T. H. (2019). Incorporation of CoIII acetylacetonate and SNW-1 nanoparticles to tailor O₂/N₂ separation performance of mixed-matrix membrane. *Separation and Purification Technology*, 223, 133-141.
7. **Sethunga, G. S. M. D. P.**, Lee, J., Wang, R., & Bae, T. H. (2020). Influences of operating parameters and membrane characteristics on the net energy production in dense, porous, and composite hollow fiber membrane contactors for dissolved biomethane recovery. *Journal of Membrane Science*, 610, 118301.
8. Samarasinghe, S. A. S. C., Chuah, C. Y., Karahan, H. E., **Sethunga, G. S. M. D. P.**, & Bae, T. H. (2020). Enhanced O₂/N₂ separation of mixed-matrix membrane filled with pluronic-compatible cobalt phthalocyanine particles. *Membranes*, 10(4), 75.
9. **Sethunga, G. S. M. D. P.**, Karahan, H. E., Wang, R., & Bae, T. H. (2021). Wetting-and fouling-resistant hollow fiber membranes for dissolved methane recovery from anaerobic wastewater treatment effluents. *Journal of Membrane Science*, 617, 118621.
10. Abeysuriya, D. I., **Sethunga, G. S. M. D. P.**, & Rathnayake, M. (2024). Process simulation–based scenario analysis of scaled-up bioethanol production from water hyacinth. *Biomass Conversion and Biorefinery*, 14(15), 17677-17692.

Conference Proceedings

1. Samarathunga, I. R., Epaarachchi, J., **Sethunga, G. S. M. D. P.**, & Herath, M. (2024, February). Acrylonitrile Butadiene Styrene (ABS) membrane for air filtration. In *11th Australasian Congress on Applied Mechanics (ACAM2024)* (pp. 221-234). Brisbane: Engineers Australia.
2. Aynkaran, A, Ahamed, S., & **Sethunga, G. S. M. D. P.**, (2023, March) Modelling and Economic analysis of Recovering Acetonitrile from Wastewater using Adsorption and Membrane Pervaporation, In *9th International Symposium on Advances in Civil and*

Environmental Engineering Practices for Sustainable Development (ACEPS,2023) (pp. 121-128). University of Ruhuna, Sri Lanka.

3. Edirisinghe S.K., **Sethunga G.S.M.D.P.**, Warahena A.S.K., Narayana M, Samarakoon G.L.S.A., “*A case study on the need assessment for innovating a new curriculum for the Engineering Technology Undergraduate Studies*”, National Engineering Research Symposium (NERS 2022), National Engineering Research and Development Centre of Sri Lanka.

ACHIEVEMENTS

- 2023** Best Research Project (Effect of Filler Material in Urea Formaldehyde Adhesives used in Wood Composite Manufacturing Industry) under the sub-session “Process Development and Optimization” at ChemECon 2023, organized by department of Chemical and Process Engineering, University of Moratuwa
- 2015** Gold medalist for the best academic performance of Department of Chemical and Process Engineering in General convocation 2015 at University of Moratuwa
- 2011-2014** Winner of the Ceylon Tobacco Scholarship for the best academic performance in 2011-2012 in Annual Award ceremony, University of Moratuwa.
- Winner of Thusitha Senevirathna Memorial Award and Scholarship for the best academic performance in 2012-2013, 2013-2014 in Annual Award ceremony, University of Moratuwa.
- Dean’s list for semesters 2,3,4,5,7 and 8
- 2010** Ceylinco Life Pranama Scholarship awardee for G.C.E A/L examination held in year 2009 for Kurunegala District
- 2001 – 2008** Zonal level winner of “Creative Writing” (2000-2008) and “Drama” (2006-2008) of English Day Competition, Championship in Divisional level volleyball competition (under 15) 2003

EDUCATIONAL QUALIFICATIONS

Doctor of Philosophy on Sustainable Earth – July, 2015 to July, 2019 Nanyang Technological University, Singapore

- **Degree Confirmed:** 31.03.2020
- **Thematic research-based program:** Sustainable Earth, Interdisciplinary Graduate School
- **Research Title:** Hollowfiber membrane contactors for dissolved methane recovery from anaerobic reactor effluents
- **Academic Performance:** 4.75/5 (Modules taken: Advanced Reaction Engineering, Hazardous Waste Treatment and Recovery, Air Quality Management, Membrane Science and Technology, Photoelectrochemistry, Research Methods)

BSc (Hons) of Engineering – June, 2010 to April, 2015 University of Moratuwa, Sri Lanka

- **Degree Confirmed:** 01.05.2015
- **Field of Specialization:** Chemical and Process Engineering
- **Academic Standing:** First Class
- **Achievements:** Gold Medalist for the Best Academic Performance in Chemical and Process Engineering, General Convocation 2015

GCE Advanced Level Examination - 2009 August, Mayurapada National School, Narammala, Sri Lanka)

- **Island Rank:** 166
- **District Rank (Kurunegala):** 15
- **Results:** Combined Mathematics A, Physics A, Chemistry A, General English B

GCE Ordinary Level Examination - 2005 December, Mayurapada National School, Narammala, Sri Lanka

- **Results:** Mathematics A, Science A, English A, Sinhala Language and Literature A, Buddhism A, Social Studies A, History A, Aesthetic Subject (Dancing) A, Business Studies & Accounting A, English Literature B

PERSONAL PROFILE

Name in Full : Godakooru Sethunga Mudiyanseilage Dilhara Prebhashwari Sethunga

Date of Birth : 03 November 1989

Nationality : Sri Lankan

NIC No. : 898081060V

Permanent Address : Weere, Metiyagane (via Kurunegala)