Curriculum Vitae

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Academic Record

Dec 2020 to present – Indian Institute of Technology Bombay
- Doctor of Philosophy– Construction Technology and Management
- Present Grade (CPI): 9.18/10
- Awardee of the prestigious **Prime Minister Research Fellowship (PMRF)**, Dec 2020 – Dec 2024, funded by Government of India

Jul 2016 to May 2018 – Indian Institute of Technology Madras
- Masters in Technology – Construction Technology and Management
- Final Grade: 9.46/10
- Published one international journal in Life Cycle cost of 1MW solar PV power plant in BEPAM journal, an emerald publication
- Published one conference paper on using solar energy for operating waste water treatment plants in World Construction conference, Colombo, 2018 Srilanka and won the prestigious BEPAM Highly commended paper award

Jul 2010 to May 2014 - College of Engineering Guindy, Anna University Chennai.
- Bachelor of Engineering - Mechanical Engineering
- Final Grade: 8.59/10 – **secured First Class with distinction**
- Secured 'S' grade (highest grade) in Heat and Mass transfer in Semester Examination.

Jun 2009 to Mar 2010 - RSK Higher Secondary School, Kailasapuram, Trichy
- Specialization: Physics, Chemistry, Computer Science and Mathematics
- Final Mark: 97% (1162/1200), Tamil Nadu State Board–**secured cent percent in Mathematics**

Jun 2007 to Mar 2008 - RSK Higher Secondary School, Kailasapuram, Trichy
- Specialization: Mathematics, Science, Social Science
- Final Mark: 92% (460/500), Central Board

Work Experience

Dec 2020 to present – Indian Institute of Technology Bombay
Prime Minister Research Fellow (Construction Technology and Management | Dept. of Civil Engineering)
- Involved in the domain of "Urban Building Energy Modelling' under the supervision of Prof. Albert Thomas
- Providing guest-lectures in universities under the series on "Agent based Modeling", as part of the PMRF commitment

Jun 2018 to May 2020 - Larsen and Toubro Construction, Contracts department
Assistant Manager (Mechanical) (Waste-Water Business Unit).
- Involved in complete bid preparation starting from preparation of Tender information sheet, checking for the significant clauses of the contract, technical bid preparation, and Electro-Mechanical estimations, risk review document preparation up to bid submission.
- Special interest shown to create user-friendly working sheets for estimations, which saved considerable man-hours
- Involved in Validating every process/mechanical equipment offers, which comprises of the below:
  - Electro-mechanical equipment's: Submersible Centrifugal pumps, Horizontal centrifugal/split casing pumps, aeration blowers, mechanical course/fine screen, Sluice gate, SBR systems, chlorination system, conventional/vortex grit mechanism, UV systems, Hydro-pneumatic surge arresting pressure vessels, Centrifuge, Clarifiers, thickeners, dosing systems.
  - Valves: Gate valves, butterfly valves, non-return valves, knife gate valves, ball valves
  - Pipes & Fittings: Ductile iron/Cast iron/Mild steel/Stainless steel pipes & fittings.
- Checking through all the technical deliverables from various departments for bid submission.
- Interaction with International/Local suppliers for getting the quote and involved in Techno-commercial comparison for every equipment for arriving the estimate.
- Involved in Business development to prepare technical documents with commercial backup educating prospective clients for new tender release.
- Involved in back to back interactions with different disciplines from Design, Operations & Management, Supply chain management, Operations creating interfaces for smooth transition of project
- Preparation of technical presentations to refresh young minds coming into the corporate brushing through

the basics of critical mechanical equipment's
- Involved in building a strong team with young freshers to carry forward the working style of self
- Shown special interest in the field of renewable and sustainable construction which led to think about using solar PV panels to run the sewage treatment plant which extended to conference and publication level

Jun 2014 to 2016 - Larsen and Toubro Construction, Engineering Design and Research Centre – **Senior Design Engineer- Mechanical, Utility & In-plant Piping** (Waste-Water Business Unit).

- Designed Sewerage Network using Bentley SewerGems for Guntur Zone II.
- Designed Sewerage and Raw water/Clear water pumping stations for On-going/tender jobs.
- Involved in the selection of pumps based on the hydraulics and application.
- Instrumental in streamlining documents and calculations through functions in Microsoft Office.
- Supplemental in the design and subsequent client approval of General Arrangement drawings of pumping station including Layout and In-plant piping for Sewage treatment plant, Rampur operating job.
- Played a pivotal role right from designing of Sewerage network up to the design of Treated Effluent pumping station within the Sewage Treatment plant during tender stage of Pali project operating in Rajasthan
- Prepared Process and Instrumentation diagrams for Pumping stations.
- Raised Purchase Requisition for Submersible pump, End Suction pump, Horizontal Split casing pump, Vertical turbine pump, Mechanical & Manual Screens, Sluice Gate, Sluice Valve, Non return valve, Manually/Electrically operated hoist/Crane, pipes and fittings for Pumping stations/Sewage Treatment plants
- Technically reviewed vendor offers for the Electro-Mechanical items within Pumping stations/STP and cleared after the Vendor's Compliance over the queries raised for getting final Approval from Client before procurement

Projects Undertaken (Tender jobs)

Jun 2018 to present (Critical project)

MCGM – **500 MLD STP, Worli** & **360 MLD STP, Bandra** bid submission

- Involved from the start of the project preparing the pre-bid queries, Tender information sheet capturing significant contractual clauses, preparation of technical bid and bid submission
- Fully involved in complete Electro-mechanical estimation worth about **1000 Cr**, which comprise techno-commercial comparison of various equipment's and selection of the appropriate offer.
- Involved in selecting the appropriate technology based on the life cycle cost approach taking into consideration O&M of 15 years.
- Bringing in new technologies exploring the international market not missing the commercial viability simultaneously
- Developing thumb rule analysis to check the correctness of the submitted offers for equipment's like submersible pumps, horizontal pumps and in-detailed fabrication components estimation of mechanical/manual screens and multi-deck rectangular clarifiers

Projects Undertaken (Operating jobs)

Jun 2015 to 2016

- Construction of Water Supply NRW, Sewerage System & STP at Pali (15 MLD STP) Owner: RUIDP (Rajasthan Urban Infrastructure Development Project) – **Design Lead** from Mechanical, Utility & in-plant Piping team
- Development of Eco-city, Mullanpur in Ajit Garh near Chandigarh (8 MLD STP) Owner: GMADA (Greater Mohali Area Development Authority)
  DEVELOPMENT PROJECT)
- Rampur Sewerage Works- Zone V (5 MLD STP) Owner: UP-JAL NIGAM (Uttar Pradesh Jal-Nigam)

Software Skills

Jun 2014 to present

- QGIS
- Integrated Environmental Solutions (IES): Virtual Environment (VE)
- Integrated Environmental Solutions (IES): Intelligent Community Design (ICD)
- Design Builder
- Bentley SewerGems
- Bentley WaterGems
- Primavera – Construction planning
- Autodesk Rivet
- Autodesk Navisworks
- MS Office 2010
- Autodesk Auto CAD 2015

Co-Curricular Industrial Experience

Jul 2013 to December 2013 - Design and fabrication of reactor to extract oil from waste plastic carried out under Dr. D Mohanlal, Professor & Head R&AC, Department of Mechanical engineering, College of Engineering Guindy.

- Designed SS pipe (pressure vessel) referring ANSI B36.19 and ASME code as standards for pipe Schedule, design of end cap, flange selection based on the working pressure.
- Utilized PID controller with thyristor drive for temperature control monitored using thermocouple sensor.
- Employed Nitrogen and exhaust gas flow regulating valves.
- Successfully extracted oil from plastic using the reactor design.

Vocational Training

15 to 20 Feb 2016 - Supervisory Development Program organized by L&T for future executives and managers.

- Batch consisted of 23 members who were nominated from approximately 200 peers.
- Topics covered: functional (eg: Tendering and Contracts, Working Capital Management, Indirect Taxation, etc.) and behavioral (eg: Interpersonal Effectiveness, Negotiation Skills, etc.).

April to June 2015 - Online courses on "Business Communication" and "Business Etiquette" organized by L&T in collaboration with Anytime Learning (ATL) India.

4 to 25 Sep 2014 - Program on Engineering, Technology and Business operations organized at Centre for Technology and Engineering Applications, Mysore.

24 Jun to 6 Jul 2013 - Short – term certificate course in CFD (Computational Fluid dynamics) using ANSYS – FLUENT, organized by AU – FRG institute for CAD/CAM, Anna University Chennai

10 to 22 Jun 2013 - Short – term certificate course in ADAMS (Automated dynamic Analysis of Mechanical Systems), organized by AU – FRG institute for CAD/CAM, Anna university Chennai.

Academic Awards and recognition

Dec 2020 – Selected as the awardee of the prestigious "Prime Minister Research Fellowship" for the cycle Dec 2020 – Dec 2024, funded by Government of India - the scheme seeks to attract the best talent pool of the country into research, thereby realizing the vision of development through innovation https://dec2021.pmrf.in/

Sep 2019 – Publication in International journal – "Life cycle cost analysis of 1MW power generation using roof-top solar PV panels" at journal of "Built Environment Project and Asset Management" , an emerald publication (Link to read through the publication: https://www.emerald.com/insight/content/doi/10.1108/BEPAM-12-2018-0161/full/html)

July 2018 – Highly commended paper award –7th World Construction Conference presenting "Feasibility of using solar energy to operate waste-water treatment plants" organized by Ceylon Institute of Builders, Srilanka & Department of Building Economics, University of Moratuwa, Srilanka

Apr 2014 – First prize – Paper Presentation on "Self Inflated Tyres" - presented at Pinnacle, A national level technical symposium for Mechanical Engineers, organized by Department of Mechanical Engineering, College of Engineering Guindy.

Publications – under progress

Presently working on a research journal under the tile "Envisioning the effect of ECBC compliance on the residential building community using Urban Building Energy Modeling framework"

Co-Curricular/Sports- Awards and recognition

Feb 2015 & Feb 2016 – Champion - Inter-IC Club Chess tournament (for 2 consecutive years) - represented Water and Effluent Treatment IC.

Apr 2013 – Finished fourth / Second Semi-finalists - National level Inter College Team Chess Championship held at SSN College, Chennai. – represented College in the capacity of Team Leader.

Responsibilities undertaken

Sep 2016 – Design lead of Mechanical, Utility and in-plant piping team for various operating STP projects

Jun 2018 – Estimation lead of Process/Mechanical team for various STP tenders/proposals

Mar 2012 - Organized a workshop on Ornithopter Design and Fabrication at Kurukshetra (national level technical symposium organized by College of Engineering Guindy under the patronage of UNESCO).

- **First of its kind in South India**
- Targeted at school students, the workshop witnessed a footfall of well over five hundred, over the course

of two days.

- **13 Mar 2012 –** Concepts pertaining to design basis and fabrication of Ornithopter clearly explained to the students **by self.** Technical Lecture sessions were succeeded/followed by interactive Q&A sessions.
- **14 Mar 2012 - H**ands-on training for the participants in making Ornithopter on their own by providing the necessary kits and guidance. Around **50** coordinators and volunteers were deployed for the same.
- Stationery and gifts awarded to the students with outstanding Ornithopter design.

Linguistic competency

- **Mother Tongue: Tamil**
- **English: "Very Good" competency**
- **Hindi: Certification level (Rashtrabhasha Praveen)**

Personal declaration

I hereby declare that all details furnished above are true to the best of my knowledge and belief.

Date: 04th May 2022

Signature: 

LinkedIn profile url:
https://www.linkedin.com/in/omprakashrethnnam