Dr. DHANYA J.S.

135, Department of Civil Engineering,
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EDUCATION

Ph.D. in Civil Engineering 2013-2019
Indian Institute of Technology Madras, Chennai, India (NIRF ranking:1)
Thesis*: "Performance of Geogrid reinforced Geo-Base Isolation (GBI) system for seismic protection of buildings"*.
Advisor: Prof. A.Boominathan and Dr. Subhadeep Banerjee
Cumulative GPA: 8.6 / 10.00

Master of Technology in Geotechnical Engineering 2010-2012
Anna University: College of Engineering Guindy, Chennai (NIRF ranking:14)
Thesis title: "*Stress-Strain Behavior of Fiber Reinforced Admixed Soil*".
Advisor: Prof. K.Ilamparuthi
Cumulative GPA: 7.99 / 10.00

Bachelor of Technology in Civil Engineering 2006-2010
Thiagarajar College of Engineering, Madurai, India (NIRF ranking:64)
Cumulative GPA: 8.4 / 10.00

PUBLICATIONS

Peer Reviewed Journals

Dhanya, J. S., Boominathan, A. & Banerjee, S. (2019). Performance of geo-base isolation system with geogrid reinforcement, *International Journal of Geomechanics*, ASCE, 19(7), 1-13. DOI:10.1061/(ASCE)GM.1943-5622.0001469, ISSN 1532-3641. (Impact factor: 2.45)

Dhanya, J. S., Boominathan, A. & Banerjee, S. (2020). Response of low-rise building with geotechnical seismic isolation system. *Soil Dynamics and Earthquake Engineering.* 136 (1-16). DOI: 10.1016/j.soildyn.2020.106187, ISSN: 0267-7261. (Impact factor: 2.637)

Book Chapter

Boominathan, A., Banerjee, S. and **Dhanya, J.S**. (2019). Geo-base isolation system with geogrid reinforcement for low-rise buildings. Proceeding in Earth and Geosciences: Geotechnics Fundamentals and Applications in Construction, Taylor and Francis, 2, 86-92.

Keynote Paper

Boominathan, A., Madhusudhan B.R., **Dhanya, J.S** (2018). An Innovative Geomaterial for Seismic Isolation of Low-Rise Buildings. 16th Symposium on Earthquake Engineering, IIT Roorkee, India

Conference Proceedings

Dhanya, J.S., Boominathan, A. and Banerjee, S. (2018). SSI Study of Low-Rise Building placed on Sand-Rubber Mixture Isolation Layer, 16th European Conference on Earthquake Engineering, Thessaloniki, Greece, June 2018, Vol12, Paper no. 11712, 8479-8489.

Dhanya, J.S., Boominathan, A. and Banerjee, S. (2017). Response of soil-tyre mixture subjected to cyclic loading, 16th World Conference on Earthquake Engineering, Santiago, Chili, 9-13 January 2017, Paper no. 1662.

Boominathan, A., Banerjee, S. and **Dhanya, J.S**. (2015). Performance of Soil-Rubber Tyre Scrap Mixture as Seismic Base Isolators for Foundations, 6th International Conference on Earthquake Geotechnical Engineering, November 2015, Christchurch, New Zealand, Paper no.593.

Dhanya, J.S., Boominathan, A. and Banerjee, S. (2018). FE Study on the Seismic Response of Geo-Isolated RC Buildings, Indian Geotechnical Conference 2018, Guwahati.

Ilamparuthi,K., **Dhanya, J.S.** (2012). Stress-Strain Response of Fibre Reinforced Admixed Soil, Proceedings of Indian Geotechnical Conference, Delhi, Paper No. A103.

Boominathan, A., **Dhanya, J. S**. and Silpa, P.J. (2020). Use of sand-rubber mixture (SRM)-filled trenches for pile driving induced vibration screening. *16th International Conference of International Association for Computer Methods and Advances in Geomechanics*, Torino, Italy (In Press).

Dhanya, J.S., Boominathan, A. and Banerjee, S. (2020). Performance of Sand-Rubber Mixture Infill Trench for Ground Vibration Screening. *1st International Symposium on Construction Resources for Environmentally Sustainable Technologies (CREST 2020),* Fukuoka, Japan. (In Press).

Boominathan, A., **Dhanya, J. S**. and Kiruthika P. (2020). Surface wave method-based site characterization for Chennai city, India. *Russian Engineering Surveyor's Forum Issue 1,* Moscow, Russia. (Paper accepted).

SCHOLARSHIPS AWARDS AND ACHIEVEMENTS

Part of team involved in the preparation of research project proposal titled "Evaluation of dynamic properties and seismic isolation performance of sand-rubber mixture" which was awarded emolument of INR 88 lakhs from the Ministry of Earth Sciences, GoI under Seismicity and Earthquake Precursors Program.

MHRD scholarship for pursuing PhD by research at IIT Madras during July 2013-July 2018

Financial assistance of Rs. 1.5 lakhs from IIT Madras to attend 16th World Conference on Earthquake Engineering, Santiago, Chili, January 2017

Alumni grant of Rs.50,000 from IIT Madras to attend the 16th European Conference on Earthquake Engineering, Thessaloniki, Greece, June 2018

RESEARCH INTERESTS

Vibration mitigation and geotechnical seismic isolation techniques: Scaled model tests under static and cyclic loading, Numerical modeling, Field study on trench barriers, MASW testing
Finite element analysis: Direct method of SSI analysis, Sub structuring method of SSI
Cyclic response of Soil: Strain dependent soil properties; Cyclic triaxial testing
Ground improvement techniques: Geosynthetic reinforcement for foundations

COMPUTATION SKILLS

Engineering software: ABAQUS, SASSI (soil-structure interaction software), AutoCAD, Plaxis3D

Programming language: C++

REVIEWER

International Journal of Geotechnical Earthquake Engineering

PRESENT POSITION

Senior Project Officer at IIT Madras ***Sep 2019- till date***

- Vibration monitoring studies during the blast induced controlled demolition of multistoried residential apartments at Maradu, Kochi. (client: Maradu municipality, Kochi)
- Pile vibration monitoring studies for multi-storied building complex at Chettiyarangam village, Ennore (Client: Tamilnadu Slum clearance Board).
- Investigation of sand-rubber mixture infilled trench barriers for pile driving induced ground borne vibration mitigation.
- Collaborated research with L&T-R&D on the industrial application of geotechnical seismic isolation system for low-rise residential buildings at Assam.

RESEARCH AND TEACHING EXPERIENCE

Teaching Assistant at IIT Madras ***Jul. 2013-Sep 2019***

Course title: Soil Dynamics, Ground Improvement Techniques, Advanced Foundation Engineering, Experimental Geotechnics Laboratory

- Assisted in preparing presentations, tutorials, and assignments for the courses
- Prepared solutions for the quizzes and assignments, and assisted in evaluation and grading
- Supervised the Experimental Geotechnics Lab for the undergraduate students
- Demonstrated experiments such as triaxial, cyclic triaxial, bender element, resonant column, direct shear test and large-scale model tests

Assistant Professor at SRM Valliammai Engineering College ***Aug. 2012- Jan. 2013***

Course title: Basic Soil Mechanics, Foundation Engineering, Highways Engineering and Geotechnical Engineering Lab

- Carried out classes incorporating the recent trends in the field related to the topics covered
- Set up geotechnical engineering lab with equipment for consolidation and direct shear tests
- Framed manuals and conducted Geotechnical Engineering Lab and semester exams
- Served as external examiner for lab courses for different engineering colleges in Chennai

INDUSTRY EXPERIENCE

Involved in the following completed/ongoing industrial project during the PhD program and as Senior project officer at present at IIT Madras:

- Soil investigation
- Geotechnical design of shallow and deep foundations
- Vibration monitoring during pile driving
- Stability analysis using FE code PLAXIS 2D
- Seismic Soil Structure Interaction (SSI) analysis using FE code ABAQUS and SASSI
- Design of stone columns

✓ Geotechnical investigation and recommendation for the tank foundation-East African Crude Oil Pipeline (EACOP) Tank facilities package, Tanzania (Client: L&T Hydrocarbon Engineering)

✓ Recommendations on side slope stability-Haliba Field Development Project Abu Dhabi (Client: L&T ECC).

✓ Proof checking for geotechnical investigation report of Sea Water Intake and Outlet syetm for 2x800MW Supercritical Coal based Uppur Thermal Power Project, Ramanathapuram (Client: L&T Geostructures).

✓ Foundation design recommendations for several buildings of Tamilnadu Slum clearance Board and Tamilnadu Housing Board (Client: Ramalingam Construction Company)

INTERNATIONAL VISIT

16th European Conference on Earthquake Engineering (June 2018), Thessaloniki, Greece.
16th World Conference on Earthquake Engineering, (January 2017), Santiago, Chili.

PROFESSIONAL MEMBERSHIPS

Life member, Indian Geotechnical Society, New Delhi, India (ID: LM-3855)
Life member, International Society for Soil Mechanics and Geotechnical Engineering
Individual member, Deep Foundation Institute (ID: 33921)

EXTRA CURRICULAR ACTIVITIES

- Session Coordinator for managing technical sessions and technical interactive forums for the 3day Indian Geotechnical Conference (IGC 2016) held in IIT Madras during December 2016.

- Lab Visit Coordinator: Actively organized and participated in explaining experiments Soil Dynamics Laboratory tests during divisional and CEA fest lab visits, IIT Madras, 2014-2018.
- Students placement representative for geotechnical engineering division in Anna University from 2010-2012.
- Ran short city marathon to create awareness on cancer issues during Jan 2017.
- An active member in tree plantation activities with Chennai based NGO during May 2017.
- Terracotta, jewelry making, painting and poetry

PERSONAL DETAILS

- Date of birth : 27.05.1988
- Citizenship : Indian
- Passport No. : N1185679
- Languages : English, Malayalam, Tamil & Hindi

REFERENCES

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Professor,
Department of Civil Engineering,
Indian Institute of Technology, Madras
Chennai, India 600036
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Dr. Subhadeep Banerjee
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