



**EDUCATION AND SCHOLASTIC ACHIEVEMENTS**

Program	Institute	Year
Ph.D. Building Technology and Construction Management	Indian Institute of Technology Madras, Chennai, Tamil Nadu	2024
M.Tech. in Construction Technology and Management	Indian Institute of Technology Madras, Chennai, Tamil Nadu	2014
B.E. in Civil Engineering	Dr. MCET, Pollachi affiliated with Anna University Chennai, Tamil Nadu	2012
Class XII (Tamil Nadu Higher Secondary Education)	B.V.M. Matric Higher Secondary School, Pollachi, Tamil Nadu	2008
Class X (Tamil Nadu Matriculation)	Our Lady of Lourdes Matric Higher Secondary School, Pollachi, Tamil Nadu	2006
Proficiency rank holder   Gold Medalist  1 <sup>st</sup> (2009-10), 3 <sup>rd</sup> (2011-12)(2008-12)	BULATS Examination   University of Cambridge (90-100%) (2009)	Half-Time Research Assistantship from MHRD, Govt. of India (2015-20) Top 30 UG selected for M/s. L&T's Build India Scholarship XV (2012-14)

**JOURNAL PUBLICATIONS**

<b>Journal Publications</b> Scopus: 57321149600	1. E. Muthu Kumar, <b>T. Manjari</b> , and K. Ramamurthy. (2020). "Studies on properties of binary, ternary and quaternary mixes of AAC with low cement content for application as masonry unit." <i>Journal of Masonry International, International Masonry Society</i> 33(2), 36-63.
	2. <b>T. Manjari</b> and K. Ramamurthy (2023), "Influence of curing methods on mine overburden-based geopolymer aggregate properties." <i>Journal of Building Engineering</i> , Volume -71, 106502, ISSN 2352-7102.
	3. <b>T. Manjari</b> , V. Manoharan, K. Ramamurthy (2023), "Effective utilization of mine overburden soil in producing aggregates by pelletization." <i>Journal of Construction and Building Materials</i> , Volume -407, 133408, ISSN 0950-0618.
<b>Symposium</b>	TCL2 Young Researcher Symposium 30 <sup>th</sup> Jan-3 <sup>rd</sup> Feb'23 IITM India  12/30 international finalist  Presentation, poster & video contest

**COURSE PROJECTS**

CE5020	Construction planning & control	Developing <b>work breakdown structure</b> /milestone activities, <b>baseline schedule, resource allocation/leveling, cost &amp; earned value analysis</b> for modular fabrication of offshore oil drilling platform at Kattupalli, Chennai  MSP
CE6050	Lean construction tool concepts & applications	Implementation of lean at 2 construction sites (Oil drilling platform fabrication yard & apartment construction) through lean tools such as <b>value stream mapping, process/ crew balance charts, tour-based work sampling</b> for different activities
CE6030	Construction economics and finance	<b>Financial performance evaluation</b> of balance sheet, cash flow statements, profitability indicators, financial ratios, share value for M/s NCC lit.
CE5100	Construction software lab	<b>Cyber-enabled collaboration project:</b> IIT Madras, Virginia Tech, University of Twente, University of Washington <b>Designing, cost estimation, scheduling, modeling, 4D simulation, optimization, life cycle energy analysis</b> for extended construction of an existing property in Holland  BIM: Revit, Sim Vision, Navisworks
CE5334	Global Construction engineering & management practices	<b>Multi-institutional team project:</b> IIT Madras, NC State University, Tianjin University, University of Calgary Comparative study on the <b>design and construction practices</b> -similarities and differences for <b>multifamily residential buildings</b> between <b>India and USA</b>
CE5120	Main. &Rehab. Const. facilities	<b>Assessment and proposing repair strategies/ techniques for an existing building in foreshore estate-Chennai</b> , through visual assessment and non-destructive techniques: rebound hammer, Ultrasonic pulse velocity test, half-cell potential test, cover meter, profo meter, carbonation test, chloride test
CE6010	Construction contracts & specifications	<b>Liquidity damages analysis</b> on court case; case 1: GAIL India Case 2: Delhi Development Authority Investigation of <b>irregularities in bidding &amp; award of contract</b> for 2010 Commonwealth Games project
CE5014	Sustainable construction	<b>Life cycle energy analysis (LCA)</b> from cradle to grave through relative embodied & operational energy for a residential building using <b>process LCA method, economic input-output method &amp; hybrid LCA method</b>
CE6110	Advance concrete technology	Study on <b>curing of concrete:</b> Need, methods, effect on strength, cost estimate   Relative analysis Study on the influence of <b>nanomaterials on concrete properties:</b> Potential effects & enhancement mechanisms
CE5950	Characterization of construction materials	<b>Quantification of amorphous content</b> by XRD-PONKCS for soil & cementitious materials Study needs & applications using <b>external &amp; internal standard methods, direct comparison method</b>
ID6103	Practical Transmission Electron Microscopy	Investigate <b>metal, ceramic &amp; powder samples</b> for obtaining <b>bright &amp; dark field images, selected area diffraction patterns, indexing</b> using TEM  Iron milling, electro jet polishing, ultrasonic disc cutting

**STUDENT PROJECTS**

<b>Undergraduate mini project</b>	<b>Deformation study on vertical rectangular slip-form work</b> (2011-12) Stress and deflection analysis of existing rectangular slip formwork systems using ANSYS software Optimized rectangular slip formwork design for damage-free concreting and durable formwork based on stress-deflection analysis
<b>Undergraduate main project</b>	<b>Alternate bridge design for Pandavaiyaru River bridge</b> (2011-12) Data collection on Pandavaiyaru river flow profiles, meandering patterns, and hydraulic analysis for designing bridge structure Comparative design study on the conventional and post-tension bridge deck  Pile foundation design   Auto CAD & STADD pro.
<b>M.Tech. Project</b>	<b>Influence of lightweight aggregate on internal curing of concrete</b> (2013-14) Manufacture lightweight aggregate from fly ash using alternate binders  optimizing pelletization parameters <i>Comparative study on using cold bonded &amp; sinter-hardened fly ash aggregate on internal curing for different curing conditions</i>
<b>Ph.D. Research</b>	<b>Study on the manufacture and properties of lightweight aggregates from overburden soil</b> (2015-24) Suitability of mine overburden soil for manufacture of sintered LWA   pelletization  chemical binders and mineral admixtures Relative influence of methods of manufacture and hardening  Conventional sintering, geopolymerization, microwave curing

**PROFESSIONAL EXPERIENCES**

<b>Internships</b>	<b>M/s. Larsen &amp; Toubro Limited, ECC Division at ESIC Model Hospital, Coimbatore</b> (25 <sup>th</sup> Nov -5 <sup>th</sup> Dec'10) Project: Design, planning, and construction of the hospital, medical college students' hostels, staff quarters, and accessory buildings Exposure: Survey, quantity surveying, scheduling, reinforcement detailing, concreting, mass foundation for G+6-8 floors
	<b>Highways &amp; Rural Works Division, Govt. of Tamil Nadu, Thiruthuraiipoondi, Tiruvarur district</b> (1 <sup>st</sup> -18 <sup>th</sup> May'11) Exposure: Standard penetration test, vertical pile load (Kentledge) test, laying bituminous roads, raft/pile foundation construction
	<b>Pongalur Public Works Department, Govt. of Tamil Nadu, at Aliyar Nagar, Coimbatore district</b> (19 <sup>th</sup> May -19 <sup>th</sup> Jun'11) Project: Repair and rehabilitation of Contour canal with multiple tunnels in Indira Gandhi Wildlife Sanctuary and National Park Exposure: Contour survey, relaying concrete canals & tunnels, risk assessment, and policies for construction in reserved forests
	<b>M/s. Larsen &amp; Toubro Limited, ECC Division, GIDC PCPIR (SEZ), Dahej, Bharuch, Gujarat</b> (20 <sup>th</sup> May -6 <sup>th</sup> Jul'13) Project: Construction & commissioning of Dahej water supply from Narmada River to Gujarat Industrial Development Corporation Exposure: Well-foundation, pipe (1.83mφ) laying, testing, large ground-level reservoir (25&50MGD) construction

PROFESSIONAL EXPERIENCES (cont...)			
Company L&T ECC Senior Engineer	<b>Management of Information Systems/ Water and Renewable Energy Independent Company of L&amp;T</b> (1 <sup>st</sup> Aug'14-13 <sup>th</sup> Jul'15)		
	Aided team lead in monitoring, auditing, and reviewing financial operations for 800+ water-related projects  India and International Strategic assessments on quantitative, qualitative & financial processing tracking key performance indicators execution Organizing & participating in high-level multi-tire financial meetings, extensive competitor analysis in tendering & bidding Fostering effective project management, decision-making, and identification of futuristic water-related businesses/projects		
Asst. Professor NIT Karnataka	<b>Specialization: Construction Technology and Management</b> (12 <sup>th</sup> Dec'24-Present)		
	UG Courses: Civil Engineering Materials and Construction, Introduction to Design Thinking; PG Course: Organizational Behaviour		
Contract Faculty NIT Trichy	<b>Specialization: Construction Technology and Management</b> (9 <sup>th</sup> Nov'23-6 <sup>th</sup> Dec'24)		
	Crash course lecturing to M.Tech. Construction Technology and Management programme students of the Department of Civil Engineering, NIT Tiruchirappalli, Trichy  PG Courses: Construction Contracts and Specification, Construction Methods and Equipment, Advanced Concrete Technology, Construction Management Software Laboratory		
Special Professional Training IIT Madras	<b>Pedagogy: Teaching Learning Assistant Program (TATP)</b> (1-3 <sup>rd</sup> Apr'16)		
	Completed training on TATP organized and conducted  Teaching Learning Centre		
	<b>Mechanical Testing of Materials using Zwick</b> (27 <sup>th</sup> Jun'17)		
	Mechanical testing of materials using Zwick-50 KN UTM, MPCEM Laboratory  Dept. of Civil Engineering		
	<b>Transmission Electron Microscopy (CM12)</b> (24-28 <sup>th</sup> Oct'17)		
	<b>X-ray diffraction</b> (Bruker's D8 Discover) (20-22 <sup>nd</sup> Dec'17)		
	<b>Scanning Electron Microscopy</b> (Quanta 200 FEG SEM) (2-6 <sup>th</sup> Jul'18)		
Research Assistant	Sample preparation & handling, instrument operation, analysis in software  Dept. of Metallurgical and Materials Engineering		
	<b>Patent search/ patent strategy/ patent analytics  Orbit &amp; XLPAT-Novelty Checker</b> (19 <sup>th</sup> Sep'19)(6 <sup>th</sup> Feb'21)(20 <sup>th</sup> Mar'21)		
	Patent / non-patent search, treatment, analytics, novelty check  Orbit express & intelligence (Questel), XLPAT AI tool  IP cell (ICSR)		
	<b>Allied projects:</b> Assisted in preparing experimental setups, performing the experiment, data analysis, documentation of report and supervised project staff/ teaching assistants for Govt. of India, Ministry of Mines		
	1. Development of alternative materials for pebbled using overburden/ Ash materials, NLCIL CARD (2017-19)		
	2. Use of overburden clay as an alternate for coarse aggregate (Project cost: INR.1.78Cr.) (2017-21)		
	<b>Collaborative research on Autoclaved Aerated Concrete (AAC) masonry</b> (2016-18)		
Teaching Assistant	Designed and developed binary, quaternary, and ternary mixes to maximize AAC with maximum strength to density ratio Investigated the effect of aerating agents, admixtures, and superplasticizers on fresh and hardened properties of low cement AAC		
	<b>Sample preparation and analysis for fellow research scholars across departments in IIT Madras</b>		
	X-ray diffraction (Jan-May'18)  Scanning Electron Microscopy (July-Nov 2018)  Transmission Electron Microscopy (Jan-May 2019)		
	<b>ID6103 (M. Tech, M.S., and Ph.D.) Practical Transmission Electron Microscopy graduate-level</b> (1 sem)(Jul-Nov'18)		
Journal reviewer	Explaining, demonstrating, and providing guidance for carrying out material-specific sample preparation techniques		
	Providing demo cum hands-on training sessions for handling CM 12 TEM instrument		
	<b>CE3410 (B.Tech.), CE5090 (M. Tech, M.S. and Ph.D.) Construction materials laboratory</b> (9 sems)(Jul'15-May'18)(Jul'19-May'20)		
Explaining, demonstrating, and providing guidance in conducting a laboratory experiment			
Preparing lab schedule, experimental setup, report evaluation, preparing end semester question papers & evaluating answers			
POSITIONS OF RESPONSIBILITY			
Coordinator IIT Madras Institute student bodies	Journal of Building Engineering (2023 onwards)		
	<b>Research Affairs Council (RAC)</b> (2 sems)(Jul'15-May'16)		
	Active participation in the design team of RAC for designing posters, flyers, placement profiles, academic yearbook Data acquiring & coordinating for compiling institute research scholar yearbook & placement profile for the academic year 2016-17		
	<b>Disaster Management Committee (DMC)</b> (2 sems)(Jul'15-May'16)		
Volunteer	Completed Basic Life Support course by Personal Empowerment in Emergency Response (PEER) program (22 <sup>nd</sup> Oct'15)		
	Organizing various trainings on Krav Mag martial arts, fire extinguishing, and Cardiopulmonary resuscitation (CPR) procedure		
	Working closely with the National Disaster Response Force (NDRF) and IIT Madras Hospital during Chennai floods supplying potable water & food packets, setting up medical camps		
	Safety audits of girls' hostel checking availability/working of first aid kits, emergency sign boards, fire extinguishers, intercoms		
	Indian Concrete Institute (ICI) Fest 2013 volunteer (14-15 <sup>th</sup> Mar'13)		
Workshops	ICI-IITM National Concrete Canoe Competition (NCCC) volunteer (21-23 <sup>rd</sup> Aug'15)		
	Advanced Concrete Technology Workshop 2015 organizer (29 <sup>th</sup> Nov-4 <sup>th</sup> Dec'15)		
	M.S. and Ph.D. admission assistance (12 <sup>th</sup> May'17)(7-9 <sup>th</sup> Dec'17)		
	International conference (ICACMS) Poster session organizer (5-7 <sup>th</sup> Sep'17)		
Courses attended during PhD	Actively organized pep talks on the various experimental setups and research carried out in IITM Civil-BTCM laboratories, during division (workshops), department (CEA fest), institute (Shaastra open house), and occasional lab tours (2015-2021)		
	Achieving Durable Concrete Construction Through Performance Testing Workshop (3 <sup>rd</sup> Feb'14)		
Virtual workshops	Workshop on Limestone Calcined Clay Cements (LC <sup>3</sup> ) (4 <sup>th</sup> Sep'17)		
	The Carmen Andrade Workshop on Corrosion Control in Concrete Structures (C <sup>3</sup> S) (8 <sup>th</sup> Sep'17)		
Software   Tools  Techniques	Course on Corrosion Mitigation for Reinforced Structures  Cathodic protection of concrete structures (4 <sup>th</sup> Oct'18) (2 <sup>nd</sup> Jan'19)		
	Mendeley workshop for researchers   workshop and skill-building team IIT Madras (17 <sup>th</sup> Dec'20)		
Workshop on preparing technical documents using LaTeX   workshop and skill-building team, IIT Madras (5-9 <sup>th</sup> Feb'21)			
RESEARCH LEVEL COURSES			
Skills	Data Analysis for Research	Characterization of Construction Materials	Principles and techniques of Transmission Electron Microscopy
	Advanced Concrete Technology	Advanced Materials Characterisation Lab	Practical Transmission Electron Microscopy
Courses attended during PhD	Modern construction materials	Non-destructive Evaluation of Structures	
	X-ray Diffraction Techniques	Modern Techniques of Material Characterization	
Software   Tools  Techniques	Environmental Impact Assessment		
SKILLS			
Software   Tools  Techniques	MSOffice 365, LaTeX, Auto CAD, Visual Studio, BIM-Revit, Sim Vision, Navisworks, MSP, ANSYS, STAAD Pro., Fiji Image J, X'Pert High Score, Design Expert, Sigma Plot, Origin Pro		TEM, SEM, Optical microscopy, XRD, XRF, ICPS, TGA/DSC, MIP