

Senthen Amuthan Mani

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Education

- Aug. 2019-till now** **Ph.D.** in Offshore Geotechnical Engineering (renewable energy)
University of Western Australia (UWA), Perth, Australia
Thesis title: Suction caisson installation in layered soil for offshore wind turbines
Supervisors: Ass/Prof. Britta Bienen and Ass/Prof. Conleth O'Loughlin
- Jul. 2015-Jul. 2018** **MS by Research** in Geotechnical Engineering (**CGPA: 9.76 out of 10**),
Indian Institute of Technology Madras (IIT-M), Chennai, India
Thesis title: Shear strength and liquefaction resistance of particulate rubber mixed with sand and fly ash
Supervisors: Prof. A. Boominathan & Dr. Subhadeep Banerjee
- Aug. 2008-Apr. 2012** **BE in Civil Engineering (CGPA: 8.96 out of 10)**, Anna University,
Chennai, India

Honors and Awards

- Aug. 2019 – till now** Holding two competitive scholarships at UWA – UWA International Fee Scholarship and University Postgraduate Award International Student – for carrying out Ph.D.
- Jul. 2015-Nov. 2018** MHRD scholarship for pursuing MS by Research at IIT Madras
- Jul. 2017** Financial assistance of Rs. 1.5L to attend PBD III at Vancouver, Canada
- Sep. 2016** **Best paper presentation award from Springer** with 100 Euro for 2nd place in the international conference held at Mumbai.
- 2008-09&2011-12** **Received two times 50% scholarship in tuition fee** for one of the best academic performers.
- 2008-12** Received teacher's trust scholarship during 4 years of my bachelors for performing well in the academics.
- 2010-11** Best academic performer based on end semester exams of Bachelor degree

Research Experience (5 years)

Aug. 2019 – till now **Ph.D. scholar**
UWA, Perth, Australia

Working on a foundation solution for offshore wind turbines. The scope of the research is to advance the knowledge in design and installation phase of the foundations.

Jul. 2018 – Aug. 2019 **Project Officer / Scientist at IIT Madras**

Indian Institute of Technology Madras, Chennai, India

- Prepared site investigation reports along with foundation recommendations and design.
- Assisted in proof checking the design of various geotechnical structures such as offshore piles, under-reamed piles, and well foundations.

- Carried out Active MASW tests at the field and analyzed the data in the lab. This is the test to carry out nondestructive site investigation which is common nowadays.
- Carried out multistage cyclic triaxial, resonant column, and bender element tests to determine the dynamic properties of silty soils with UDS samples for a nuclear power plant project. The project was published in an international journal.
- Carried out tests on cement treated sand to determine the dynamic properties and prepared report for the clients.

Jul. 2015-Jul. 2018 Half Time Research Assistant (HTRA) at IIT Madras during Masters

- Carried out the Light Cone Penetration Test (LCPT) tests at the site.
- Assisted in monitoring the vibration of a building floor due to traffic loading.
- Design of railway embankments and blanket materials.

Industry experience (2 years)

Jun. 2012-Jul. 2014 Planning Engineer

L&T Infrastructure Development Projects Limited, Chennai, India

- Monitored the construction activity and prepared progress reports.
- Involved in the construction of embankments and bridge abutments.
- Played a key role in the construction of a gabion wall as a river training work.
- Obtained proof checking of designs from IIT Professors.
- Tracking contractor progress and checking whether the progress is as per contract
- Issuing work orders and procuring construction items

Technical Skills

- **Large scale model testing:** Centrifuge and 1-g model testing - experience in working with renowned academics and technicians who
- **Apparatus:** *most advanced element testing facilities in geotechnical engineering* - Cyclic triaxial, Resonant column, Bender element, Cyclic simple shear, MASW
- **Engg. Software:** Python, AutoCAD, Plaxis^{2D} (beginner), FLAC^{2D} (beginner)
- **Additional:** Experience in preparing and carrying out dynamic tests on UDS samples (particularly silty soils). Also, possessing experience in assembling cyclic triaxial parts and solving apparatus related issues.

Publications

Journals

1. **Senthen Amuthan, M.**, Boominathan, A., and Banerjee, S. (2020). “Undrained cyclic responses of particulate rubber-sand mixtures.” *Soils and Foundations* (Elsevier, impact factor: 1.756), doi.org/10.1016/j.sandf.2020.06.007.
2. Varghese, R., **Senthen Amuthan, M.**, Boominathan, A., and Banerjee, S. (2019). “Cyclic and post cyclic behaviour of silts and sandy silts from indo gangetic deposits.” *Soil Dynamics and Earthquake Engineering* (Elsevier, impact factor: 2.637), doi.org/10.1016/j.soildyn.2019.105750.

3. **Senthen Amuthan, M.**, Boominathan, A., and Banerjee, S. (2018). “Density and shear strength of particulate rubber mixed with sand and fly ash.” *J. Mater. Civ. Eng.*,(ASCE, impact factor:....), [doi.org/10.1061/\(ASCE\)MT.1943-5533.0002322](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002322).
4. **Senthen Amuthan, M.**, Boominathan, A., and Banerjee, S. (2018). “Sand and concrete interface behaviour of particulate rubber-sand-fly ash mixture.” *Int. J. Geotech. Eng.*,(Taylor and Francis,impact factor:.....), doi.org/10.1080/19386362.2018.1499269.

Conferences

1. **Senthen Amuthan, M.**, Boominathan, A., Banerjee, S. (2017). “Undrained shear strength of particulate rubber sand mixture (PRSM) mixed with fly ash.” **PBD III, Vancouver, Canada.**
2. **Senthen Amuthan, M.**, Boominathan, A., Banerjee, S. (2016). “Influence of fly ash on the shear strength and volumetric behaviour of sand rubber-tire mixture (SRM).” Inter. Conf. on Sustain.inGeotech.Engg. Practices and Related Urban Issues, **Mumbai, India.**

References

Ass/Prof. Britta Bienen and Conleth O’Loughlin University of Western Australia.

Prof. A. Boominathan (boomi@iitm.ac.in) and Dr. Subhadeep Banerjee (subhadeep@iitm.ac.in) Civil Engg. Dept., IIT Madras, Chennai, India.