

CURRICULUM VITAE

Umesh Hule

Doctoral research scholar

Building Technology & Construction Management (BTCM) Division
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EDUCATION

Ph.D. (Civil Engineering)

Indian Institute of Technology Madras, Chennai, India, 600036
Research topic: Carbonation and Carbonation-Induced Corrosion in Steel-Cementitious Systems with Supplementary Cementitious Materials
CGPA: 8.54

*Aug 2021-
present*

M.TECH. (Construction Management)

College of Engineering Pune (COEP), Pune, India, 411005
Project report: Development of Project Definition Rating Index (PDRI) for Tunnels
CGPA: 8.54

Aug 2021

B. E. (Civil Engineering)

Maharashtra Institute of Technology (MIT), Pune, India, 411038.
Project: Feasibility analysis of sewage sludge digestion using anaerobic reaction
Percentage: 73.4 % (First Class with Distinction)

Jul 2018

RESEARCH EXPERIENCE

- As a post-graduate student at the College of Engineering Pune (COEP)
Project title: Development of Project Definition Rating Index (PDRI) for Tunnels
M.Tech. Project work under the guidance of Dr. M.S. Ranadive, Professor and Head, Civil Department, College of Engineering, Pune, India

*Aug 2020 –
Jun 2021*

Tunnel constructions are usually high-risk and complex projects. Often these projects lead to overrun in completion time and cost. Hence, thorough planning using an integrated tool is necessary to complete the project successfully. This study aimed to develop an effective risk management tool and help the project team understand issues in tunnel projects. The study conducted a questionnaire survey among contractors, consultants, and researchers to obtain qualitative inputs to develop a Project Definition Rating Index (PDRI) for tunnel projects. For this, the concept of Front-end planning (FEP) is used. The success rate of two case studies on tunnel projects was calculated using the developed PDRI tool. The data showed the tool's benefits in identifying high-risk factors and mitigating potential clashes in land appraisal requirements, permitting requirements, coordination of work, and scheduling.

- As an undergraduate student at Maharashtra Institute of Technology (MIT-Pune)
Project title: Feasibility analysis of sewage sludge digestion using anaerobic reaction
Umesh Hule, Akshay Deshmukh, Rohan Dhatbale, Pranav Gawade, under the guidance of Prof. Nivedita Gogate

Jan - Jun 2018

<p>The world is running behind renewable sources of energy. The reuse and recovery of energy from the sludge can be a sustainable solution for the future. This project attempted to evaluate the feasibility of treating the sludge of wastewater treatment plants (WWTPs) anaerobically to generate methane. The post-treatment process, like Anaerobic digestion, is the most widely used process for sludge stabilization because it can reduce organic matter by up to 50%. As a result, waste generation is reduced, and the post-treatment process is optimized. The study estimated the potential of methane as a fuel to produce electricity. A cost-benefit analysis revealed that treating sludge anaerobically to generate electricity is not a self-sufficient treatment requiring public investment.</p>	
TEACHING EXPERIENCE	
<ul style="list-style-type: none"> NPTEL (PMRF TA) for the Maintenance and Repair of Concrete Structures 	<i>April 2023</i>
CONFERENCE PUBLICATION	
<ul style="list-style-type: none"> Rathnarajan, S., <u>Hule, U.</u>, Pillai, R.G., and Gettu, R. "Long-term natural carbonation in concretes with fly ash and limestone calcined clay systems" in proceedings of <i>The International RILEM Conference on Synergising expertise towards sustainability and robustness of cement-based materials and concrete structures, Greece.</i> (Submitted) <u>Hule, U.</u>, and Ranadive, M.S. (2021) "Development of Project Definition Rating Index (PDRI) for Tunnels," <i>proceedings of the Advances in construction technology and management (ACTM-2021), Pune, India.</i> 	
CONFERENCE AND WORKSHOP ATTENDED	
<ul style="list-style-type: none"> GIAN course on Corrosion prevention and control: Importance in the era of sustainable development A week on building industry-academia collaboration on Technologies for Low Carbon & Lean Construction, Chennai, India Calcined Clays for Sustainable Concrete (CCSC 2022), Lausanne, Switzerland Seminar on Corrosion Control in Concrete Structures (C3S), Chennai, India 2-Day International Workshop on Advances in Technologies for Low Carbon & Lean Construction International Virtual Workshop on Advances in Tunneling and Underground Construction, Organized by: Faculty of Tunnel Engineering at MIT-WPU International conference on Advances in Construction Technology and Management (ACTM-2021), Organized by: COEP 	<i>April 2023</i> <i>Feb 2023</i> <i>July 2022</i> <i>Dec 2021</i> <i>Dec 2021</i> <i>Mar 2021</i> <i>Jan 2021</i>
COURSES UNDERTAKEN at IITM	Grades
Modern Construction Materials	<i>Jul – Nov 2021</i>
Characterization of Construction Materials	
Maintenance and Rehabilitation of Constructed Facilities	
Corrosion Engineering	<i>Jan – May 2022</i>
Bridge Engineering	
Advance Concrete Technology	
CERTIFIED COURSES	
NPTEL course on Maintenance and Repair of Concrete Structures	<i>Jan – May 2021</i>
NPTEL course on Advance Concrete Technology	<i>Jul – Nov 2020</i>

PREVIOUS WORK EXPERIENCE	
<u>Junior Engineer at Tirupati Construction Pvt. Ltd.</u>	<i>Jan - 1 2019</i>
I worked as an assistant surveyor, where I was assigned to monitor and report the progress of the work on a daily basis. I had the responsibilities to manage labors, construction equipments, and on-site materials. Also, I have gained experience in estimating earthwork quantities to prepare the subgrade as per the drawing profile.	
REFERENCES	
Dr. Radhakrishna G Pillai Associate Professor at Dept. of Civil Eng., Indian Institute of Technology Madras Chennai, India- 600 036 E-mail ID: pillai@civil.iitm.ac.in	Dr. M. S. Ranadive Professor and Head, Civil Department, College of Engineering, Pune, India, E-mail ID: hod.civil@coep.ac.in