



**ALUMNI AND CORPORATE RELATIONS**  
INDIAN INSTITUTE OF TECHNOLOGY MADRAS

# Celebrating the generosity of **Prof. Nallayarasu S**



Impact of your giving in 2024

# DIRECTORS MESSAGE

Greetings!

IIT Madras continues to retain her top position for the ninth consecutive year, in the National Institute Ranking Framework, thanks to the world-class research, unwavering dedication and creative mindset of its faculty and students. The contribution and support of Alumni and well-wishers like you have crucially helped this standing and stature. Our achievements in research, education, innovation, and entrepreneurship have also earned us the recognition of an 'Institute of Eminence' as well as the top position in the Atal Innovation Ranking from the Government of India.

IIT Madras is making an indelible mark in promoting and providing education to students from the length and breadth of India to areas beyond Indian territory, through her initiatives in rural developmental educational programs, international, interdisciplinary M.Tech courses, and online diploma courses. The popularity and reach of our online courses can be gauged by the fact that around 25000 students in ages ranging from 17 to 82, have enrolled for these courses across national boundaries, and about 30% are from rural India. The institute, in a first-ever initiative by an IIT, has consolidated its position on the world map by establishing her international campus in Zanzibar, Africa where about 45 students have been admitted to different programs.

Innovation and entrepreneurship are ingrained in all our endeavours – our ambitious ventures in rocket and space explorations, the development of lab-grown diamonds, hyperloop, the Brain Research Centre etc, are a testimony to this. The start-up ecosphere is also a reflection of this spirit, wherein last year, 70 startups came to fruition, successfully nurtured by our centres of excellence, the Centre for Innovation, Nirmaan – the pre-incubator, the Incubation Cell, technology centres such as 'IITM-Pravartak' at the IIT Madras Research Park and others. This year, our target is to incubate at least a 100 Start-ups in various sectors. It is expected that at least 20% of the passing out students will be proud CXOs of their own ventures! The year 2023 also saw 221 national and 105 international patents from our Institute and we are looking to closing this current financial year with 366 patents, to account for 'a patent a day'.

Towards promoting inter-disciplinary research and exploring new frontiers, a Department of Medical Sciences and Technology was launched in May 2023, a School of Sustainability in Oct 2023, a Department of Data Science and Artificial Intelligence in Nov 2023 and a new Interdisciplinary Dual Degree program on Quantitative Finance in Dec 2023 through the synergy of the departments of Management Studies, Computer Science and Engineering and Mathematics.

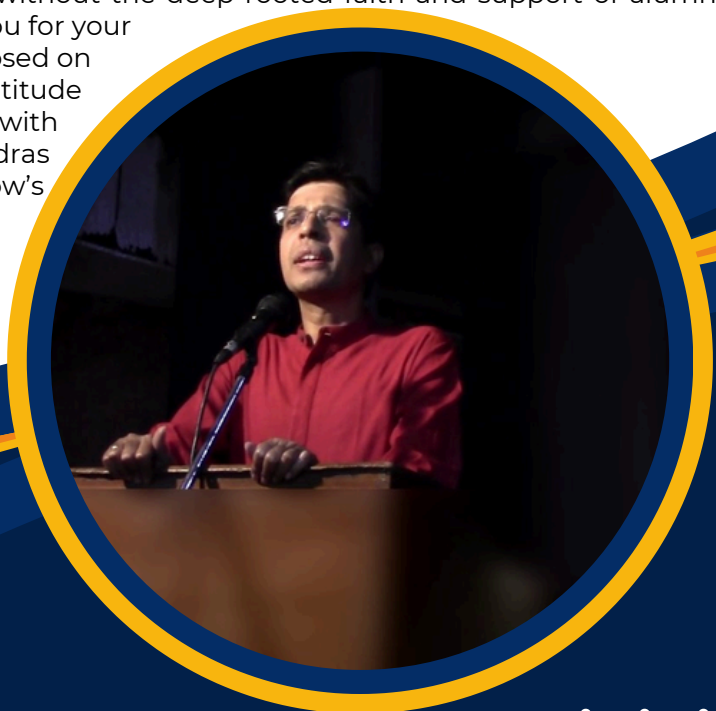
Our School of Sustainability has signed MoUs for collaborations with Tel Aviv University, Israel and Technische Universität Dresden, Germany, with the aim of being recognized as a leader for sustainability teaching and research in the global south.

Lofty ambitions and achievements are impossible without the deep-rooted faith and support of alumni and well-wishers like yourself. We are indebted to you for your bountiful, impactful contributions and the faith reposed on us. On behalf of IIT Madras, I express my deepest gratitude for continuing to strengthen the Institute. Together with your support, we are confident of building an IIT Madras that is more inclusive, diverse, and seized of tomorrow's needs to be nationally and globally relevant.

Thank you!

**Prof. Kamakoti Veezhinathan**

Director, IIT Madras



# DEANS MESSAGE

Greetings from the Office of Alumni and Corporate Relations,

I want to extend my deepest gratitude for your incredible generosity and continuous support towards IIT Madras. An act of giving is much more than making a donation. It is the manifestation of kindness, compassion, and deep-rooted empathy within each of us. It is the very essence of being human. And as one of our esteemed donors, you are no exception to this.

Strong academic institutions play a critical role in today's world - training minds young and old, and contribution to research and innovation. Your contributions have had a truly transformative impact, not only on the institute but also on our students, faculty and the broader community. This "Impact of Giving" report serves as a testament to the profound influence your contributions have had on the lives of our current students, the advancement of innovation in research, and the infrastructure of the institute.

At IIT Madras, we take great pride in the strong relationships we have fostered over the years. It is through your consistent engagement with us that we've been able to push the boundaries of innovative research, improve our infrastructure, and provide scholarships that have empowered students from diverse backgrounds. These efforts have created life-changing opportunities, ignited new ideas, and elevated IIT Madras to the forefront of global education and research.

Your commitment, as part of our esteemed benefactor network, has strengthened our institute's global reach. It has opened doors to new partnerships, fostered collaborations, and helped us nurture the leaders of tomorrow.

We are profoundly grateful for your belief in IIT Madras. Your continued support not only upholds the values and traditions of the institute but also helps us chart a bold and visionary path forward. Together, we are building a legacy of lasting excellence.

Once again, thank you for your dedicated engagement with IIT Madras



**Prof. Ashwin Mahalingam**

Dean, Alumni and Corporate Relations, IITM





## **Prof. S. Nallayarasu**

[1990/M.Tech/Ocean Engineering]

**Head, Dept of Ocean Engineering, IIT Madras**

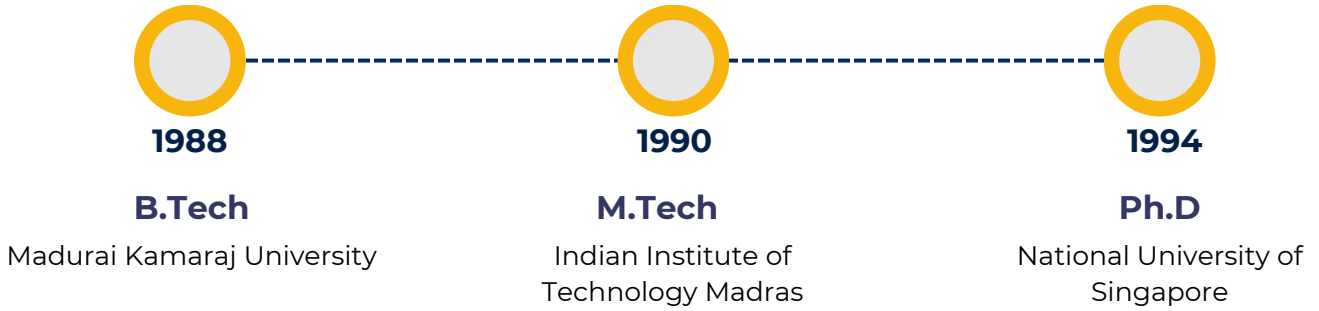
Prof. S. Nallayarasu is a faculty member in the Department of Ocean Engineering at the Indian Institute of Technology (IIT) Madras. He holds the position of head of the Department and has made significant contributions to the field of ocean engineering.

Dr. Nallayarasu's primary areas of research include Analysis and design of offshore structures, Wave-structure interaction, Reliability in offshore structural design, Behaviour of stiffener tubular joints, Offshore wind energy, Submarine pipelines and risers, Hydrodynamic response of spar hulls.

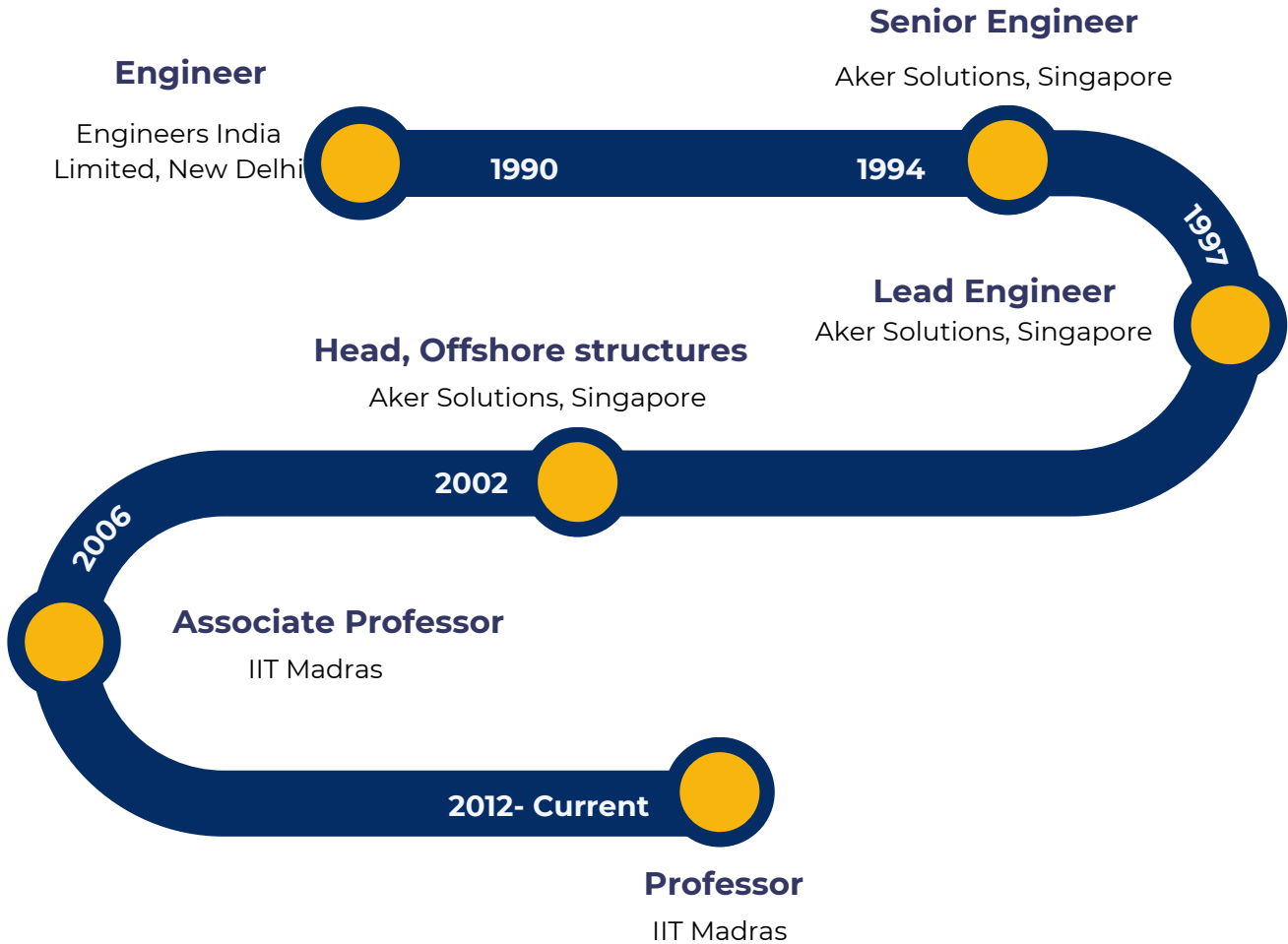
Dr. Nallayarasu has a strong academic background, holding a Ph.D. in Ocean Engineering. He has authored numerous publications in reputed journals and conferences, with a focus on Hydrodynamic response of buoy form spar with heave plate near the free surface validated with experiments and Investigation on ship mooring forces including passing ship effects validated by experiments. He is actively engaged in both teaching and research, mentoring graduate and doctoral students, and contributing to the development of cutting-edge technologies in the domain of ocean engineering.

Throughout his career, Dr. Nallayarasu has been involved in various research projects funded by governmental and industrial agencies. He is committed to advancing the knowledge base in ocean engineering through both theoretical and applied research.

## EDUCATION TRAJECTORY



## CAREER TRAJECTORY



## CAUSES SUPPORTED

01 **C.P Vendhan Institute Chair**

02 **Prof. C Ganapathy Institute Chair**

## C. P. Vendhan Institute Chair

Prof. C. P. Vendhan retired as Emeritus Professor from the Ocean Engineering Department at IIT Madras in May 2015, after 35 years of distinguished service. He began his career at IIT Madras in 1979 as a Research Associate and later became a faculty member in 1980. He completed his B.E. (Civil) and M.Sc. (Structural Engineering) at the College of Engineering, Guindy, and earned a Ph.D. from IIT Kanpur in 1975. He then worked as a Post-doctoral Research Associate at the University of Massachusetts before returning to IIT Madras.



**Prof. C. P. Vendhan**

Prof. Vendhan developed many large-scale generic, versatile numerical models to tackle a variety of complex problems in Ocean Engineering. Notable among them are models for predicting the stochastic vibration and fatigue of offshore structures, nonlinear analysis of a variety of floating systems especially for deep water applications, and hydrodynamic analysis of large volume floating structures.

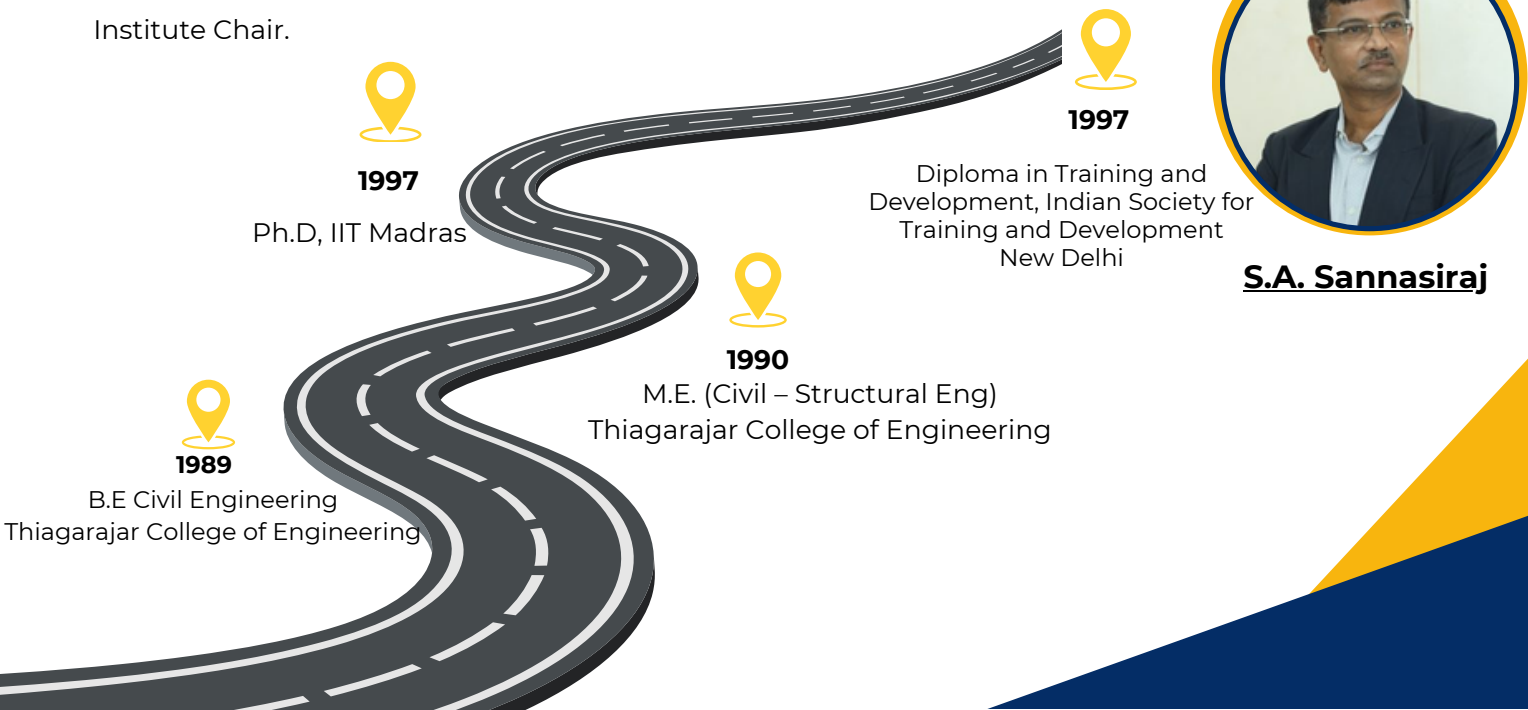
Prof. Vendhan has collaborated with agencies such as NIOT, ISRO and DRDO on many R&D projects in strategic areas. He has introduced advanced analysis tools as an alternative to empirical methods in many of the projects. He has had long term collaboration with ISRO primarily for developing numerical models for liquid sloshing, and recently for a study of water impacting capsules.

Prof. Vendhan has attended a few international conferences organised by the American Society of Mechanical Engineers and the Acoustical Society of America, apart from a few organised by the Acoustical Society of India. He has published over 80 research papers in refereed journals and conferences.

He is part of a team of three, which has been conferred the Academy Excellence Award in 2011 by the DRDO, in recognition of the contributions made to the underwater missile programme. Two special issues, one the Journal of Engineering for the Maritime Environment (Vol. 227(3), 2013 - Sage) and the other, Ships and Offshore Structures (publication due in Dec. 2015 - Taylor & Francis) have been brought out to mark his retirement. In recognition of outstanding contributions to the Ocean Science & Technology, the Ministry of Earth Sciences honors Prof. C. P. Vendhan with National Award in Ocean Science and Technology for the year 2015.

### Introduction of the Chair Occupant:

Prof. S. A. Sannasiraj is the current chair occupant of the C.P. Vendhan Institute Chair.



**S.A. Sannasiraj**

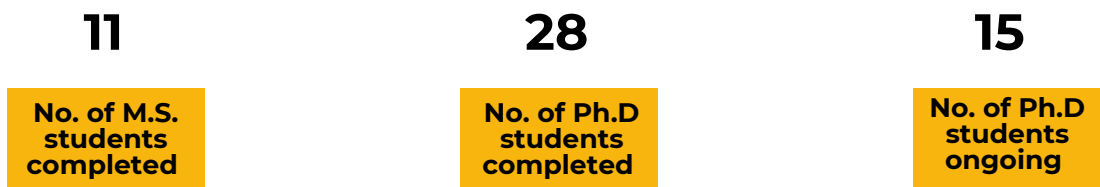
## Broad Area of Research



## Current Research

Designed coastal protection structures (seawalls and groyne field) along various coastal stretches of Tamilnadu and Kerala (more than 50 stretches covering about 100km) and these were constructed over the period of last two decades. Further, prepared Feasibility and Detailed Project Reports for several ports and harbours within the country and abroad. An artificial submerged reef system has been conceptualized and design for the protection of Vaan island in the region of ecologically sensitive Gulf of Mannar and has been successfully deployed by Dept. of Environment, Tamilnadu. The wind-wave prediction for various port and coastal projects for operational and extreme value estimates is worth notable as one of his individual contribution.

## Students contributions (who were involved in Research)



## Honours & Awards

- 1998-2000** ● Post-Doctoral fellowship from National Science and Technology Board, Singapore
- 2005-'06** ● Indian Maritime Award for the work on 'Prediction of Tsunami wave using Data Buoys' co-awarded with Mr R. Balaji and Prof. V. Sundar
- 2006** ● DAAD fellowship to visit University of Kiel, Germany during May, 2006.
- 2006** ● Best Paper Award for the paper 'Simulation of nonlinear free surface waves'. at 15th congress of APD-IAHR. The paper is co-authored with Mr V. Sriram and Prof. V. Sundar
- 2007** ● Endeavour India Executive Award sponsored by Department of Education, Science and Training, Australian Government to visit Griffith University, Australia.
- 2007** ● Best paper in CFD award, IITMadras for the paper on Simulation of 2D nonlinear waves using Finite Element Method with Cubic Spline Approximation.
- 2011** ● Fulbright-Nehru Senior Research Fellowship by USIEF, United States-India Education Foundation. Visited Oregon State University from Jan.-Jun.

- 2012 ● Best paper Award for the paper at PIANC-COPEDEC 2012. The paper is co-authored with Mr. Swapnadip De Chowdhury.
- 2015 ● The Institution Prize by Indian Engineering Congress for the technical paper 'A load cell for the measurement of slack mooring forces' coauthored with R.Balaji & V.Sundar.
- 2019 ● 2nd Best Poster Award for the paper entitled 'PTO Damping of Point Absorber Wave Energy Converter' co-authored with Suman Kumar (OE18S002) and Abdus Samad, at the ASME 2019 Gas Turbine India Conference, Madras, Dec 5-6, 2019.
- 2020 ● Melbourne School of Engineering Visiting Fellow
- 2023 ● Sustainability champion award for Outreach activities in Sustainability, 26 Oct. 2023.
- 2023 ● Journal Reviewer Award 2023, Indian Society of Hydraulics

## Affiliations

- **Chairman**, IEEE-OES Madras chapter, 2021 to 2023.
- **Vice Chair**, Executive Committee, Asia Pacific Division of IAHR, since 2023
- **Area Coordinator** for Water Management of the Indo-German Centre for Sustainability (IGCS), since Mar. 2020 onwards (<http://www.igcs-chennai.rwth-aachen.de/>)
- **Founding Director**, M/s. Samudra Consultants Pvt. Ltd., An incubate company from IIT Madras, IITMadras Research park, Chennai.
- **Principal Coordinator**, ABCD Centre, DAAD Global climate centre main hub at Chennai, 2021-'25.
- **Principal Coordinator**, DST Centre of Excellence for Climate Change Impacts on Coastal Infrastructure and the Adaptation strategies at IIT Madras, 2018-2024
- **Co-Principal Coordinator**, National Technological Centre for Ports, Waterways and Coasts, since 2018.

## Plans ahead

Taking efforts to create the centre of excellence in the following fields

- Technical textiles
- Coastal water and Coastal protection

## Thank you note from the occupant

“

*I am honoured to have the name of one of my respected teacher Prof.C.P. Vendhan with whom I have been associating since 1992. I always respect his vast contribution to the numerical modelling of hydrodynamics including nonlinear wave structure interaction problems.*

”

## Prof. C. Ganapathy Institute Chair

We are in the process of identifying the occupant of the chair.



We are grateful to you and your family!

## Prof. Nallayarasu S



We express our heartfelt gratitude for your continued and generous support to IIT Madras throughout the years. We trust that you take great pride in your bond with IIT Madras and the unwavering dedication it has demonstrated towards academic and research excellence since the time of your association.

Your invaluable contributions, alongside the support of your family, have played a pivotal role in facilitating this remarkable growth. We are privileged to have you and your family walking with us along this journey. We extend our best wishes to you and your family. We thank you for your continued support to your alma mater



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