Navodi Jayarathne J R R

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Full Name : Jayalath Ralalage Rashitha Navodi Jayarathne

EDUCATION

2020 August – Present PhD Student, Department of Civil Engineering, College of Engineering, The University of Texas at Arlington, USA

2020 - Master of Philosophy (Civil Engineering), University of Peradeniya, Sri Lanka.
Thesis: Experimental and Numerical Investigation of Greenhouse Gas Emissions from Differently-Characterized soils

2017 - Honours Degree of Bachelor of the Science of Engineering - Second Class Upper Division - South Eastern University of Sri Lanka, Sri Lanka.
Thesis: Experimental Investigation and Comparison of the Properties of Ordinary and Blended Cement Grouts

AWARDS, RECOGNITIONS AND SCHOLARSHIPS

- **Pipeline and Hazardous Material Safety Administration (PHMSA)** funding to purse a full-time research in Doctor of Philosophy in Civil Engineering, USA (2020 onwards)
- **Recognition of the first authored paper** Jayarathne, J.R.R.N., Chamindu Deepagoda T.K. K, Clough T.J., Nasvi M.C.M., Thomas S., Elberling B., Smits K., 2019. Gas-Diffusivity Based Characterization of Aggregated Agricultural Soils. Soil Science Society of America Journal, doi: 10.1002/saj2.20033 by CSA magazine of Soil Science Society of America to publish in their April issue
- **Best Paper and Presenter Award** – 7th International Symposium on Advances in Civil and Environmental Engineering Practices for Sustainable Development (ACEPS 2019) – Faculty of Engineering, University of Ruhuna, Sri Lanka
- **National Research Council (Sri Lanka) Scholarship** to pursue a full-time research in Master of Philosophy in Civil Engineering, Sri Lanka (2018 – 2020)

EXPERIENCE

2020 August – Present **Graduate Research Assistant**, Department of Civil Engineering, College of Engineering, The University of Texas at Arlington, USA

2020 April – 2020 July **Research Assistant,** Department of Civil Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka.

2018 April – 2020 March **MPhil Candidate / Teaching Assistant**, Department of Civil Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka.

2017 October – 2018 March	**Teaching Assistant,** Department of Civil Engineering, Faculty of Engineering, South Eastern University of Sri Lanka
2017 January – 2017 June	**Undergraduate Teaching Assistant,** Department of Civil Engineering, Faculty of Engineering, South Eastern University of Sri Lanka
2016 August – 2016 November	Second Industrial Training, Central Engineering Consultancy Bureau – Proposed Bus Stand Project, Molawaththa, Gampaha
2015 June – 2015 September	First Industrial Training, Department of Buildings- Zone 1 Maintenance office

RESEARCH PROJECTS INVOLVED

- **Methane Emissions Technology Evaluation Center (METEC),** Supervisor: Prof. Kathleen M Smits – Fulltime RA (PhD student)
- **Arctic Subsurface Gas Dynamic under Center for Permafrost (CENPERM)**, Copenhagen: Advisor Prof. Bo Elberling - Ongoing
- **Gas Diffusivity-based Characterization of Nitrous Oxide Emissions from Agricultural Soils in New Zealand and Sri Lanka – NOEMA**: Supervisors Prof. T.J. Clough, Dr. Chamindu Deepagoda T.K.K., S. Thomas, Prof. B. Elberling - Ongoing
- **Launching a Greenhouse Gas Emissions Technology Evaluation Center - GRETEC**: Supervisors Dr. Chamindu Deepagoda T.K.K, Dr. M.C.M. Nasvi, Prof. Kathleen Smits.
- Experimental Investigation and Comparison of the Properties of Ordinary and Blended Cement Grouts: Supervisor Dr. J.A. Thamboo
- Shear Strength Characteristics of Western Province Peats: Supervised by Dr. J.A.S.P. Jayakody
- Final year research project" Characterization of various masonry mortars": Supervised by Dr. J. A. Thamboo
- Final year Comprehensive Design Project "Rehabilitation of Lagoon at Sainthamaruthu"

PUBLICATIONS

Journal Publications

- **Jayarathne, J.R.R.N.,** T.K.K. Chamindu Deepagoda, T.J. Clough, S. Thomas, B. Elberling, K. Smits. 2020. Effect of aggregate size distribution on soil moisture, soil-gas diffusivity, and N_2O emissions from a pasture soil. Geoderma 383 (2021) 114737. doi:10.1016/j.geoderma.2020.114737
- **Jayarathne, J.R.R.N**., Chamindu Deepagoda T.K. K, Clough T.J., Nasvi M.C.M., Thomas S., Elberling B., Smits K., 2019. Gas-Diffusivity Based Characterization of Aggregated Agricultural Soils. Soil Science Society of America Journal, doi: 10.1002/saj2.20033
- Chamindu Deepagoda T.K.K, **Jayarathne, J.R.R.N.**, Timothy J. Clough, Steve Thomas, and Bo Elberling. 2019. Soil-gas Diffusivity and Soil-Moisture effects on N_2O emissions from intact pasture soils. Soil Science Society of America Journal. doi: 10.2136/sssaj2019.10.0405

- Chamindu Deepagoda T.K.K, Timothy J. Clough, **Jayarathne, J.R.R.N.**, Steve Thomas, and Bo Elberling. 2019. Soil-Gas Diffusivity and Soil-Moisture effects on N_2O emissions from Repacked Pasture Soils. Soil Science Society of America Journal. doi: 10.1002/saj2.20024

- Thamboo, J., **N. Jayarathne**, A. Bandara, 2019. Characterisation and mix specification of commonly used masonry mortars. SN Applied Sciences (2019) 1:292. doi.org/10.1007/s42452-019-0312-z

- Chamindu Deepagoda, T.K.K., K. Smits, **J.R.R.N. Jayarathne**, B.M. Wallen, and T.J. Clough. 2018. Characterization of grainsize distribution, thermal conductivity, and gas diffusivity in variably saturated binary sand mixtures. Vadose Zoe J. 17:180026.

Conference Proceedings

- Zimar, A.M.Z, M.C.M. Nasvi, D. Robert, S. Jayalody, **J.R.R.N. Jayarathne**, J V Smith. 2020. Experimental investigation on physical properties of peat in Western province, Sri Lanka. 10th International conference on Geotechniques, Construction Materials and Environment, Melbourne, Australia, held on 11th – 13th November 2020. ISBN:978-4-909106049 C3051

- **Jayarathne, J.R.R.N**., T.K.K. Chamindu Deepagoda, K. Smits,Timothy J. Clough, M.C.M. Nasvi, S. Thomas, B. Elberling. 2020. Soil-Gas Diffusivity Modelling in Aggregated Soils. AGU Fall Meeting 2020 (Held Virtually on 1st – 17th December 2020) – Abstract ID 695008

- **Jayarathne, J.R.R.N**., T.K.K. Chamindu Deepagoda, K. Smits, 2020. Modelling Soil-Gas Diffusivity in Aggregated Agricultural Soils. 2020 ASA-ASSA-SSSA International Annual Meeting, Soil Science Society of America, (Held Virtually on 9th – 13th November 2020) – Abstract ID 124812

- **Jayarathne, J.R.R.N**., T.K.K. Chamindu Deepagoda, M.C.M. Nasvi, K. Smits. 2020, Characterization of manufactured aggregated porous media as plant growth substrate. 9th YSF Research Symposium, Young Scientists Forum, National Science and Technology Commission, (Held Virtually on 13th November 2020) Abstract ID 31

- **Jayarathne, J.R.R.N**, D.T.K.K Chamindu, M.C.M Nasvi, K Smits, T.J Clough, S Thomas, B Elberling. Modelling Soil-Gas Diffusivity in Intact Agricultural Soils. (10th International Conference on Structural Engineering and Construction Management, Kandy Sri Lanka. (ICSECM 2019) Vol 2: ICSECM2019-47, pp 73-81. ISBN-978-955-589-274-2

- **Jayarathne, J.R.R.N**., Chamindu Deepagoda T.K. K, Nasvi M.C.M., Smits K., Clough T.J., Thomas S., Elberling B., 2019. Modelling Soil-Gas diffusivity in Aggregated porous media. Proceedings of 7th International Symposium on Advances in Civil and Environmental Engineering Practices for Sustainable Development (ACEPS-2019), P 57-64

- Thamboo. J.A, Bandara. W.M.A.A, and **Jayarathne. J.R.R.N**, (2018) Fresh and Hardened Properties of Various Cement and Cement-lime Masonry Mortars, International Masonry Symposium, Milan, Italy, July 9-11.

- **Jayarathne, J.R.R.N.**, Chamindu Deepagoda T.K. K, Clough T.J., Nasvi M.C.M., Thomas S., Elberling B. Density effects on soil-water characteristics and soil-gas diffusivity in a re-packed pasture soil. Proceedings of the International Conference on Sustainable Built Environment, Kandy Sri Lanka. (ICSBE 2018- Abstract ID 177).

Working papers

- Chamindu Deepagoda, T. K. K., T. J. Clough, **J. R. R. N. Jayarathne**, S. Thomas, N. Balaine, B. Elberling, K. Smits. 2020. Effects of soil moisture and temperature on simulated methane flow under varying levels of compaction (manuscript under internal review)

- **Jayarathne, J. R. R. N**., T. K. K. Chamindu Deepagoda, T. J. Clough, S. Thomas, B. Elberling., 2020. Nitrous Oxide Emission Dynamics from Differently Dense Pastoral Soil. Soil Science Society of America Journal. (manuscript under internal review)

- **Jayarathne, J. R. R. N**., T. K. K. Chamindu Deepagoda, Shoichiro Hamamoto, Kathleen M. Smits. Descriptive – Predictive models on Soil-Gas Diffusivity: A review

SKILLS

Computer skills

- TOUGH2/EOS7CA
- Tecplot
- GEOSPLOPE GeoStudio, MATLAB, AutoCAD, STAAD.Pro, SAP2000, Surfer, Primavera, HTML basic

Language Skills

- Sinhala (Native)
- English

PROFESSIONAL MEMBERSHIPS

- Associate Engineer – Engineering Council Sri Lanka (ECSL) Since 2020 – Member ID 210074
- Member – American Geophysical Union (AGU) Since 2020 – Member ID 1240877
- Member – Soil Science Society of America (SSSA) Since 2020 – Member ID 750944
- Associate Member - The Institution of Engineers Sri Lanka (IESL) Since 2018 – Member ID AM-23438
- Member – Young Scientists Forum, National Science and Technology Commission, Sri Lanka (2019-2020) – Member ID YSF/AM/20/24
- General Secretary- Alumni Association (2017 – 2018) Faculty of Engineering, SEUSL

NON-RELATED REFEREES

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