Suresh Madushan Sampath Kadinappuli Hewage

(PhD (Melbourne), B.Sc. Eng. Hons. (Moratuwa), AMIE(SL))

Affiliation: Lecturer, Department of Civil Engineering, University of Moratuwa, Sri Lanka.
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ORCiD ResearchGate InkedIn https://uom.lk/staff/Sampath.KHSM



PERSONAL DETAILS:

Date of Birth: 24th March 1991

Nationality: Sri Lankan

Gender: Male

RESEARCH EXPERTISE AND INTERESTS

My research aim is to search for novel and creative solutions for current and raising issues in Geotechnical and Earth Science Engineering connected to Circular Economics and Sustainable Engineering. My main research expertise and interests are:

- Ground improvement including soft soil stabilization with partial replacement of material and deep mixing.
- Sustainable methods in slope stabilization.
- Analysis of fluid flow behaviour in porous media, especially in fractured geological reservoirs, and analysis of fully-coupled fluid flow adsorption mechanical deformation process in geological reservoirs related to carbon storage.
- Carbon storage in underground reservoirs as a waste management, coupled with hydrocarbon extraction as an alternative energy generation.
- Analysis of hydrocarbon extraction from geological reservoirs, specifically CO₂-enhanced coalbed methane extraction (ECBM).
- Subsurface fluid flow, Geotechnical applications, and rock mechanics.
- Micro-computed tomography (micro-CT) based image analyses of porous media.

ACADEMIC QUALIFICATIONS:

Ph.D. in Civil Engineering | 2017 - 2020

The University of Melbourne, Australia.

• **Specialist areas:** CO₂ storage, hydrocarbon (CH₄) extraction, CO₂ flow and adsorption in geological reservoirs, Geo-reservoir Engineering, Rock-mechanics, Geo-mechanics, Hydro-mechanical coupling, Static and dynamic experimental analysis, Numerical and Statistical modelling.

Doctoral Dissertation:

 K.H.S.M.Sampath (2020), A comprehensive analysis of the structural alterations occur in CO₂- interacted coal: An insight into CO₂ sequestration in coal, Doctoral Dissertation (Ph.D.), Department of Infrastructure Engineering, The University of Melbourne, Australia. <u>http://hdl.handle.net/11343/243041</u>

B.Sc. in Civil Engineering (with First Class Hons) | 2012 - 2016

University of Moratuwa, Sri Lanka.

- Ranked **Second** in Department of Civil Engineering
- Overall GPA = **4.02**/4.20 (First Class Division)

G.C.E. Advanced Level & Ordinary Level | 2002 - 2010

Ananda College, Colombo 10, Sri Lanka.

- Passed G.C.E. Advanced Level (2010) with **3** A's from Physical Science stream Physics: A, Combined Mathematics: A, Chemistry: A
- Passed G.C.E. Ordinary Level (2007) with **9** A's and **1** B (English Literature)

AWARDS AND SCHOLARSHIPS

- "Award for the Outstanding Research Performances" awarded by University of Moratuwa, Sri Lanka 2022
- "PhD Write-Up Award" awarded by Melbourne School of Engineering, University of Melbourne 2020
- Nominated for the "Melbourne University Vice Chancellor's Award for the Best PhD Thesis" 2020
- **"Pearson William Tewksbury Scholarship"** awarded by Melbourne School of Engineering, University of Melbourne – 2019
- "George Lansell Memorial Scholarship" awarded by Melbourne School of Engineering, University of Melbourne – 2019
- "Best research presentation award" awarded at the International postgraduate summer school, North-eastern University, China – 2019

- **"Best Presentation Award (Storage)"** awarded at the PCC Research Snapshot organized by Peter Cook Centre for Carbon Capture and Storage Research, University of Melbourne 2019
- "The Melbourne Research Scholarship" awarded by University of Melbourne 2017
- "The Best Undergraduate Research in Geotechnical Engineering in Sri Lankan Universities during the year 2016" awarded by Sri Lankan Geotechnical Society 2016
- **"Special Award for Academic Excellence in Civil Engineering"** for the Civil Engineering graduand who obtains the 2nd highest Overall Grade point Average of 3.7 and above at the B.Sc. Engineering Degree Examination. (Academic year 2014/2015) awarded by University of Moratuwa, Sri Lanka 2016
- "Geotechnical Engineering Award" for the Civil Engineering student who obtains the highest-Grade point Average of 3.7 and above at the first attempt for the specified Geotechnical Engineering subjects. (Academic year 2014/2015) awarded by University of Moratuwa, Sri Lanka - 2016
- "Scholarship awarded on the Special Achievement at the G.C.E. A/L Examination" awarded by Ananda College, Colombo, Sri Lanka 2011
- **"N.S. Chandrasena Memorial Scholarship"** awarded on the results of the G.C.E. O/L Examination, awarded by Ananda College, Colombo, Sri Lanka 2008

INVITED TALKS:

 Rock-fluid interaction: An insight into fluid flow in fractured rocks. Geotechnical Forum organized by the Sri Lankan Geotechnical Society (SLGS) – 08/07/2021. <u>https://slgs.lk/event/geotechnical-forum/</u>

RESEARCH PUBLICATIONS:

Journal publications

- Sathsarani, H.B.S., Sampath, K.H.S.M., Ranathunga, A.S. (2023) Utilization of fly ash-based geopolymer for well cement during CO2 sequestration: A comprehensive review and a meta-analysis, Gas Science and Engineering, 113, 204974. (Q1 journal, IF 5.21) https://doi.org/10.1016/j.jgsce.2023.204974
- Sampath, K. H. S. M., Ranjith, P. G., Perera, M. S. A. (2020) A Comprehensive Review of Structural Alterations in CO2-Interacted Coal: Insights into CO₂ Sequestration in Coal, Energy Fuels, 34, 13369–13383. (Q1 journal, IF – 4.324) https://doi.org/10.1021/acs.energyfuels.0c02782
- Sampath, K. H. S. M., Perera, M. S. A., Ranjith, P. G., Matthai, S. K., Rathnaweera, T., Zhang, G., Tao, X. (2017). *CH₄-CO₂ gas exchange and supercritical CO₂ based hydraulic fracturing as CBM production-accelerating techniques: A review*. Journal of CO₂ Utilization, 22, 212-230. (Q1 journal, IF 7.132) https://doi.org/10.1016/j.jcou.2017.10.004
- Sampath, K. H. S. M., Perera, M. S. A., Elsworth, D., Ranjith, P. G., Matthai, S. K., Rathnaweera, T., Zhang, G. (2019). *Effect of coal maturity on CO₂-based hydraulic fracturing process in coal seam gas reservoirs*. Fuel, 236, 179-189. (Q1 journal, IF – 6.61) <u>https://doi.org/10.1016/j.fuel.2018.08.150</u>
- 5. Sampath, K. H. S. M., Perera, M. S. A., Elsworth, D., Matthai, S. K., Ranjith, P. G., Dong-yin, L. (2021). Discrete fracture matrix modelling of fully-coupled CO2 flow–Deformation processes in

fractured coal. International Journal of Rock Mechanics and Mining Sciences, 138, 104644. (Q1 journal, IF – 7.14) <u>https://doi.org/10.1016/j.ijrmms.2021.104644</u>

- Sampath K.H.S.M., Perera M.S.A., Ranjith P.G., Matthai S.K. (2019). CO₂ interaction induced mechanical characteristics alterations in coal: A review. International journal of coal geology, 204, 113-129. (Q1 journal, IF 6.806) <u>https://doi.org/10.1016/j.coal.2019.02.004</u>
- Sampath, K. H. S. M., Perera, M. S. A. (2021) Modelling of Hydro-Mechanical alterations in Fractured Coal caused by stepwise CO₂ injection, Geotechnical Journal, SLGS, Volume 8 (1), 36-53. <u>https://slgs.lk/publication/geotechnical-journal-2021/</u>
- Sampath K. H. S. M., Perera M. S. A., Matthai S. K., Ranjith P. G., Li D. Y. (2020). Modelling of fullycoupled CO₂ diffusion and adsorption-induced coal matrix swelling. Fuel, 262, 116486. (Q1 journal, IF - 6.61) <u>https://doi.org/10.1016/j.fuel.2019.116486</u>
- Perera M. S. A., Sampath K. H. S. M., (2019). Modelling of free and adsorbed CO₂-induced mechanical property alterations in coal. International Journal of Coal Geology, 217, 103348. (Q1 journal, IF 6.806) https://www.doi.org/10.1016/j.coal.2019.103348
- Ahamed, M.A.A., Perera, M.S.A., Jay, R.B., Matthai, S.K., Ranjith, P.G., Dong-yin, Li, Sampath, K.H.S.M., (2021). *Investigating the proppant damage mechanisms expected in a propped coal fracture and its effect on fracture flow*, Journal of Petroleum Science and Engineering, vol. 198, 1-15, (Q1 journal, IF 4.965) <u>https://doi.org/10.1016/j.petrol.2020.108170</u>
- 11. Sampath K. H. S. M., Sin I., Perera M. S. A., Matthai S. K., Ranjith P. G., Li Y. (2020), *Effect of supercritical-CO₂ interaction time on the alterations in coal pore structure*. Journal of Natural Gas Science and Engineering, 76, 103214. (Q1 journal, IF 5.21) https://doi.org/10.1016/j.jngse.2020.103214
- 12. Sampath K. H. S. M., Perera M. S. A., Li D.Y., Ranjith P. G., Matthai, S. K. (2019). Evaluation of the mechanical behaviour of brine+CO₂ saturated brown coal under mono-cyclic uni-axial compression. Engineering Geology, 263, 105312. (Q1 journal, IF 7.15) https://doi.org/10.1016/j.enggeo.2019.105312
- 13. Sampath K.H.S.M., Perera M.S.A., Ranjith P.G., Matthai S.K., Dong yin L. (2019). Qualitative and quantitative evaluation of the alteration of micro-fracture characteristics of supercritical CO₂-interacted coal. The Journal of supercritical fluids, 147, 90-101. (Q1 journal, IF 4.22) https://doi.org/10.1016/j.supflu.2019.02.014
- 14. Sampath K.H.S.M., Perera M.S.A., Ranjith P.G., Matthai S.K., Tao X., Wu B.K. (2019). Application of neural networks and fuzzy systems for the intelligent prediction of CO₂-induced strength alteration of coal. Measurement (London. Print), 135, 47-60. (Q2 journal, IF 5.13) https://doi.org/10.1016/j.measurement.2018.11.031
- Perera, M.S.A., Sampath, K.H.S.M., Ranjith, P.G., & Rathnaweera, T.D., (2018). *Effects of Pore Fluid Chemistry and Saturation Degree on the Fracability of Australian Warwick Siltstone*. Energies, 11(10), 1-15. (Q3 journal, IF 3.004) <u>https://doi.org/10.3390/en11102795</u>
- 16. Zhang, G., Ranjith, P.G., Perera, M.S.A., Haque, A., Choi, X., & Sampath, K.H.S.M., (2018). Characterisation of coal porosity and permeability evolution by demineralisation using image processing techniques: A micro-computed tomography study. Journal of Natural Gas Science and Engineering, 56, 384-396. (Q1 journal, IF – 5.21) https://doi.org/10.1016/j.jngse.2018.06.020

- Sampath, K. H. S. M., Perera, M. S. A., Li, D. Y., Ranjith, P. G., Matthai, S. K. (2019). *Characterization of dynamic mechanical alterations of supercritical CO₂-interacted coal through gamma-ray attenuation, ultrasonic and X-ray computed tomography techniques.* Journal of Petroleum Science and Engineering, 174, 268-280. (Q1 journal, IF 4.965) <u>https://doi.org/10.1016/j.petrol.2018.11.044</u>
- 18. Sampath, K. H. S. M., Perera, M. S. A., Ranjith, P. G. (2018). Theoretical overview of hydraulic fracturing break-down pressure. Journal of Natural Gas Science and Engineering, 58, 251-265. (Q1 journal, IF 5.21) <u>https://doi.org/10.1016/j.jngse.2018.08.012</u>
- Sampath, K. H. S. M., Perera, M. S. A., Elsworth, D., Ranjith, P. G., Matthai, S. K., Rathnaweera, T. (2018). *Experimental investigation on the mechanical behaviour of Victorian brown coal under brine saturation*. Energy & Fuels, 32(5), 5799-5811. (Q1 journal, IF 4.324) https://doi.org/10.1021/acs.energyfuels.8b00577
- 20. Sampath K.H.S.M., De Silva L.I.N., Perera M.S.A. (2017). Effective usage of poker vibrator for compacting quarry dust: an application to ground improvement in shallow foundation design. Geomechanics and Geophysics for Geo-Energy and Geo-Resources. 3(1), 1-11. (Q2 journal, IF 4.424) https://doi.org/10.1007/s40948-016-0041-3
- 21. Bandara, W. W., Mampearachchi, W. K., & Sampath, K. H. S. M. (2017). Cement Stabilized Soil as a Road Base Material for use in Sri Lankan Roads. Engineer: Journal of the Institution of Engineers, Sri Lanka, 50(1), 21–29. <u>http://doi.org/10.4038/engineer.v50i1.7241</u>

Book Chapters

 Sampath, K. H. S. M., Perera, M. S. A., Ranjith, P. G., & Matthai, S. K. (2018). Investigation of the mechanical behaviour of brine saturated brown coal under uni-axial compression. In Deep Rock Mechanics: From Research to Engineering (pp. 67-75). CRC Press (ISBN 9781138487611). https://doi.org/10.1201/9781351042666

International Refereed Conference Publications

- Sampath, K. H. S. M., Perera, M. S. A., Ranjith, P. G., & Matthai, S. K. (2018, December). *Investigation of the mechanical behaviour of brine saturated brown coal under uni-axial compression*. In Deep Rock Mechanics: From Research to Engineering: Proceedings of the International Conference on Geo-Mechanics, Geo-Energy and Geo-Resources (IC3G 2018), September 21-24, 2018, Chengdu, PR China (p. 67). CRC Press.
- Sampath, K. H. S. M., Perera, M. S. A., Ranjith, P. G., & Stephan, S. K. (2018, August). Evaluation of Superiority of Liquid CO₂ as a Non-Aqueous Fracturing Fluid for Coal Seam Gas Extraction. In 52nd US Rock Mechanics/Geomechanics Symposium. American Rock Mechanics Association.
- **3.** Sampath K.H.S.M., De Silva L.I.N. and Perera M.S.A., *Application of Poker Vibrator for Compacting Quarry Dust*, International Conference on Geo-mechanics, Geo-energy, and Geo-resources (IC3G 2016), 28,29, September 2016, Melbourne, Australia.
- Perera, S. Y. W., Sampath, K. H. S. M., Analysis of the behaviour of the improved soil under shallow concrete foundations. In 15th International Research Conference, 29th-30th September 2022, General Sir John Kothalawala Defence University, Sri Lanka.
- Sandamali, D. M. T. U., Sampath, K. H. S. M., Ranathunga, A. S., Prediction of Compaction Properties of Clayey Soils Stabilized with Calcium Carbide Residue, In the International Conference on Engineering, 19th August 2022, The Faculty of Engineering, University of Jaffna, Sri Lanka.

- 6. Malalathunga C. M., Sampath K.H.S.M., Strength Analysis of Improved-Soil Pertinent to Shallow Ground Stabilization: A Meta-Analysis. In the 3rd International conference on Geotechnical Engineering (ICGE COLOMBO 2020), 6th 7th December 2021, Sri Lankan Geotechnical Society (SLGS), Colombo, Sri Lanka.
- Sampath, K. H. S. M., Sin, I., Windt, L., Perera, M. S. A., & Matthai, S. K., *Changes in coal structure, induced by coal-supercritical CO₂ interaction: experimental and modelling results of CO₂ adsorption on coal. In Second Biennial Meeting of Australian Chapter of InterPore, October 31 November 2, 2018, The University of Melbourne, Parkville, Australia.*
- 8. Sampath, K. H. S. M., Perera, M. S. A., & Stephan, S. K., *Optimization of Coal Seam Gas Recovery through Supercritical CO*₂ *based Hydraulic Fracturing.* In the Infrastructure Engineering Postgraduate conference (IEPC), 10th of November 2017, University of Melbourne, Australia.
- **9.** Sampath K.H.S.M., De Silva L.I.N., *Effective applications of poker vibrator for compacting quarry dust as a ground improvement technique*. In the 02nd International Conference on Engineering and Technology (ICET-2016), 02, December 2016, Colombo, Sri Lanka.

| Grant | Reference | Date | Grant Value |
|--|------------------|-------------------|------------------|
| Reserach Access Grant from Australian Synchrotron Imaging and Medical Beamline (IMBL) Facility | AS173/IM/12465 | 17 August 2017 | \$ AUD 65,568.00 |
| | AS182/IMBL/13332 | 01 May 2018 | \$ AUD 65,568.00 |
| | AS183/IMBL/13768 | 20 August 2018 | \$ AUD 65,568.00 |
| | AS191/IMBL/14364 | 18 December 2018 | \$ AUD 65,568.00 |
| | AS192/IMBL/14739 | 06 May 2019 | \$ AUD 65,568.00 |
| | AS193/IMBL/15148 | 24 September 2019 | \$ AUD 65,568.00 |
| | AS1/IMBL/15760 | 09 June 2020 | \$ AUD 65,568.00 |

RESEARCH GRANTS:

ACADEMIC/INDUSTRIAL POSITIONS

| 2021 August to present | Lecturer and Researcher, Department of Civil Engineering, University of Moratuwa, Sri Lanka. | |
|-----------------------------------|---|--|
| 2022 September to present | Visiting Lecturer, ESOFT College of Engineering & Technology, Sri Lanka. | |
| 2022 March to present | Visiting Lecturer, Sri Lanka Technological Campus (SLTC), Sri Lanka. | |
| 2021 September to present | External Research Supervisor, CINEC Campus Sri Lanka Maritime College. | |
| 2021 January to August | Lecturer (on contract), Department of Civil Engineering, University of Moratuwa, Sri Lanka. | |
| 2019 February to 2020 November | Senior tutor, Earth Processes for Engineering (ENEN20002), Undergraduate Level 2 subject, University of Melbourne, Australia. (Academic year – 2020) | |

| 2018 July to 2018 November | Senior tutor, Geotechnical Applications (CVEN90027), Graduate coursework subject, University of Melbourne, Australia. (Academic year – 2018) | |
|------------------------------------|--|--|
| 2018 February to 2018 November | Tutor, Earth Processes for Engineering (ENEN20002), Undergraduate Level 2 subject, University of Melbourne, Australia. (Academic year – 2018) | |
| 2016 April to 2017 January | Research Assistant, University of Moratuwa, Sri Lanka. | |
| 2016 September to 2016 November | Visiting Instructor, Short Course on Highway Material Testing – 2016 (Conducted by University of Moratuwa, Sri Lanka) | |
| 2016 April to 2016 May | Visiting Instructor, Survey camp 2016, Institute of Surveying & Mapping, Sri Lanka | |
| 2014 October to 2015 March | Trainee Engineer, MAGA Engineering (Pvt) Ltd, 200, Nawala road, Sri Lanka Deyata Kirula Road project - Matara (October 2014 - December 2014) Fair Way City Hotel Project - Colombo (Jan 2015 - March 2015) | |

PROFESSIONAL TRAININGS/SKILLS

- Teaching:
 - Completed Certificate Course in Teaching in Higher Education (CTHE) 2022
 - o Completed Tutor development program, University of Melbourne 2019

• Research:

- o Research Integrity, University of Melbourne, Australia, August 2017
- Office Ergonomics and Manual Handling, University of Melbourne, Australia, February 2017
- Occupational Health and Safety (OHS) and Risk Management, University of Melbourne, Australia, February 2017
- Scanning Electron Microscope Training, Bio21 Institute, University of Melbourne, Australia, June 2017
- o Biohazard Laboratory Practice, University of Melbourne, Australia, June 2017
- Software packages familiar with:
 - COMSOL Multiphysics, AVIZO, Plaxis 2D, Geo-Slope, GIS, SAP2000, Prokon, HEC-RAS, Vissim, AUTO CAD, Revit Architecture, MS Project, Microsoft Office package

PROFESSIONAL ACTIVITIES

• Academic Editor:

- o GEOFLUIDS (Wiley and Hindawi) Open Access Journal (IF: 2.176)
- Geomechanics and Geophysics for Geo-Energy and Geo-Resources (IF: 4.424)
- Non-Carbon-Based Fuels (specialty section of Frontiers in Fuels) (IF: 3.858)
- Peer Reviewer:
 - International Journal of Greenhouse Gas Control
 - Geomechanics and Geophysics for Geo-Energy and Geo-Resources
 - o Energies (MDPI)
 - Advances in Civil Engineering (Hindawi)

• Major Consultancy Assignments:

| 2021 December | Project Client | : Proposed New Construction at Industrial Zone - Ekala : Manamperi Constructions |
|---------------|-------------------|---|
| | Tasks | : Provide recommendations for ground improvement and foundations of structures. |
| 2022 March | Project | : Proposed Warehouse Complex for CANTECH Exports |
| | Client Tasks | : Brandix Fast Fashion, Awissavella : Provide recommendations for foundations of structures. |
| 2022 April | Project | : Proposed Villas by Second Estate Residence Yala |
| | Client | : Second Estate Residence Yala |
| | Tasks | : Provide recommendations for ground improvement and foundations of structures. |
| 2022 June | Project | : Proposed Bridge Foundations at Central Expressway Project (CEP-III) |
| | Client | : MAGA Engineering Pvt. Ltd. |
| | Tasks | : Provide recommendations for bridge foundations. |
| 2022 August | Project | : Polgahawela, Pothuhera and Alawwa Integrated Water Supply Project |
| | Client | : National Water Supply and Drainage Board (NWSDB) |
| | Tasks | : Slope stability analysis and providing recommendation for stability. |
| 2022 July | Project | : Clean Energy Absorption Transmission Project |
| to September | Client | : Ceylon Electricity Board (CEB) |
| | Tasks | : Provide recommendations for ground improvement and tower foundations. |
| 2022 December | Project | : Proposed Water Supply Project at Walivita and Lunugamwehera |
| | Client | : National Water Supply and Drainage Board (NWSDB) |
| | Tasks | : Provide recommendations for foundation of structure. |
| 2023 March | Project | : Proposed Electricity Extension Project |
| | Client | : Ceylon Electricity Board (CEB) |
| | Tasks | : Design Check of Self-Supported Poles for Mounting 33kV/250kVA Transformers |

PROFESSIONAL ASSOCIATIONS AND OTHER SOCIETIES

- Associated member of Institute of Engineers Sri Lanka (IESL) (Year 2016 to present)
- Associated member of Engineers Council Sri Lanka (ECSL) (Year 2021 to present)
- Executive committee member, Sri Lankan Geotechnical Society (SLGS)
- Executive committee member, Old Anandian Engineers' Guild
- Member, Highway Engineering Society Student chapter, Sri Lanka
- Member, Sri Lankan graduate's society (SLGS), University of Melbourne, Australia.
- Associate member of Electronics Club Ananda College (year 2005 2007)
- Associate member of Hela Sisu Hawula Ananda College (year 2007 2010)
- Carom team member, Ananda College Age categories U13-U17

ACADEMIC AND EXTRA-CURRICULAR ACTIVITIES

Actively participated in:

- Organizing International Conference in Geotechnical Engineering (ICGE-Colombo), 2020
- International postgraduate summer school, North-eastern University, Shenyang, China, 2019
- Civil Engineering Lab Tour guide in Open day, University of Melbourne, 2017 and 2018
- 02nd International Conference on Engineering and Technology (ICET-2016)
- Transport Research Forum, University of Moratuwa 2016
- International Conference on Geotechnical Engineering -2015
- International Conference on Structural Engineering (ICSE 2015)
- Holcim inter university Mix Design Competition 2015
- Civil Engineering Research Symposium organized by University of Moratuwa 2015
- Training Programme on "Developing Leadership Qualities and Positive Thinking" 2011

I hereby state that the above given information is true and accurate to the best of my knowledge. Signed. Dr. Suresh Madushan Sampath Kadinappuli Hewage

Referees' Details

Dr. Samintha Perera,

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Professor Ranjith PG, BSc (Hons), PhD, FTSE, FIMMM, FASCE, FGS, FIEAust

FASCE, FGS, FIEAust Professor of Sustainable Development of Energy and Resources, Fellow of Australian Academy of Technology and Engineering, Director, International Director, Deep Earth Energy Research Lab, Monash University, VIC 3800, Australia Te: +61 3 990 54982 Email: ranjith.pg@monash.edu

Professor Stephan K. Matthai,

Chair of Reservoir Engineering, Department of Infrastructure Engineering, The University of Melbourne, Building 175 (Engineering Block B), Level 2, Room B205A Grattan Street, Melbourne, VIC 3010, Australia T: +61 3 834 46084 M: +61 452 521 033 E: <u>stephan.matthai@unimelb.edu.au</u>