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Department of Civil Engineering
Indian Institute of Science
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EDUCATION	Indian Institute of Science, Department of Civil Engineering MSc, Ph.D., Geoenvironmental Engineering. Grade: 6.6/8 (MSc.)	2014 - 2019
	Jawaharlal Nehru Technological University, Kakinada B.Tech, Major: Civil Engineering Grade: 83.5%	2010 - 2014
	NRI Academy, Vijayawada Intermediate (Higher Secondary), Major: Physics, Chemistry, Mathematics, English Grade: 96.1%	2008 - 2010
RESEARCH PAPERS- JOURNAL	1. Sudhakar M Rao & Monica Rekapalli (2019) Identifying the dominant mode of moisture transport during drying of unsaturated soils, Nature Scientific Reports, https://doi.org/10.1038/s41598-020-61302-w 2. Sudhakar M Rao & Monica Rekapalli (2019) Soil water content-water activity relations of structured kaolinitic specimens from GAB equation, Geotechnique, https://doi.org/10.1680/jgeot.18.p.181 3. Sudhakar M Rao & Monica Rekapalli (2019) Influence of moisture loss on swell pressure and volumetric strain behaviour of desiccated kaolinitic residual soil specimens, International Journal of Geotechnical Engineering, https://doi.org/10.1080/19386362.2019.1655946 4. Sudhakar M Rao, Rita Evelyne & Monica Rekapalli (2020) Batch-scale remediation of toluene contaminated groundwater using PRB system with tyre crumb rubber and sand mixture, Journal of Water Process Engineering, https://doi.org/10.1016/j.jwpe.2020.101198 5. Sudhakar M Rao, Reshma S, Rita Evelyne & Monica Rekapalli (2020) Novel approach to create extracellular polymeric saccharides bonds in soil column, Geomechanics for energy and the environment. (Under Revision)	
RESEARCH PAPERS- CONFERENCE	1. Monica Rekapalli & Sudhakar M Rao (2018) Influence of environmental relative humidity on unconfined compressive strength of unsaturated residual soils, 7th International Conference on Unsaturated Soils, UNSAT 2018, Hong Kong.	
KEY COURSES UNDERTAKEN	Geoenvironmental Engineering, Unsaturated Soil Mechanics, Fundamentals of Soil Behaviour, Laboratory testing of soils and its stabilization using admixtures, Mathematical Analysis of Experimental Data, Foundation Engineering, Ground Improvement Techniques.	

LABORATORY SKILLS Laboratory testing of soils, Mercury Intrusion Porosimetry, Scanning Electron Microscopy, Water and wastewater analysis. **Software skills:** MS Office, Python

RESEARCH:

Doctoral (Ph.D.) Work (2014-2019), Under Prof. Sudhakar M Rao

Thesis Title:

ROLE OF PHYSICO-CHEMICAL PROCESSES AND MICRO-STRUCTURAL FEATURES IN INFLUENCING MOISTURE LOSS AND ENGINEERING PROPERTIES OF COMPACTED RESIDUAL SOILS EXPOSED TO ENVIRONMENTAL RELATIVE HUMIDITY

Brief outline of the work:

The physico-chemical processes and role of micro-structural features in moisture retention and moisture loss in unsaturated residual soil specimens and the consequences of moisture loss on their compressive strength and collapse behaviour are examined. The novel physico-chemical aspects of the work are; understanding the moisture loss process from compacted residual soils under controlled RH based on changes in thermodynamic parameters and exploring water sorption isotherms to characterize the equilibrium soil water content - RH relations of compacted kaolinitic soils. The novel micro-structural aspects of the work are; evolving an approach to select appropriate tortuosity equation for use in Fick's diffusion equation based on the dominant mode (liquid water or water vapor) of moisture transport and examining the influence of moisture loss under controlled RH on the compressive strength and collapse behavior of compacted soil specimens.

PROJECT
(May 2019 - April 2020) Under Prof. Sudhakar M Rao
Title: Self-healing of concrete using microorganisms
Position: Research Associate

Bacteria that can form CaCO_3 under highly alkaline conditions of concrete will be identified and the efficacy of bio cementation in concrete will be assessed by using imaging techniques

TEACHING AND GUIDANCE 1. 'Laboratory testing of soils' course for Post-Graduate students
2. Fundamentals of soil behaviour and basics of 'Foundation Engineering' course for Post-Graduate students (Teaching Assistant)

CONFERENCES AND WORKSHOPS 1. Presented a poster at 7th International Conference on Unsaturated Soils, UNSAT 2018 held at Hong Kong.
2. Attended 'Soil Physics with Python' workshop at Indian Institute of Science by **Prof. Marco Bittelli**, Univ. Bologna, Italy.
3. Participated in 'MECHANICS OF UNSATURATED SOILS' course by **Prof. Sai K Vanapalli**, Univ. of Ottawa organized by GIAN.
4. Participated in

- GEO-INNOVATIONS CONFERENCE - 2014
- 5th INTERNATIONAL CONFERENCE ON FORENSIC GEOTECHNICAL ENGINEERING - 2016
- INDIAN GEOTECHNICAL CONFERENCE - 2018

ACHIEVEMENTS	1. Secured top 1 percentile in GATE 2014 CIVIL ENGINEERING (2014) 2. Awarded with MHRD scholarship to pursue Ph.D. (2014-2019) 3. Board member of Indian Geotechnical Society (IGS) – Young Member Chapter (IISc, Bengaluru)	
SKILLS AND INTERESTS	1. Extra-Curricular Activities: President for student actuated club, civil engineering, JNTU Kakinada (2012-2014); Student Council - Event organizer, IISc Bengaluru (2015-2017) 2. Interests and hobbies: Dancing, painting, reading books, script writing, travelling, calligraphy, chess	
PERSONAL DETAILS	Father Mother DOB Marital Status Nationality Languages Current Address	R. Sreenivasa Baba R. Vani Kumari 21-02-1993 Single Indian English (fluent), Telugu (native), Hindi Geoenvironmental laboratory, Geotechnical Engineering Division, Department of Civil Engineering, Indian Institute of Science, Bengaluru-560012.
REFERENCES	1. Prof. Sudhakar M Rao, Geotechnical Engineering Division Department of Civil Engineering Indian Institute of Science, Bengaluru, India - 560012 Email: msrao@iisc.ac.in Ph: +91 80 2293 2812 2. Prof. T. Thyagaraj Geotechnical Engineering Division Department of Civil Engineering Indian Institute of Technology Madras, Chennai, India - 600036 Email: ttraj@iitm.ac.in Ph: +91 44 2257 4271 3. Prof. Anil Kumar Mishra, Geotechnical Engineering Division, Department of Civil Engineering, Indian Institute of Technology Guwahati, India - 781039 Email: anilmishra@iitg.ernet.in Ph: +91 361-258-2440 4. Prof. GL Sivakumar Babu Geotechnical Engineering Division Department of Civil Engineering Indian Institute of Science, Bengaluru, India - 560012 Email: gl@iisc.ac.in Ph: +91 80 2293 3124	