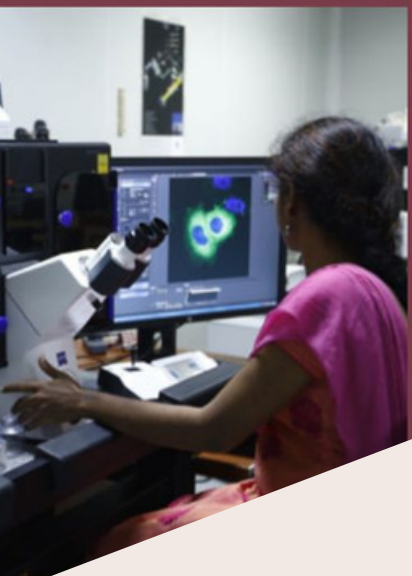




Indian Institute of Technology  
Madras  
Office of Alumni and Corporate  
Relations



# MASTER INSTITUTE CHAIR PROFESSORSHIP REPORT

**FY 2023 - 2024**

# DIRECTOR'S MESSAGE



## Prof. Kamakoti Veezhinathan

Director, IITM

Greetings!

IIT Madras continues to retain her top position for the eighth 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!

# DEAN'S MESSAGE

Prof. Mahesh Panchagnula  
Dean, Alumni & Corporate Relations, IITM



Greetings from the Office of Alumni and Corporate Relations!

Please accept my sincere appreciation for the unwavering support you continue to provide to IIT Madras. Your generosity is the cornerstone of our success, and we are truly grateful for your commitment to the causes that are important to the students and faculty of IIT Madras. This report is a testament to the profound impact your contributions have had –by transforming the lives of students, supporting research, augmenting Institute infrastructure, enhancing learning or through supporting other myriad causes. Your trust in us propels our ambitions, and we are committed to ensuring that your donations are utilized to their fullest potential.

In a world evolving rapidly in science and technology, we have set ambitious goals for ourselves. Your enduring enthusiasm and support provide fillip to our efforts. IIT Madras stands as a beacon of diversity, sustainability, innovation and research excellence. While we have transformed over the years, our commitment to being a premier institute in the country and abroad, remains steadfast, attracting the brightest minds from across the globe. I cordially invite you to visit the campus, witness first-hand the salutary impact of your contributions, and observe the Institute's growth and evolution over the years.

Your generous gifts have made an incredible difference in our Institute's aspirations – *Thank you!* Your continued partnership is invaluable as we navigate the exciting journey ahead, shaping the future of India and the world together.

# TABLE OF CONTENTS

	Page no.		Page no.
<b><u>P.K. Aravindan Institute Chair</u></b>		<b><u>Deepak S Parekh Institute Chair</u></b>	
Chair Occupant: Prof. Meher Prasad A	6	Chair Occupant: Prof. T. Pradeep	33
<b><u>Sampath Institute Chair</u></b>		<b><u>YBG Varma Institute Chair</u></b>	
Chair Occupant: Prof. Sarathi R	8	Chair Occupant: Prof. Pushpavanam S	35
<b><u>E.G. Ramachandran Institute Chair</u></b>		<b><u>Marti Mannariah Gurunath Institute Chair</u></b>	
Chair Occupant: Prof. M Kamaraj	10	Chair Occupant: Prof. Raghunathan R	36
<b><u>Girija Vaidyanathan Institute Chair</u></b>		<b><u>Sterlite Technologies Institute Chair</u></b>	
Chair Occupant: Prof. Rama R	11	Chair Occupant: Prof. Rajagopalan A N	38
<b><u>V. V. Sastry Institute Chair</u></b>		<b><u>RAGS Family Foundation Institute Chair</u></b>	
Chair Occupant: Prof. Amitava Das Gupta	12	Chair Occupant: Prof. Rajendran C	40
<b><u>G. Aravamudan Institute Chair</u></b>		<b><u>R. Srinivasan Institute Chair</u></b>	
Chair Occupant: Prof. Baskaran S	14	Chair Occupant: Prof. Ramachandra Rao MS	42
<b><u>Zoho Institute Chair</u></b>		<b><u>M.A. Parameswaran Institute Chair</u></b>	
Chair Occupant: Prof. Bhaskar Ramamurthi	16	Chair Occupant: Prof. Ramesh A	44
<b><u>T.T. Narendran Institute Chair</u></b>		<b><u>K. Mahesh Institute Chair</u></b>	
Chair Occupant: Prof. Balaji .C	18	Chair Occupant: Prof. Ramesh .K	46
<b><u>Qualcomm Institute Chair</u></b>		<b><u>V. S. Raju Institute Chair</u></b>	
Chair Occupant: Prof. David Koilpillai	20	Chair Occupant: Prof. Ravindra Gettu	48
<b><u>Gopalakrishnan Institute Chair</u></b>		<b><u>M. S. Ananth Institute Chair</u></b>	
Chair Occupant: Prof. Krishna M Sivalingam	22	Chair Occupant: Prof. Shankar Narasimhan	50
<b><u>Class of 1981 Institute Chair</u></b>		<b><u>Richard Karp Institute Chair</u></b>	
Chair Occupant: Prof. Krishnan Balasubramanian	24	Chair Occupant: Prof. Siva Ram Murthy C	51
<b><u>S. R. Rajagopalan Institute Chair</u></b>		<b><u>D. Srinivasan Institute Chair</u></b>	
Chair Occupant: Prof. Mishra A K	26	Chair Occupant: Prof. Sujith R.I	53
<b><u>Class of 1984 Institute Chair</u></b>		<b><u>V. Balakrishnan Institute Chair</u></b>	
Chair Occupant: Prof. Muraleedharan .V.R	28	Chair Occupant: Prof. Saritkumar Das	55
<b><u>P. S. Rao Institute Chair</u></b>		<b><u>Venkataraman and Sita Srinivasan Chair Professor</u></b>	
Chair Occupant: Prof. C V R Murty	29	Chair Occupant: Prof. Venkatarathnam G	57
<b><u>Alumni Community Institute Chair</u></b>		<b><u>N.T. Alexander Chair Professor</u></b>	
Chair Occupant: Prof. Nagarajan R	31	Chair Occupant: Prof. Shanthi Pavan	58
		<b><u>Nita and KG Ganapathi Institute Chair</u></b>	
		Chair Occupant: Prof. Ligy Philip	59

<b><u>P.C. Varghese Institute Chair</u></b>	
Chair Occupant: Prof. Devdas Menon	61
<b><u>Girija and R Muralidharan Institute Chair</u></b>	
Chair Occupant: Prof. B. S. Murty	63
<b><u>Surendra and Dorothe Shah Institute Chair</u></b>	
Chair Occupant: Prof. K. Ramamurthy	64
<b><u>K. K. Balasubramanian Institute Chair</u></b>	
Chair Occupant: Prof. S. Sankararaman	66
<b><u>V. Balaraman Institute Chair</u></b>	
Chair Occupant: Prof. N. Ramesh Babu	67
<b><u>Prof. C. Ganapathy Institute Chair</u></b>	
Chair Occupant: Vacant	69
<b><u>Ace Micromatic Institute Chair</u></b>	
Chair Occupant: Vacant	69
<b><u>C. P. Vendhan Institute Chair</u></b>	
Chair Occupant: Vacant	69
<b><u>Kripalu Chair for Transformational Leadership</u></b>	
Chair Occupant: Vacant	69
<b><u>Founding Professors Institute Chair</u></b>	
Chair Occupant: Threshold not met	69
<b><u>P. T. Manoharan Institute Chair</u></b>	
Chair Occupant: Threshold not met	69
<b><u>V. Radhakrishnan Institute Chair</u></b>	
Chair Occupant: Threshold not met	69
<b><u>M. A. Veluswami Institute Chair</u></b>	
Chair Occupant: Threshold not met	69
<b><u>V. Mahadevan Institute Chair</u></b>	
Chair Occupant: Threshold not met	69
<b><u>K.A. Padmanabhan Institute Chair</u></b>	
Chair Occupant: Threshold not met	69
<b><u>Perry L Blackshear Institute Chair</u></b>	
Chair Occupant: Yet to be identified	69

# INTRODUCTION

The appointment to an endowed chair, also known as a professorship, is a prestigious recognition bestowed upon distinguished professors who have achieved remarkable excellence in research, technology development, teaching, and service within their academic institution, nation, and profession. At IIT Madras, the appointment to an endowed chair signifies the exceptional contributions made by faculty members in advancing knowledge and pedagogy.

Endowed chairs carry a significant level of prestige and serve as a testament to the expertise and leadership of the appointed professors. They attract exceptionally talented students and researchers to the institution, ensuring a bright future for the academic community. The endowment associated with these chairs provides various benefits such as competitive salaries, honoraria, accommodation, and additional resources to facilitate visits and engagement with other scholars. Beyond the achievements that have earned them their professorship, those appointed to endowed chairs must have demonstrated outstanding leadership in their respective fields.

The establishment of endowed chairs is not unique to IIT Madras, as many exceptional educational institutions worldwide recognize the importance of these positions. By honouring esteemed professors with endowed chairs, these institutions enhance their reputation, foster an environment conducive to groundbreaking research, and attract exceptional talent.

In essence, endowed chairs represent an integral and indispensable element of IIT Madras and numerous exceptional educational institutions, serving as a testament to their excellence, capacity for innovation, and commitment to shaping the future of education and research.

# P K ARAVINDAN INSTITUTE CHAIR



**Prof. P.K. Aravindan**

## Introduction:

The Prof. P.K. Aravindan Institute Chair has been established to honor the late Prof. P.K. Aravindan, an outstanding teacher who was very popular among his colleagues. He has inspired generations of students and research scholars, teaching various courses at both undergraduate and postgraduate levels.

The Department of Civil Engineering created a Chair Professorship in the name of Prof. P.K. Aravindan, as an expression of gratitude to a great teacher who actively contributed to the development of the Department of Civil Engineering and IIT Madras in its formative years, and to honour his significant contributions to structural engineering practice in India.

## Academic Background:

- » Bachelor of Technology in Civil Engineering (1982), The Indian Institute of Technology Madras
- » Ph.D. Civil Engineering (1989), Rice University, Houston, Texas, US

## Research Interests:

- » Structural Dynamics
- » Earthquake Engineering
- » Structural Stability
- » Structural Analysis
- » Finite Element Analysis
- » Dynamic Analysis
- » Nonlinear Analysis
- » Finite Element Modeling
- » Stress Analysis

Prof. Meher Prasad has over 32 years of research experience in structural dynamics and earthquake engineering. His Ph.D. work was in the area of dynamic soil-structure interaction. His recent work is related to the computational modelling of reinforced concrete buildings and bridges subjected to earthquakes. Specifically, the work concentrates on preparing seismic evaluation methodologies and obtaining the required computational tools to identify all the possible failure mechanisms of the available Indian building stock considering the prevailing construction practice.

## Chair Occupant



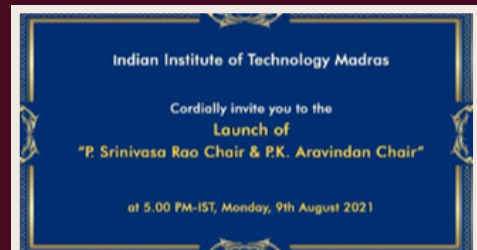
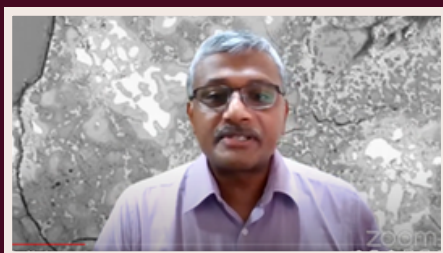
**Prof. Meher Prasad A**  
Department of Civil Engineering

His research group is currently working on developing fragility curves for the building typology available in India. His other research areas include Glass fiber-reinforced gypsum wall panel building systems, bridge health monitoring, structural reliability, and computational mechanics. He also worked on vulnerability models for buildings in cyclone-prone areas. His bridge-related research work includes the probabilistic modelling of highway bridges, congestion factors, instrumentation and monitoring of bridges; construction stage behaviour of cable-stayed bridges; time-dependent behaviour of bridges

### **Awards and Recognitions:**

- » **Author of over 120 papers**, a significant number of them in structural dynamics and earthquake engineering.
- » Recipient of the **1990 NORMAN Gold Medal** from the American Society of Civil Engineers (ASCE)
- » **Member** of Bureau of Indian Standards Committees on Seismic assessment and strengthening of buildings (CED39:9), Earthquake resistant design, and construction of prefabricated/precast structures. Tall buildings, Wind loads
- » **Member** IRC B-2 committee
- » **Institute coordinator** for the National Programme on Earthquake Engineering Education (NPEEE) and member of its Programme Implementation Committee.
- » **Institute coordinator** for National Programme for Capacity Building of Engineers in Earthquake Risk Management (NPCBEERM), sponsored by the Ministry of Home Affairs, Government of India.
- » **Member** of expert committee on the preparation of manual of retrofitting of buildings constituted by Indian Buildings Congress.
- » Reviewed papers for journals such as Earthquake Engineering & Structural Dynamics, ISET Journal of Earthquake Technology, Engineering Analysis and Design, Journal of Institution of Engineers (India), Current Science, etc
- » **Principal Coordinator** for Indo-Italian significant bilateral project with the University of Pavia, Italy on Seismic Vulnerability of Historic Centres in India
- » Conducted many short workshops and courses for practicing engineers and engineering college teachers.

### **Chair Launch Photos:**



# SAMPATH INSTITUTE CHAIR



**Prof. Srinivasa Sampath**

## Introduction:

Late Prof. Srinivasa Sampath (1925-1998) served as a professor at the Department of Electrical Engineering and Deputy Director at IIT Madras. He was instrumental in the academic development and growth of IIT Madras. In 1981, Prof. Sampath became the Director of IIT Kanpur and brought instrumental changes in the field of computer sciences.

He was an excellent teacher and a role model to his students. He was a gifted speaker of exceptional caliber in the areas of education, technology, and spirituality. Mr. Mallik Putcha was the initiator and major contributor to this Institute Chair and various other alumni have supported this chair.

## Academic Background:

- » Ph.D. (1995) from the Indian Institute of Science, Bangalore

## Research Interests:

- » Development of cryogenic insulation material.
- » Condition Monitoring of power apparatus using Multi sensor fusion technique.
- » Understanding the influence of space charge on breakdown process in nanocomposites and elastomers adopting PEA technique.
- » Development of nano composite insulating materials for outdoor applications
- » Fault diagnosis in transformers using Acoustic emission and UHF Sensors.
- » Application of Wavelet Technique to Condition Monitoring of Outdoor insulating structures.
- » Fractal Modeling and Simulation of Treeing in electrical Insulation.
- » Generation of Nano particles by pulsed power technique.
- » Sterilization of liquid foods using pulsed power technique

## Chair Occupant



**Prof. R. Sarathi**  
Department of Electrical  
Engineering



Prof. R. Sarathi has over 25 years of experience in research and education and has published more than 269 papers in peer-reviewed reputed international journals. He has guided 33 Ph.D. Scholars and around 16 M.S (by Research).. He has been instrumental in conceptualizing and developing the state-of-the-art High Voltage Laboratory at IIT Madras. He is currently associated with UKIERI project, an international collaboration initiative on Innovation in high voltage insulation for electrical energy networks. He is a Member, Indian Standards on High voltage testing techniques, CBIP distribution system, International Reference Group for SweGRIDS, Sweden and a collaborative member of the green Asia project of Kyushu University funded by Japanese government. He is Vice Chair of IEEE DEIS Outdoor Insulation Technical Committee/New Task Forces.

### ***Awards and Recognition:***

- » **Fellow of Institution of Engineers**, India, 2013
- » **IEEE PES Madras Section Outstanding Engineer Award**, USA, 2014
- » **Fellow** of Indian National Academy of Engineering, New Delhi, 2016
- » **Fellow** of Royal Society of Chemistry, United Kingdom, 2017
- » **Fellow** of Institution of Engineering and Technology, United Kingdom, 2017
- » **Fellow**, The Chennai Academy of Sciences, Chennai, 2023

# E. G. RAMACHANDRAN INSTITUTE CHAIR



## Introduction:

Generous contributions were received from several alumni for the E. G. Ramachandran Institute Chair Professorship. Prof. E. G. Ramachandran was one of the first Professors and Head of the Department of Metallurgical Engineering. A great teacher and scientist, he has mentored several generations of metallurgists.

**Prof. E G. Ramachandran**

## Academic Background:

- » Master of Science in Materials Science (1984), PSG Tech
- » Master of Technology in Metallurgical Eng (1986), KREC
- » Ph.D. in Metallurgical Engineering from the Indian Institute of Technology Madras

## Research Interests:

- » High-temperature deformation of behavior of advanced materials
- » Wear behavior of coatings, and Inter-metallic reinforced PM based composites
- » Fretting Fatigue behavior of Bio-medical implant materials

Prof. M. Kamaraj has over 15 years of research and academic experience and has also published more than 100 papers in various international journals. He is a member in professional bodies like the Indian Institute of Metals, Indian Welding Society, Indian Institute of Welding, & ISNT, and the ASM International Chennai chapter. Prof. M. Kamaraj has published a total of 2 books on Surface Technology and Surface Modified Biomedical Titanium Alloys. He also obtained one patent for the Processing of high entropy alloys with exceptionally good high temperature oxidation properties. His research activities include the following

- Creep deformation and fracture mechanisms of Thermal sprayed coatings and Modified 9Cr-1Mo Steels with and without welded joints
- Development of Wearsurfacing materials; Tribological tests on weld deposits (Plasma Transferred Arc, Plasma Spray, HVOF processes etc.)
- Studies of the relationships between processing, microstructure, deformation and fracture processes in advanced materials
- Fretting fatigue of structural materials and Bio-implant materials
- Development of Marine propeller materials

## Awards and Recognition:

- » **Sudarshan Bhat Memorial prize** for the best Ph.D. thesis in the department of Metallurgical Engineering, IITM (1990)
- » **STA Post-Doctoral Fellowship:** National Institute of Industrial Safety, Tokyo

## Chair Occupant



**Prof. M. Kamaraj**

**Department of Metallurgical and  
Materials Engineering**

# GIRIJA VAIDYANATHAN INSTITUTE CHAIR



**Dr. Girija Vaidyanathan**

## Introduction:

The Girija Vaidyanathan Institute Chair is funded by Acsys Investments Private Limited. Dr. Girija Vaidyanathan is an Indian Administrative Service officer of the Tamil Nadu cadre who served as the Chief Secretary to the Government of Tamil Nadu from 2016 to 2019. She has an exemplary academic record, having stood first among all women candidates and ninth among nearly one lakh aspirants in the All India Indian Administrative Services (IAS) examination conducted during the year 1981. She graduated top of her class in the Master's programme in Physics from IIT Madras in 1981. She obtained her Ph.D. in Health Policy from the Department of Humanities and Social Sciences, IIT Madras in 2011.

## Academic Background:

- » B.Sc. (1981) from the University of Madras
- » M.Sc. (1983) from Madras Christian College
- » Ph.D. (1989) from Anna University

## Research Interests:

- » Theoretical Computer Science
- » Automata Theory

Prof. Rama R has 25 years of teaching and research experience and has published more than 40 papers in various international journals. Her broad area of research is Theoretical Computer Science and has been mainly working in "Automata Theory" in which she has published around 75 papers in reputed journals, and conferences. She has edited 5 volumes in her topic of research. She has also collaborated with Indian researchers as well foreign researchers.

## Chair Occupant



**Prof. Rama R**  
Department of Mathematics

# V. V. SASTRY INSTITUTE CHAIR



**Prof. V. V. Sastry**

## Introduction:

The V. V. Sastry Institute Chair is funded by Mr. Yashpal Singh Sodhi and Mrs. Sodhi in honour of Prof. V.V. Sastry from the department of Electrical Engineering. Prof. V. V. Sastry was associated with Indian Institute of Technology since 1968 for 3- decades during which he had been a Professor of Electrical Engineering between 1980 and 1998. He won various national awards such as Inventions awards of NRDC and VASVIK award and had the international recognition as a Humboldt Scholar from German Government.

## Academic Background:

- » Bachelor of Engineering in Electronics and Telecommunication Engineering (1982) from Jadavpur University
- » Master of Technology in Electrical Engineering (1984) from the Indian Institute of Technology Madras
- » Ph.D. (1988) from the Indian Institute of Technology Kharagpur

## Research Interests:

- » Semiconductor Device Modeling and Technology
- » Micro-Electro-Mechanical Systems

Prof. Amitava Das Gupta has over 30 years of academic experience. He has more than 150 research publications in International Journals and Proceedings of International Conferences and has Co-authored a book on Semiconductor Devices – Modeling & Technology. He is an Editor of the IETE Technical Review and ISSS Journal of Micro and Smart Systems. He is a Fellow of the Indian National Academy of Engineering (INAE). His current research is on Compact models for GaN HEMTs, GaN based technology for RF Power amplifiers and DC-DC converters, Single Pole Double Throw (SPDT) RF MEMS switches operating in Ku band (12 – 18 GHz) (ISRO), MEMS based piezo thin film energy harvesters (DRDO), and RF MEMS based nano resonators for RF oscillators (Ministry of Electronics and Information Technology).

## Chair Occupant



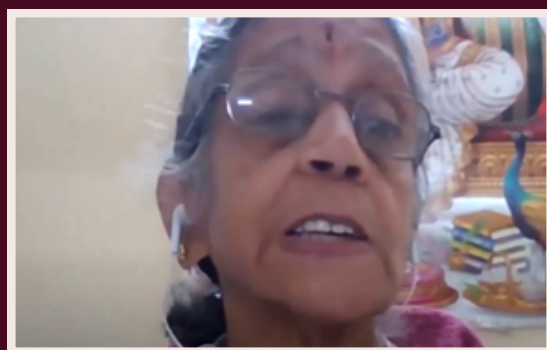
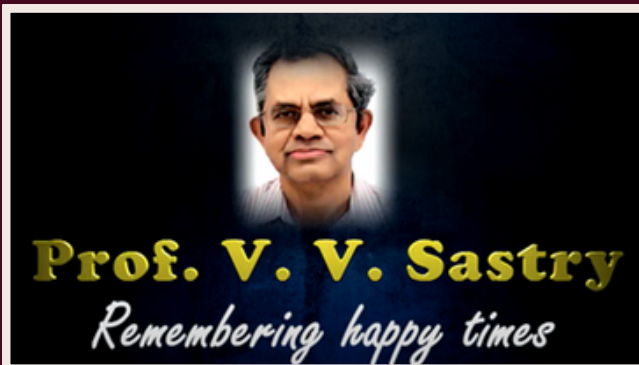
**Prof. Amitava DasGupta**

**Department of Electrical  
Engineering**

### **Awards and Recognition:**

- » **DAAD Fellow** by DAAD, Germany, 1991
- » **Best Poster Award by IEEE India** ED/MTT Chapter, for Poster entitled on “Improvement in Breakdown field strength of thin thermally grown SiO<sub>2</sub> by selective anodic oxidation” at 11th International Workshop on Physics of Semiconductor Devices, New Delhi, 2001
- » **Best Poster Award** at International Conference on Materials for Advanced Technologies (ICMAT-2009), Singapore for a Poster entitled on “Fabrication of reliable MEMS switches in CPW configuration”, 2009
- » **Best Poster/paper Award at Fifteenth International Workshop** on Physics of Semiconductor Devices for Poster entitled on “RF MEMS Switches with Low Pull-in Voltage“ at 15th International Workshop on
- » Physics of Semiconductor Devices, New Delhi, 2009
- » **INAE Fellow** by Indian National Academy of Engineering, 2011
- » **Member**, Institute of Electrical and Electronics Engineers

### **Chair Launch Photos:**



# G. ARAVAMUDAN INSTITUTE CHAIR

## Introduction:

G. Aravamudan Institute Chair was instituted in 2018 by the thoughtful contribution of Shri Venu Aravamudan and it was named after his father Dr. G. Aravamudan, Retired Distinguished Professor, Department of Chemistry IIT Madras. Prof. G Aravamudan is a stalwart of the Chemistry Department. He is a distinguished teacher, researcher, and a leading academic figure who served in the Department of Chemistry and helped to establish The Material Science Research Centre at IIT Madras from 1960 through 1994. He has authored well over 100 papers across leading international journals, taught and advised scores of graduate Ph. D.s as well as Undergraduate students. Prof. G Aravamudan will always remain an integral part of IIT Madras.

**Dr. G. Aravamudan**

## Academic Background:

- » Bachelor of Science (1982) from Vivekananda College, University of Madras
- » Master of Science (1984) from Vivekananda College, University of Madras
- » Ph.D. (1990) from The Indian Institute of Technology Kanpur

## Research Interests:

- » Development of New Strategies in Organic Synthesis
- » Enantioselective Synthesis
- » Deep Eutectic Mixture as Novel and Green Reaction Medium
- » Synthesis of Biologically Active Molecules/ Natural Products & Drug Design of Pharmaceutical Importance

Prior to joining IIT Madras in 1998, Prof. S Baskaran briefly held a scientist position at the Dr. Reddy's Research Foundation, Hyderabad. His research interests are mainly focused on the development of new strategies in organic synthesis, asymmetric synthesis, and stereoselective synthesis of biologically active and pharmaceutically important molecules. He is a recipient of AvH fellowship, Germany, and CRSI bronze medal. He is an elected Fellow of the Indian Academy of Sciences. He serves as an Associate Editor of the Journal of Chemical Sciences (India).

## Chair Occupant



**Prof. Baskaran S.**  
Department of Chemistry

## ***Awards and Recognition:***

- » **Alexander von Humboldt Fellowship**, Germany, 1991
- » **Chemical Research Society of India (CRSI)-Medal**, 2008
- » **National Representative**, IUPAC, 2010-15
- » **Member**, DST-Fast Track-Young Scientist Scheme, 2013-15
- » **Fellow** of the Indian Academy of Sciences (FASc), 2013
- » **Council Member**, National Organic Symposium Trust, 2015-18
- » **Co-opted Member**, Program Advisory Committee (Organic), SERB, 2015-18
- » **Associate Editor**, J. Chemical Sciences, 2015
- » **Institute Chair Professor**, 2018
- » **Prof. G. Aravamudan Chair Professorship**, 2019
- » **Fellow** of the Indian National Science Academy (FNA), 2020
- » **Present Convener**, Chennai Chapter, Indian National Science Academy, 2021
- » **Member**, Monitoring Committee for CSIR Mission Mode projects, 2022-25

## ***Chair Launch Photos:***



# ZOHO INSTITUTE CHAIR



Zoho Corporation

## Introduction:

Mr. Sridhar Vembu CEO of Zoho Corp. the company behind the Zoho suite of online applications generously contributed towards Zoho Institute Chair. Sridhar Vembu is the Founder and CEO of Zoho Corporation reached more than 50 million customers in January 2020. In July 2022, the company announced it had more than 80 million users.

## Academic Background:

- » B.Tech in Electronics Engineering (1980) from the Indian Institute of Technology Madras
- » MS (1982) and Ph.D. (1985) in Electrical Engineering from the University of California, Santa Barbara

## Research Interests:

- » Modulation and coding for mobile communications
- » Wireless communication networks and design
- » Implementation of wireless local loop systems

Prof. Bhaskar Ramamurthi has over 35 years of academic experience and has served as the Dean of Planning at IIT Madras before taking over the role of director in September 2011. He is the principal architect of the corDECT wireless local loop system and Broadband corDECT Wireless DSL System, widely deployed in India and 15 countries. His current research is on Research impact (in general) IEEE recognition as a Fellow for “**contributions to Wireless Technology in India**”. He is focused on indigenous 5G and 6G wireless technology development and IPR generation in India.

## Chair Occupant



**Prof. Bhaskar Ramamurthi**

**Department of Electrical  
Engineering**



## ***Awards and Recognition:***

- » **Fellow of the Indian National Academy of Engineering**, from 2000
- » **Honorary Director** of the Centre of Excellence in Wireless Technology
- » **Honorary Fellow** of the International Medical Sciences Academy
- » **Vasvik Award** for Electronic Sciences and Technology, 2000
- » **Tamil Nadu Scientist Award for Engineering and Technology**, 2003
- » **India Semiconductor Association Techno-visionary Award**, 2011
- » **Doyens of Madras Award**, 2014
- » **IEEE Fellow**, from 1 January 2015
- » **RWTH Honorary Fellow Award** from RWTH Aachen University, Aachen, Germany, February 2020

## ***Chair Launch Photos:***



# T. T. NARENDRAN INSTITUTE CHAIR



**Prof. T. T. Narendran**

## Introduction:

T.T.Narendran most popularly known as MAMA endeared well to student's community across generations. Our eminent Professor joined IIT Madras in 1971 and obtained his PhD in Industrial Engineering. He then joined the services of the Institute in 1976 as a Lecturer. Later, he was an Associate Professor and a Professor in 1991 and 1995 respectively. During his career, he has guided many research scholars published more than a hundred research articles in reputed Journals and prestigious conferences. His papers have been cited by the most prolific authors in these disciplines and he was among their top 10 contributor's worldwide over a decade.

Professor T.T.Narendran has proved himself an exemplary teacher who has enthusiastically offered courses outside his academic moorings and his humour that characterized him, the power of bringing smile in every student. His name will always be associated with the courses on Operations Research, Simulation and Production Management.

## Academic Background:

- » Under Graduation in Mechanical Engineering (1990) from the College of Engineering, Guindy
- » M.Tech (1992) and Ph.D. (1995) both from IIT Madras in the area of Heat Transfer and Thermal Sciences.

## Research Interests:

- » Computational Heat transfer
- » Computational Radiation
- » Optimization in Thermal Sciences
- » Inverse Heat Transfer
- » Satellite Meteorology
- » Numerical Weather Prediction

Prof. C. Balaji has over 28 years of research and teaching experience. He has authored more than 220 journal publications. He is also the author of four books, which include 2 graduate level textbooks on thermal system design and optimization and radiation heat transfer.

Prof. C. Balaji's research has been in 3 domains namely: Heat Transfer and Optimization in electronic cooling, Inverse problems in Heat Transfer and Numerical Weather Prediction and Radiance Assimilation in the field of electronic cooling.

## Chair Occupant



**Prof. C. Balaji**  
Department of Mechanical  
Engineering

Prof. C. Balaji and his research group have demonstrated the importance of multi-objective optimization in the design of heat sinks with phase change materials using a numerical and experimental data driven approach. In the domain of inverse heat transfer, Prof. C. Balaji has introduced Bayesian methods in the heat transfer field and intuitive ways of generating priors to solve ill-posed inverse problems. His research group has demonstrated this approach in a wide range of problems from heat transfer to atmospheric science. They have developed new algorithms for ingesting microwave radiances from Indian satellites to improve the prediction of the Indian monsoon and tropical cyclones in the Bay of Bengal.

### ***Awards and Recognition:***

- » **Humboldt Fellowship, Humboldt Foundation Germany, 2005 -2006**
- » **Young Faculty Recognition Award for Excellence in Teaching and Research, IIT Madras, 2007.**
- » **Prof. K.N. Seetharamu Medal and Prize for excellence in research, Indian Society for Heat and Mass Transfer, 2008.**
- » **Swarna Jayanthi Fellowship, Govt of India, (Earth and atmospheric science), 2008.**
- » **Tamil Nadu Scientist Award, Govt of Tamil Nadu, 2010.**
- » **Elected Fellow, Indian National Academy of Engineering, 2012.**
- » **Humboldt Fellowship- Renewed Research stay for experienced researchers, Germany, 2012.**
- » **Marti Gurunath Award for Excellence in Teaching, awarded by IIT Madras, 2013.**
- » **Mid-Career Research Award, awarded by IIT Madras, 2015.**
- » **Institute Chair Professor, 2020.**

### ***Chair Launch Photos:***



# QUALCOMM INSTITUTE CHAIR



## Introduction:

Qualcomm has established the Qualcomm Institute Chair at IIT Madras for Education and Research in Electrical Engineering with special reference to Wireless Communications Technology. Qualcomm is an American multinational corporation established in 1985, and headquartered in California. It creates semiconductors, software, and services related to wireless technology. Qualcomm is dedicated to supporting education, the arts, and health and human services and grateful to help further the goals of the IIT Madras.

## Academic Background:

- » B.Tech in Electrical Engineering from the Indian Institute of Technology Madras
- » MS in Electrical Engineering from the California Institute of Technology, Pasadena
- » Ph.D. in Electrical Engineering from the California Institute of Technology, Pasadena

## Research Interests:

- » Quadrature amplitude modulation
- » OFDM modulation, error statistics
- » Optical fibre communication
- » Wireless channels
- » Quadrature phase shift keying
- » Underwater acoustic communication
- » Optical fibre dispersion
- » 5G mobile communication
- » CMOS integrated circuits
- » Chirp modulation
- » AWGN channels

## Chair Occupant

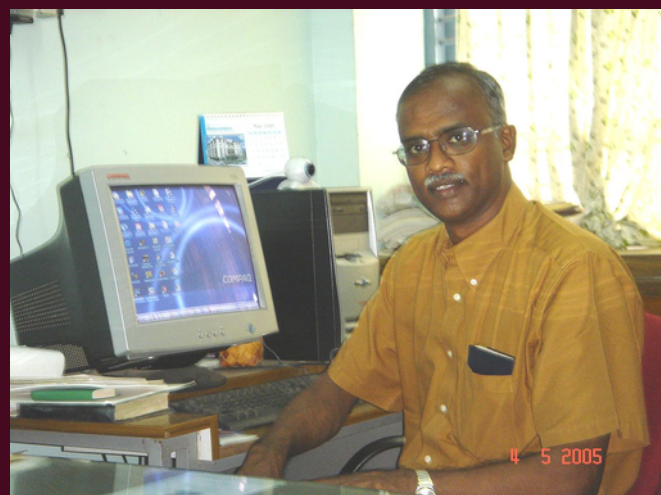


**Prof. David Koilpillai**  
Department of Electrical  
Engineering

Prof R. David Koilpillai (Member, IEEE) is currently the Head of the Department and the Qualcomm Institute Chair Professor of Electrical Engineering with the IIT Madras, Chennai. Prior to joining IITM, he was with General Electric Corporate Research and Development for four years, and Ericsson, USA, for eight years, where he held different technical and managerial positions. In 2000, he became the Director of the Ericsson's Advanced Technologies and Research Department, RTP, NC, USA, where he developed GPRS/EDGE handset technology. His technical contributions at GE and Ericsson have resulted in 32 U.S. patents, 10 Canadian Patents, and 19 WIPO/European patents. His current technical activities are in the areas of cellular evolution—4G and 5G, smart grid communications, and DSP for high-speed coherent optical communications.

### ***Awards and Recognition:***

- » **IITM Alumni Association Award for Distinguished Service**, Aug 2017
- » **Received the Srimathi Marti Annapurna Gurunath Award for Excellence in Teaching (Best Teacher Award of IIT Madras)**, Apr 2014
- » **Elected Fellow of the Indian National Academy of Engineering**, Nov 2003
- » **“Ericsson Inventor of the Year” award, the highest technical recognition within Ericsson**, Nov 1999



# GOPALAKRISHNAN INSTITUTE CHAIR



**Mr. Kris Gopalakrishnan**

## Introduction:

Gopalakrishnan Chair was instituted by Mr. Kris Gopalakrishnan, the co-founder of Infosys global leader in next-generation digital services and consulting. Shri Senapathy 'Kris Gopalakrishnan' is a revered figure renowned as a global business and technology thought leader. Over the course of his illustrious career, he has made significant contributions to the field of technology and business. He was among the winners of the Asian Corporate Director Recognition Awards by Corporate Governance Asia. He served as the President of the Confederation of Indian Industry (CII) for the 2013-14 term and acted as one of the co-chairs at the World Economic Forum in Davos

## Academic Background:

- » B.E. in Computer Science and Engineering (1988) from the College of Engineering Guindy (CEG), Anna University
- » M.S. (1990) and Ph.D. (1994) in Computer Science from State University of New York (SUNY), Buffalo, New York

## Research Interests:

- » AI/ML Techniques for Networking Systems
- » Programmable Data Plane Networking, using NetFPGA / Tofino/ other hardware
- » Cellular (5G, 6G) Networks
- » Wireless (Wi-Fi) Networks

Prof. Krishna Moorthy Sivalingam has more than 25 years of academic experience and he holds four patents in computer networks and has published several research articles including more than eighty journal publications. He has published an edited book on Next Generation Network Technologies in 2011, on Wireless Sensor Networks in 2004 and on optical WDM networks in 2000 and 2004. He has served as the Editor-in-Chief for Springer Photonic Network Communications Journal and the EAI Endorsed Transactions on Future Internet. His current research includes 5G/6G networks and Programmable Data Plane Switches/Routers.

Below are the list of active research projects of Prof. Krishna Moorthy Sivalingam

- Oct. 2021 – Sep. 2024, “Federated Machine Learning for Network Elements using Programmable Data Plane Environments”, Ciena, USA
- April 2020 – April 2025, “Orchestration for Network Slicing in 5G Networks based on SDN/NFV Concepts”, VMWare University Research, USD

## Chair Occupant



**Prof. Krishna Moorthy Sivalingam**  
Department of Computer Science and  
Engineering

### ***Software Developed and Technology Transfer:***

His research group at IIT Madras was part of the team that developed the 5G Core software, installed in the India 5G Testbed (Jointly developed with CeWIT (IITM Research Park) and IIT Bombay)

The 5G Core software has been licensed to

- TCS
- Department of Telecommunications
- IITM Pravartak Technologies (Technology Innovation Hub)
- Military College Of Telecommunication Engineering (MCTE)

### ***Awards and Recognition:***

- » Distinguished Member at ACM
- » Fellow at IEEE(Institute of Electrical and Electronics Engineers)
- » Residential fellowship at University at Buffalo, New York

### ***Chair Launch Photos:***



# CLASS OF 1981 INSTITUTE CHAIR



## Introduction:

Class of 1981 Institute Chair was instituted by Mr. V. Shankar, founder of CAMS Pvt. Ltd and Acsys Investments Pvt Ltd.

## *Academic Background:*

- » Ph.D. (1989) from Drexel University, USA

## *Research Interests:*

- » Ultrasonics and acoustics
- » Structural health monitoring,
- » Micro and nano imaging,
- » Non-destructive evaluation,
- » Materials characterization and wave propagation

Prof. Krishnan Balasubramanian has been involved in the field of Non-destructive evaluation for more than twenty five years with applications in the fields of maintenance, quality assurance, manufacturing, and design. His research focus is on the field of Non-destructive Evaluation. He is currently the Principal Investigator in several sponsored research projects funded by DST, DAE, ADA, ISRO and DRDO organizations. He is an active member of ISNT, ASNT, SAMPE, ASME, UIA and ASA and has organized several international symposiums and workshops.

## Chair Occupant



**Prof. Krishnan Balasubramanian**  
Department of Mechanical Engineering



## ***Center for Nondestructive Evaluation (CNDE)- New horizons in nondestructive testing, asset integrity and structural monitoring:***

Established in 2000, the Centre for Nondestructive Evaluation (CNDE) at IIT Madras is designed to be a world leader in the field of non-invasive industrial inspection and diagnostics. Our goals are to provide enhanced education in the area of Nondestructive Evaluation (NDE), to perform basic scientific and/or industrially relevant research to develop innovative products and processes and to provide a focal point for information and technology transfer.

### ***Mission of CNDE:***

Deep research based nondestructive technologies for improved performance, enhanced safety, and increased life for industrial applications and relevant technologies for societal well-being.

### ***Nondestructive Evaluation applications:***

- 1.Raw materials qualification
- 2.Manufacturing quality assurance
- 3.Inservice inspection

### ***Awards and Recognition:***

- » Conferred with the **ROY SHARPE PRIZE** by the British Institute for NDT for the year 2012.
- » Awarded the **ISTEM Entrepreneurial Faculty Member Award** for his entrepreneurial activities by Auburn University, USA in 2011
- » **NATIONAL NDT AWARD** 2010 by the Indian Society for NDT
- » Awarded the **Gandhian Technology Innovation award** for 2018 for a project developing super-resolution imaging systems conferred by BIRAC-SRISTI.
- » Conferred with the prestigious **Abdul Kalam Technology Innovation Fellowship** and **IIT Madras Lifetime Achievement Award** in 2018.

# S. R. RAJAGOPALAN INSTITUTE CHAIR



**Dr. S.R. Rajagopalan**

## Introduction:

Dr. S.R. Rajagopalan received his PhD from IIT, Madras in the year 1970. He was a research scholar in the Chemistry Department of IIT Madras in the years 1964-67, working on the optical properties of electrodeposited films, which culminated in his thesis on this subject and earned him his Ph.D. degree. In 1953 he joined as a laboratory Assistant in CECRI ( a CSIR lab) and worked till he joined IIT, Madras in 1964, on various aspects of electro deposition. He published his findings in several International Journals. Based on his research records and publications, IIT Madras, admitted him for the Ph.D. program, waiving the requirement of an MSc degree, a rare honour. Mr. D. Chandrasekhar, 1970/BT/MT and Mr. Harinarayan Paramahamsan, 1997/BT/CE are the donors for this Institute Chair.

## Academic Background:

- » Bachelor of Science (1978) from Sambalpur University, Odisha
- » Master of Science (1980) from Delhi University
- » Ph.D. (1985) from Institute of Technology Kanpur
- » Post Doc (1987-1989), Monbusho Fellow from Gunma University, Japan

## Research Interests:

- » Basic photophysics of organic molecules in solution phase, with particular emphasis on photophysics of extended aromatic systems as well as excited state phototropism.
- » Extending the frontiers of analytical fluorimetry involving the integration of novel instrument designs, fluorescence data collection strategies and analytical methodologies.
- » Use of novel fluorescent molecular probes as well as novel probe applications of known fluorescent molecules in understanding soft matter systems like lipid bilayer membranes, niosomal membranes, hydrogels etc.

Prof. Ashok Kumar Mishra works in the general areas of Physical Photochemistry and Fluorescence Spectroscopy. After a stint in Sambalpur University as a faculty member, and in Gunma University (Japan) as a Monbusho fellow, he joined IIT Madras in 1992. Prof. Mishra became Associate Professor in 1996 and Professor in 2004. He was the Head of SAIF during 2004-07 and Dean Academic Research during 2015-21.

His area of research is **Photophysical Chemistry and Fluorescence Spectroscopy** and its subareas are the development of innovative photophysical concepts, instrumentation and fluorimetry applications, the development of novel fluorescent molecular probes as well as probe concepts, and their applications for the understanding of micro- and nano-scale heterogeneous systems like lipid bilayer membranes, hydrogels, dendrimers and aggregates and Understanding fundamental photophysics of various excited state intra- and inter-molecular processes.

## Chair Occupant



**Prof. Ashok Kumar Mishra**  
Department of Chemistry

In the fields of 'Physical Photochemistry' and 'Fluorescence Spectroscopy', Dr. Mishra has contributed significantly to research in a variety of areas such as:

- Development of innovative photophysical concepts, instrumentation and fluorimetry applications.
- Development of novel fluorescent molecular probes as well as probe concepts, and their applications for the understanding of micro- and nano-scale heterogeneous systems like lipid bilayer membranes, hydrogels, dendrimers and aggregates.
- Understanding of fundamental photophysics of various excited state intra- and inter-molecular processes.

### **Awards and Recognition:**

» **Fellow**, National Academy of Sciences India (FNASc) (Election Year 2004)

» **Vice-President**, Indian Photobiology Society (IPS) (2023-onwards)

» **Member of Academic Bodies:**

- BoG Member, NIT Puducherry (2015-till\_date); Member DST-SERB-PAC(IPC) (2018-210, Member DST-FIST Chemistry (2019-22)
- Member of Chemical Research Society of India (CRSI); Indian Photobiology Society (IPS); Indian Society for Radiation and Photo Sciences (ISRAPS); Orissa Chemical Society (OCS); Luminescence Society of India (LSI)

» **'Prof RC Tripathy Young Chemist Award'**, Orissa Chemical Society (1997)

» **CRSI Bronze Medal** by Chemical Research Society of India (2001)

» **Acharya PC Ray Memorial Award**, Indian Chemical Society (2012)

» **Prof W U Malik Memorial Award**, Indian Council of Chemists (2013)

» **KK Rohatgi Mukherjee Memorial Lecture Award**, Indian Photobiology Society (2017)

» **SR Mohanty Memorial Lecture Award**, Orissa Chemical Society (2021)

» **'Monbusho' Fellowship** by Govt. of Japan (1987-89)

» **JSPS Invitation Fellowship**, Japan (2002-03)

### **Chair Launch Photos:**



# CLASS OF 1984 INSTITUTE CHAIR



## Introduction:

Class of 1984 Institute Chair was instituted by the alumni of the 1984 batch.

## Academic Background:

- » M.A (Honours) Economics (1981) from Birla Institute of Technology and Science, Pilani, India
- » Ph.D. in Healthcare Economics (1988) the Indian Institute of Technology, Madras

## Research Interests:

- » Healthcare Economics
- » History of Healthcare in India
- » Technology and Health Policy

Prof. V R Muraleedharan has over 30 years of academic experience and has published 50+ papers in various international and national journals. He has also carried out research studies for the State Govt of Tamil Nadu, Chattisgarh, Govt. of India, Health and Family Welfare Dept., USAID (Delhi), DFID (UK), WHO (Delhi), Rockefeller Foundation (New York), and Wellcome Trust (UK). He is also the Professor in-charge for the Centre for Technology and Policy at IIT Madras.

## Awards and Recognition:

- » Member, Working Group on “Vaccine Cost-Effectiveness Analysis” of the National Technical Advisory Group on Immunization in India
- » Engaged with the National Health Mission, TN state, in concurrent assessment of implementation of Universal Health Care in Tamil Nadu.
- » Member, Technical Advisory Group, Health Technology Assessment in India (HTAI), Department of Health Research (Govt of India)
- » Coordinator, Operational Research Programme, Tamil Nadu Health Sector Reform Programme (TNHSRP) Served as a Member of the Mission Steering Group of the National Rural Health Mission (Govt. of India).
- » This is the highest decision-making body (equivalent to Cabinet Committee) governing the implementation of NRHM.
- » Served as a Member of Ethics Committee of National Institute for Research in Tuberculosis (Chennai). Served as a Member of the UGC Expert Committee on Leadership Development Programme (Gol).

## Chair Occupant



**Prof. V. R. Muraleedharan**  
Department of Humanities and  
Social Sciences

# P. S. RAO INSTITUTE CHAIR



**Prof. P. S. Rao**

## Introduction:

Professor Pulugurta Srinivasa Rao, (fondly known to his colleagues and students as Professor P. S. Rao) joined the Civil Engineering Department of IIT Madras in 1965 and was instrumental in commissioning the Structural Engineering Laboratory. He was awarded the prestigious Alexander Von Humboldt Fellowship twice. With his penchant for deep fundamental understanding, he guided 19 Ph.D. theses and published over 100 technical papers. His research and consultancy works included applications to the design of PSC railway sleepers, RC television towers, RC chimneys, natural draft RC cooling towers, RC raft slabs, RC pile-rafts, RC shells and RC folded plates, stadia, and port & harbour structures.

The Department of Civil Engineering proposed to create a Chair Professorship in the name of Prof. P.S. Rao, as an expression of our gratitude to a great teacher who actively contributed to the development of Department of Civil Engineering and IIT Madras in its formative years, and to honour his significant contributions to the Civil Engineering Profession.

## Academic Background:

- » B.Tech in Civil Engineering (1984) from the Indian Institute of Technology Madras
- » M.Tech in Civil Engineering (1986) from the Indian Institute of Technology Madras
- » Ph.D. (1992) from California Institute of Technology, Pasadena, CA, USA

## Research Interests:

- » Nonlinear Behaviour of Structures
- » Displacement-based Earthquake-Resistant Design of Buildings and Bridges
- » Seismic Design Codes

Prof. C. V. R. Murthy has more than 15 years of academic experience and has published more than 100 papers in reputed journals. He was Visiting Professor at IIT Hyderabad during 2009-10. During 2013-18, he served as Director of IIT Jodhpur, where he helped create systems & processes, build a new campus and infrastructure, and streamline academic programs. He conducts fundamental research in earthquake engineering of buildings and bridges. He was the Team Leader of NDMA Post-Earthquake Reconnaissance Teams to study effects of the 2011 Sikkim, 2012 Doda, 2015 Nepal and 2016 Manipur Earthquakes. He conducted with his colleagues over 40 short courses in India, Nepal and Bhutan on Seismic Design of New Buildings (Reinforced Concrete, Steel and Masonry) of Bridges, and Seismic Evaluation and Strengthening of Existing Structures and which trained over 2,500 professional engineers and architects.

## Chair Occupant



**Prof. C. V. R. Murthy**  
Department of Civil Engineering

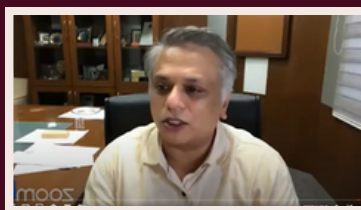
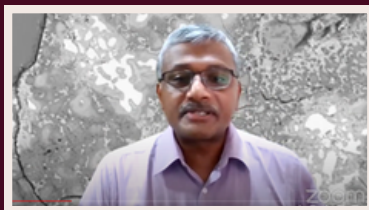
He actively steered in Technical Collaborations in Earthquake Engineering Research with three organisations namely:

- **Malaviya National Institute of Technology, Jaipur, India** (2009-Present) to establish National Earthquake Test Facility for testing of 3-storey full-scale buildings
- **The Central Building Research Institute (CBRI), Roorkee, India** (1997-2002) to establish experimental earthquake testing of full-scale tests on structures; and
- **The Institute of Engineering (IOE), Tribhuvan University, Katmandu, Nepal** (1997-2007) in establishing the M.Sc. Program in Structural Engineering (including laboratory experiments, theses discussions, and external examiner).

### **Awards and Recognition:**

- » **Honorary Advisor**, Delhi State Disaster Management Authority, Government of NCT of Delhi, 2003-05
- » **Member**, 2nd Advisory Committee, National Disaster Management Authority, Government of India, since 2016
- » **ICI Best Paper Awards**, Best Paper Published in ICI Journal, Indian Concrete Institute, 2018 and 2016
- » **Institute Chair Professor**, Indian Institute of Technology Madras, 2017-22
- » **2016 ACCE Nagadi Award**, Best Publication in Civil Engineering for the book Some Concepts in Earthquake Behaviour of Buildings, Association of Consulting Civil Engineers, 2016
- » **Member**, Tamil Nadu State Disaster Management Authority, Government of Tamil Nadu, 2013-16
- » **Member**, Advisory Committee for Nuclear and Radiation Safety, Atomic Energy Regulation Board, Department of Atomic Energy, Government of India, 2016 – present
- » **Chairman**, Earthquake Engineering Sectional Committee CED 39, Bureau of Indian Standards, Government of India, since 2020
- » **2021 ICI Award for Best Concrete Structure of the Year**, for the design and construction of a 10m tall Reaction Wall System, Indian Concrete Institute, 2021
- » **Member**, National Committee on Dam Safety, Ministry of Jal Shakti, Government of India, since 2022
- » **2022 IASE Excellence in Earthquake Structural Engineering Award** for contributions to education, research, full-scale testing and policy development in earthquake safety in India, Indian Association of Structural Engineering, 2022

### **Chair Launch Photos:**



# ALUMNI COMMUNITY INSTITUTE CHAIR

## Introduction:

The Alumni Community Institute Chair is funded by various alumni and non-alumni across the globe.

## Academic Background:

- » Bachelor of Technology (1981) from the Indian Institute of Madras
- » Ph.D. (1986) from Yale University, United States

## Research Interests:

- » Ultrasonic and megasonic fields
- » Cleanroom and contamination control
- » Nano-particle synthesis and nano-composite formulation

## Chair Occupant



**Prof. R. Nagarajan**

**Department of Chemical Engineering**

Prof. R. Nagarajan is the Alumni Community Chair Professor, Department of Chemical Engineering, IIT Madras, Robert T. Henson Distinguished Visiting Scholar, Davidson School of Chemical Engineering, Purdue University. After completing his 3- year term as Head of the Department of Chemical Engineering, Prof. Nagarajan has undertaken his sabbatical at Purdue University as Robert T. Henson Distinguished Visiting Scholar in the Davidson School of Chemical Engineering. He has conducted a Seminar Series on "Contamination Control in High Purity Manufacturing" for Purdue faculty and students. He has presented a paper at the WOCA 2022 (World of Coal Ash) conference at Covington, Kentucky, and organized a Panel at the Deshpande Symposium in Cleveland, Ohio.

A CSR project, funded by Kris and Sudha Gopalakrishnan's Pratiksha Foundation, is now in its 2nd year. With the objective of formulating nano-emulsions of spice oils for cancer treatment, the work has progressed satisfactorily to the stage of animal trials. His research priorities are coal beneficiation using the ultra-sonic fields, nano emulsions of plant oils used for cancer treatment and dust-repellent surfaces and coatings for building exteriors.

### ***Awards and Recognition:***

- » Award for “**Distinguished Service to Alumni**” in IITMAA Sangam Confluence for Impact on Sep 29, 2018
- » “**Eminent Engineer Award**” from the Institution of Engineers (India) in October 2018
- » As a member of IITMAA's "Thought Leadership Council", he has contributed a Concept Note in 2022 on "Industry-Academia Relations", and to "Global Science for Global Wellbeing", a report published on National Science Day, 2023
- » He has won several awards, including the Outstanding Younger Member Award, Institute of Environmental Sciences and Technology (IEST), April 1990; Patent (# 5,879,578) Issue Award, March 1999 several IBM Innovation & Performance Awards and Team Awards
- » Four high-impact journal papers were published, and one patent application was filed in the past year.
- » Co-wrote proposal for “Institution of Eminence”, a status awarded in 2019
- » Trustee on Board of Alumni Charitable Trust
- » Director on Board of IITM Canada Foundation
- » Chair, Travel Grant Committee, Office of ACR

### ***Chair Launch Photos:***





# DEEPAK S PAREKH INSTITUTE CHAIR



**Mr. V. Shankar**

## Introduction:

Deepak S Parekh is instituted by Mr. V. Shankar, founder of CAMS Pvt. Ltd and Acsys Investments Pvt Ltd.

## Academic Background:

- » B.Sc. and M.Sc. (1980-1985) from the Calicut University
- » Ph.D. from the Indian Institute of Science Bangalore (1991)
- » Post-doctoral Fellow Lawrence Berkeley Laboratory, University of California, Berkeley (1992-93)
- » Post-doctoral Fellow Purdue University (1993)

## Research Interests:

- » Molecular & nanoscale materials
- » Nanoscience & Nanotechnology
- » Molecular surfaces
- » Ion scattering
- » Instrumentation
- » Water purification

Prof. T. Pradeep has nearly 30 years of research and academic experience and has published more than 550 papers in various national and international journals. He has over 100 patents to his credit. His group discovered that noble metal nanoparticles degrade halocarbons efficiently to amorphous carbon and metal halides at room temperature and at low concentrations. This discovery has led to the world's first nanochemistry-based water filter for pesticide removal as many pesticides of relevance are halocarbons. A large part of his recent research is on atomically precise clusters of noble metals. His group discovered several new clusters called quantum clusters or nanomolecules. These have been used for diverse applications ranging from luminescent labels to metal ion sensors. He has conceptualized and built the International Centre for Clean Water ([www.iccwindia.org](http://www.iccwindia.org)), a new initiative of IIT Madras.

## Chair Occupant



**Prof. T. Pradeep**  
Department of Chemistry

### ***Awards and Recognition:***

- » **Padma Shri** (the fourth highest civilian award in India), 2020
- » **Nikkei Asia Prize**, 2020
- » **Silver medal of the Chemical Research Society of India**, 2020
- » **Member**, Advisory Board of ChemComm., 2020-
- » **National Water Award**, 2020
- » **IISc Distinguished Alumnus Award**, 2021
- » **Vishwakarma Medal of the Indian National Science Academy**, 2021
- » **VASVIK Industrial Research Award**, 2021
- » **Prince Sultan Bin Abdulaziz International Prize for Water**, 2022
- » **VinFuture Prize**, 2022
- » **Sastra-CNR Rao Prize** in Materials Chemistry, 2023
- » **Eni Award**, 2023
- » **International Excellence Award** of Karlsruhe Institute of Technology, Germany and the Fellowship of SCHROFF Foundation, 2023

# YBG VARMA INSTITUTE CHAIR



**Prof. YBG Varma**

## Introduction:

YBG Varma Institute Chair is instituted in honour of Prof. YBG Varma's key role in the growth of the Department of Chemical Engineering into one of the globally top 50 departments.

## Academic Background:

- » B.Tech in Chemical Engineering (1984) from the Indian Institute of Technology Madras
- » M.S. (1985) from the University of Florida USA
- » Ph.D. (1989) from the University of Florida USA

## Research Interests:

- » Microfluidics
- » Lab on Chip Devices
- » Point of care diagnostics
- » Antimicrobial resistance
- » Multiphase flows
- » Modelling and simulation

Prof. S. Pushpavanam has a strong research and academic background and has published more than 100 papers in various national and international journals. His research areas include the Development of low cost technologies for point of care diagnostics in health care and environmental monitoring. Development of break through innovations to determine antibiotic susceptibility of bacteria based on electrochemical methods. Modelling and Simulation of multiphase flows to get insight in diverse nonlinear systems. The current research topics that he is working on are hydrodynamic stability, nonlinear dynamics, microfluids, energy: production and efficient utilisation, green engineering, eco chemistry and kinetics for sustainability (GEEKS) and flow visualisation.

Some of the research projects of Prof. S. Pushpavanam are given below:

- Development of dry slag granulation technology to produce clinker compatible with Portland Cement, sponsored by Ministry of Steel and JSW, 2016 onwards
- Rotary Granulation of blast furnace slag, sponsored by JSW steel plant
- Stability of foams from a foam dispenser, sponsored by Hindustan Unilever, 2013-2015
- Understanding Mass transfer and reactions in microchannels sponsored by Council of Scientific and Industrial Research, India

## Awards and Recognition:

- » Elected Fellow of the National Academy of Engineering
- » Member of Scientific Advisory Committee, Centre for High Technology for two years.

## Chair Occupant



**Prof. S. Pushpavanam**  
Department of Chemical Engineering

# MARTI MANNARIAH GURUNATH INSTITUTE CHAIR



**Prof. Marti Subramanyam**

## Introduction:

This Institute Chair was named in honor of Prof. Marti Subramanyam's father Mr. Marti Mannariah Gurunath. The Chair was launched on Dec 27, 2019 and the first occupant of the Chair is Prof. Raghunathan Rengaswamy, Department of Chemical Engineering, IIT Madras. The donor for this chair is Prof. Marti Subramanyam has been a visiting professor at IIT Madras, IIM Ahmedabad and several other leading academic institutions in Australia, England, France, Germany, Italy, and Singapore. He is at present, the Charles E. Merrill Professor of Finance, Economics and International Business in the Stern School of Business at New York University, and Global Network Professor of Finance at NYU Shanghai, where he teaches at the undergraduate, Master's, and doctoral levels as well as in executive programs.

## Academic Background:

- » Ph.D. in Chemical Engineering (1995) from Purdue University

## Research Interests:

- » Energy Systems
- » System Biology
- » Multi-Scale Modelling
- » Fuel Cell Technology
- » Process Fault Diagnosis
- » Controller Performance Assessment

Prof. Raghunathan Rengaswamy work is in the area of systems engineering with a focus on modelling and the use of data science, ML and AI techniques. His work in these areas has resulted in more than 125 papers, two US patents, and several conference papers and presentations. Overall, his work has been cited more than 11000 times with an h-index of 42. His research areas include data science, ML and AI and he has been working in these areas for nearly 30 years. He has been involved in the implementation of ML solutions in industries from both IIT Madras and through Gyan Data Pvt. Ltd., an IIT Madras incubated company, where is he one of the co-founders.

He has also co-founded two other companies through the IIT Madras incubation facility - GITAA Pvt. Ltd. ( a data sciences training company) and Elicius Energy Pvt. Ltd.

His publications include the following research areas,

- Metabolic modeling of host-microbe interactions for therapeutics in colorectal cancer
- Novel ratio-metric features enable the identification of new driver genes across cancer types
- Comparison of first trimester dating methods for gestational age estimation and their implication on preterm birth classification in a North Indian cohort.
- Silver nanoparticle induced oxidative stress augments anticancer gut bacterial metabolites production
- Computational framework for exploring the interplay of diet and gut microbiota in autism

## Chair Occupant



**Prof. S. Raghunathan Rengaswamy**  
Department of Chemical Engineering

### ***Awards and Recognition:***

- » **Chair Professor**, Marti Mannariah Gurunath Chair
- » **Fellow INAE** (Indian National Academy of Engineering)
- » **Dean Global Engagement**, IIT Madras
- » **Founding Director**, Gyan Data Pvt Ltd
- » **2022 - “Data Sciences for engineers”** book released by Union Finance Minister Nirmala Sitaraman in a CSR summit held at IIT Madras
- » **Dr. Y.B.G.Varma award for teaching excellence** at IIT Madras in 2018
- » **John W. Graham Jr. Faculty Research Award**, Clarkson University, 2006
- » **International Federation of Automatic Control (IFAC) Best Paper Prize**, 2002-2005
- » **Best Paper of the Session award at the American Control Conference, Boston**, 2004
- » **Omega Chi Epsilon, Professor of the Year Award (Chemical Engineering)**, Clarkson University, 2003

### ***Chair Launch Photos:***



Marti Mannariah Gurunath Institute Chair in Chemical Engineering Department

We thank Prof. **Marti G Subrahmanyam** for his benevolent contribution towards “Marti Mannariah Gurunath Institute Chair in Chemical Engineering Department”

# STERLITE TECHNOLOGIES INSTITUTE CHAIR



## Introduction:

Sterlite Technologies Institute Chair is instituted by Sterlite Technologies Limited leading global optical and digital solutions company providing advanced offerings to build 5G, Rural, FTTx, Enterprise, and Data Centre networks.

## Academic Background:

- » Ph.D. in Electrical Engineering (1998) from the Indian Institute of Technology Bombay

## Research Interests:

- » Deep learning
- » Machine learning
- » Image restoration for deblurring
- » Super-resolution
- » Inpainting and dehazing
- » 3D structure from blur
- » Light field imaging
- » Underwater imaging, and multimodal learning

Prof. A N Rajagopalan has more than 25 years of academic experience. While his broad domains of expertise include Image Processing and Computer Vision, he has more recently been working on devising novel Deep Learning methods for a variety of problems encompassing both domains. Specifically, working on problems involving image deblurring, image translation, image and video captioning, AR/VR, multimodal models involving audio, language and video, restoration of underwater imagery, etc. His current research interests include recovering depth from defocused images, structure from motion blur, image restoration and super-resolution, video microscopy, image and depth inpainting, image matting, tensor voting, heritage resurrection, higher-order statistical learning, object detection in still images and video, face detection and recognition, image forensics, and underwater imaging.

## Chair Occupant



**Prof. A. N. Rajagopalan**  
Department of Electrical Engineering

Below are the research activities carried out at the Image Processing and Computer Vision Lab at IIT Madras:

- Face Recognition
- Change detection in rolling shutter affected and motion blurred images
- Dynamic scene segmentation using motion blur
- Underwater microscopic shape from focus
- Deskewing of underwater images
- Motion estimation in compressed imaging
- Depth from Motion Blur
- Image and Video Matting
- 3D Geometry Inpainting
- Image Dehazing
- HDR using Handheld Camera
- Colour Based Tracking

### ***Awards and Recognition:***

- » **Awarded Humboldt Research Fellowship** by the renowned Alexander von Humboldt Foundation, Germany in 2007.
- » **Awarded research grant by Air Force Research Lab**, USA consecutively from 2012 to 2016 for carrying out research on processing images captured from a moving aerial platform.
- » **Awarded Renewed Humboldt Research Fellowship for April 2011 - July 2011** in recognition of continued excellence in research.
- » **VASVIK award in 2013** for outstanding industrial contributions to the advancement of Electrical & Electronic Sciences and Technology.
- » **DAE-SRC Outstanding Investigator award in 2012**. A coveted national award given to very few scientists by apex body of the prestigious Dept. of Atomic Energy, India.
- » **Mid-Career Research and Development award** from IIT Madras in 2014 from among 700+ faculty.
- » **Associate Editor**, IEEE Transactions on Pattern Analysis and Machine Intelligence from 2007 to 2011. Highest-ranked journal of IEEE Computer Society.
- » **Fellow**, Alexander von Humboldt Foundation (AvH), Germany since 2007.
- » **Fellow**, Indian National Academy of Engineering (INAE) since 2011.
- » **Fellow**, Institution of Electronics and Telecommunications Engineers (IETE) since 2014 (by invitation from the President of IETE).
- » **Associate Editor**, IEEE Transactions on Image Processing from 2012- 2016. Flagship journal of IEEE Signal Processing society.
- » Serving as **Senior Area Editor**, IEEE Transactions on Image Processing since 2016. This is a singular international honour as he is perhaps the only academic from an Indian institution to be thus inducted.
- » **Google India AI/ML Research Award** for Faculty in 2018. Google introduced this award for Indian faculty for the very first time in 2018.
- » **Sterlite Technologies Chair Professor** since May 2020.
- » **Area Chair**, CVPR 2022 and ACCV 2022.
- » **Qualcomm Faculty award** in 2022.
- » **Awarded Renewed Humboldt Research Fellowship** for May 2023 - July 2023 in recognition of continued excellence in research.

# RAGS FAMILY FOUNDATION INSTITUTE CHAIR



**Prof. Sridhar Tayur**

## Introduction:

The RAGS Family Foundation Institute Chair is donated by Prof. Sridhar Tayur, University professor, Carnegie Mellon University. He also holds various other positions in diverse fields.

## Academic Background:

- » BE (Honours) in Mechanical Engineering from College of Engineering, Guindy, University of Madras (1982)
- » ME in Industrial Engineering from College of Engineering, Guindy, Anna University (1984)
- » Ph.D. in Electrical Engineering (1998) from the Indian Institute of Technology Bombay
- » Dr.rer.pol.h.c. in Business Administration and Economics from University of Passau, Germany (2017)

## Research Interests:

- » Industrial Engineering
- » Production and Operations Management
- » Supply Chain Management
- » Operations Research Applications
- » Quality Management
- » Especially related to Scheduling in Manufacturing and Service Systems
- » Supply Chain Network
- » Inventory and Logistics Management
- » Data Analytics
- » Empirical Studies on Quality
- » Heuristics and Meta-heuristics (such as genetic algorithms, simulated annealing and swarm intelligence)
- » Simulation Modelling and Applications.

Prof. Rajendran C. has over 35 years of research and teaching experience. He was a Professor in the Department of Humanities and Social Sciences, IIT Madras and then moved to the Department of Management Studies, IIT Madras. He has published two books namely Capacitated Lot Sizing Problems in Process Industries and Total Quality Management in Higher Education: Study of Engineering Institutions. Also Prof. Rajendran has published more than 150 papers in various international journals. His area of publications include

## Chair Occupant



**Prof. Chandrasekharan Rajendran**  
Department of Management Studies

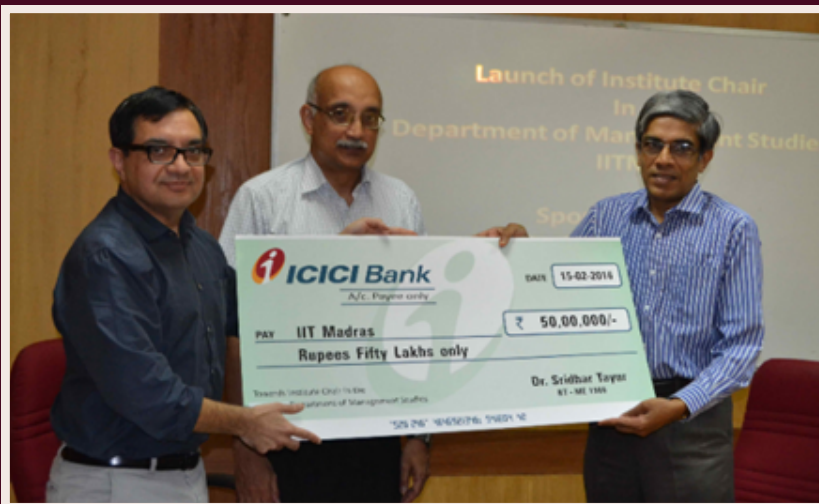


- Production Planning and Scheduling
- Quality Management and Service Quality
- Supply Chain Management including Logistics and Inventory Systems
- Analytics in Manufacturing and Service Systems

***Awards and Recognition:***

- » **Alexander von Humboldt (post-doctoral) Research Fellowship:** 1996-1997, 1998, 2001, 2002, 2003, 2004, 2006, 2008, 2009, 2010 and 2015. German Mentor: Prof. Dr. Hans Ziegler, University of Passau, Germany
- » **Research Excellence Award** (Department of Industrial Engineering, College of Engineering, Guindy, Anna University): 2010.
- » **Highly Commended Award** (Emerald Literati Network): 2009 and 2011.
- » **DAAD Fellowship:** 1995 (three months) German Mentor: Prof. Dr. Hans Ziegler, University of Passau, Germany
- » **Recipient of the prestigious Alexander von Humboldt Research Fellowship of Germany** – awarded by Alexander von Humboldt Stiftung of Germany.
- » **Selected for RAGS Family Foundation Institute Chair** in IIT Madras in 2016
- » **Ranked no 1 among 1,416 faculty members** (across all functional areas of Management) in the top 32 Business Schools in India who had published during 1968 – 2014.

***Chair Launch Photos:***



# R. SRINIVASAN INSTITUTE CHAIR



**Prof. R. Srinivasan**

## Introduction:

The Prof. R. Srinivasan Institute Chair was instituted in honour of the legendary professor R. Srinivasan, by the Department of Physics. He completed his Ph.D. from Madras University in 1957. After getting his Ph.D. and doing post-doctoral work, he joined IIT Madras in 1962 and worked there till 1990. In 1990 he was invited by UGC to be the Director of IUC-DAEF (now called UGC-DAE CSR) in Indore and built the institution from scratch till 1995. He was also a consultant to the Cryogenics Division of the Institute for Plasma Physics in Gandhinagar for four years and has set up the Low Temperature Laboratory which was acclaimed as one of the best laboratories in the country.

## Academic Background:

- » M.Sc in Physics (1983) from the Indian Institute of Technology Kharagpur
- » Ph.D. (1988) from the Indian Institute of Technology Kharagpur

## Research Interests:

- » Quantum materials
- » Magnetism and correlated oxides and oxide electronics
- » Diamond thin films and coatings for industry applications
- » NV-centres in diamond for quantum applications
- » Photovoltaics
- » 2D materials
- » Multiferroics
- » Granular superconductivity in boron doped diamond (BDD) for quantum circuits
- » Lab-grown diamond (LGD) for commercial and electronic applications

Prof. M S Ramachandra Rao has more than 30 years of academic and research experience and has published more about 325 research papers in peer reviewed international journals. He has also written two books namely Nanoscience and Nanotechnology: Fundamentals to Frontiers and ZnO Nanocrystals and Allied Materials. His research group has numerous ongoing research activities on the physics and applications of 'Nanostructured thin film and nanomaterials' and 'Advance materials'. The research areas include, the growth of ZnO nanostructures and doped ZnO for white light emission and UV detection; Magnetic nanoparticles (MNPs)-understanding the physics of small magnetic particles and applications of MNPs in magnetic hyperthermia and water purification; Fabrications of magnetic tunnel junctions; Magnetoelectric coupling studies in multiferroics; Nanocrystalline diamond (NCD) wear resistant coatings on WC dies, end mills etc. for industrial applications; Conducting boron-doped diamond (BDD) electrodes for textile and pharmaceutical contaminated water; Doping in diamond for colour emission and conducting granular BDDs to realise high kinetic inductance for quantum circuits.

## Chair Occupant



**Prof. M S Ramachandra Rao**  
Department of Physics

### ***Awards and Recognition:***

- » **Alexander von Humboldt Fellow**, Germany
- » **JSPS fellow and JST fellow**, Japan
- » **Visiting Faculty (2004-'05)**, at the University of Maryland (UMD), College Park, USA
- » **DAAD STAR Professor Award fellowship**, Germany (2010)  
**MRSI (Materials Research Society of India) medal in 2018** for excellent contributions in the field of
- » materials science and superconductivity
- » **MRSI Council member** since 2015  
**MRSI, Vice President** (Since 2018)
- » **Erasmus-Mundus foreign academic and Visiting Professor** in the European Master's program (MAMaSELF) since 2005 (France, Germany and Italy)
- » **Adjunct Faculty**, Shibaura Institute of Technology (SIT), Tokyo
- » **Fellow** of Institute of Physics (FInstP), UK

# M. A. PARAMESWARAN INSTITUTE CHAIR



**Prof. Parameswaran**

## Introduction:

Professor Parameswaran was well-known for his dedication to teaching mechanical design courses. He is also specialized in the area of material handling problems. With his excellent teaching, he endeared himself to many students. He had been a visiting Professor at the University of Technology, Malaysia, and also visited National University, Singapore in 1993. Professor Parameswaran was involved in many consultancy projects with PSUs such as Neveli Lignite Corporation. He is known among his peers as a designer par excellence. Professor Parameswaran was President of the IIT Madras Alumni Association in the 1990s. He was instrumental in Alumni Silver Unions during that time. He was one of the first trustees for the IIT Madras Alumni Charitable Trust, formed in 1993. Students of Prof. Parameswaran instituted this chair in his memory.

## Academic Background:

- » Ph.D. in Internal Combustion Engines (1990) from the Indian Institute of Technology Madras

## Research Interests:

- » Combustion and emission control in Internal combustion engines
- » Hybrid electric drives for automotive applications
- » Alternative fuels and novel combustion systems
- » Gasoline Direct
- » Injection and hot surface ignition.

## Chair Occupant



**Prof. A. Ramesh**

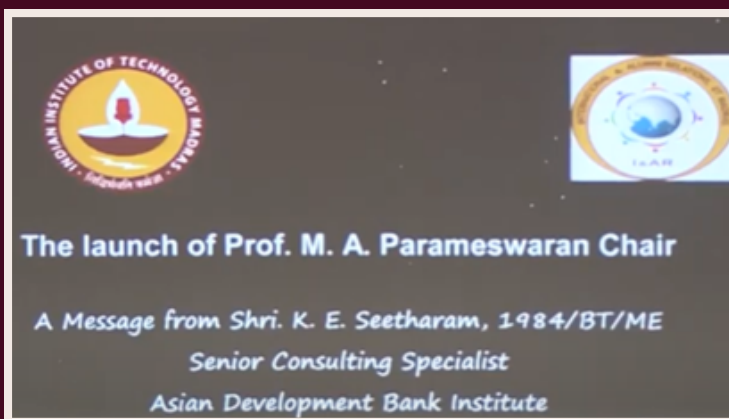
**Department of Mechanical Engineering**

Prof. A. Ramesh has more than 15 years of academic experience and has guided several students toward their Ph.D. and Master's degrees and has published more than 185 research papers in Journals and Conferences. He works on several projects jointly with Automotive Industries. He has also undertaken several sponsored projects and has played a key role in the establishment of the Automotive Laboratories at NCCRD at IIT Madras. He is currently working on projects like the Development of a Hot Surface Ignition Engine Running on neat methanol For Automotive Applications, A Novel Biofuel Based Twin Injector Multi-mode Genset Engine for High Performance and Low NOx Emissions - Development and Demonstration, Development and validation of a cost-effective hybrid electric drive solution for small two wheelers for reducing CO2 emission (HERCET), and Studies on combustion chamber development for GDI engines.

### **Awards & Recognition:**

- » Awarded the Life Time Achievement Award by SAE India Southern Section in 2018.
- » Awarded the Gem of ACCET award in 2017.
- » Srimathi Marti Annapurna Gurunath Award for Excellence in Teaching by Indian Institute of Technology Madras, 2017.
- » Gem of ACCET award.

### **Chair Launch Photos:**



# K. MAHESH INSTITUTE CHAIR



Mr. K. Mahesh

## Introduction:

This Institute Chair was initiated by Mr. Krishna Mahesh (Managing Director at Sundaram Brakes Lining Ltd) in memory of his father Mr. K Mahesh an alumnus of IITM. Mr. K Mahesh was a dedicated leader and a man of principles. He hailed from the esteemed TVS Group and served as the whole-time director of T V Sundaram Iyengar & Sons Private Ltd. He remained actively involved as a director and non-executive chairman. His contributions extended beyond his own company, as he played a pivotal role in starting the cluster program in ACMA, benefiting numerous automotive component industry plants over the last two decades.

## Academic Background:

- » B.Tech Mechanical Engineering (1982) from Regional Engineering College, Trichy
- » M.Tech (1984) from the Indian Institute of Sciences, Bangalore
- » Ph.D. (1988) from the Indian Institute of Technology Madras, Chennai

## Research Interests:

- » Computer Applications in Experimental Mechanics
- » Digital Photoelasticity
- » Fracture Mechanics
- » Composite Materials
- » Educational Technology

Dr. K. Ramesh Has pioneered the area of Digital Photoelasticity internationally. It is essentially a stress analysis tool used in several fields of Engineering and Physics. He is passionate about developing innovative educational material to teach Engineering with extensive experimental results to support the theory. He has pioneered a new paradigm in Engineering Education by writing innovative e-Books on Engineering Fracture Mechanics and Experimental Stress Analysis published by IIT Madras. Prof. Ramesh has also developed several educational software such as PHOTOSOFT\_H, MOIRESOFT and CAUSTICSOFT to teach various experimental methods interestingly (in dos platform) and has recently developed PSCOPETM - A comprehensive software for understanding whole field stress analysis. In addition an analysis package DigiTFPTM has also been developed to evaluate photoelastic parameters that use Twelve Fringe Photoelasticity for isochromatic evaluation and polarisation stepping for isoclinic evaluation.

## Chair Occupant



Prof. K. Ramesh

Department of Applied Mechanics &  
Bio Medical Engineering

### ***Awards and Recognition:***

- » **Received the 2023 M M Frocht Award** of Society for Experimental Mechanics (SEM), USA for outstanding contributions as an educator in the field of Experimental Mechanics.
- » **Received the 2012 Zandman Award** of the Society for Experimental Mechanics (SEM) for Outstanding contributions in the Application of Photo elastic Coatings.
- » **Distinguished Alumnus Award for Academic Excellence**, National Institute of Technology, Trichy, 2008.
- » Elected Fellow of The Indian National Academy of Engineering, 2006.
- » **Received the President of India Cash Prize**, in 1984
- » **Contributed a paper** through invitation in the **Golden Jubilee issue** of the Journal of Strain Analysis for Engineering Design, 2015.
- » **Guest edited a Special Section on Digital Photoelasticity: Advancements and Applications**, 2015, in SPIE Journal of Optical Engineering.
- » **Contributed a chapter on Photoelasticity** by invitation in the Springer Handbook of Experimental Solid Mechanics (2009) Published by SEM and Springer, Edited by W. N. Sharpe, Department of Mechanical Engineering, John Hopkins University, USA
- » **Guest edited a Special Issue of Optics and Lasers** in Engineering on Digital Photoelasticity
- » **Member of the Editorial Boards of the International Journals:** Strain (since 2001), Journal of Strain Analysis for Engineering Design (2009-10), Optics and Lasers in Engineering, and Steering committee member of the Asian Society for Experimental Mechanics since its inception in 2000

# V. S. RAJU INSTITUTE CHAIR



Prof. V.S. Raju

## Introduction:

The V.S. Raju Institute Chair was instituted by honoring Prof. V.S. Raju who worked at IIT Madras and later on went to be the Director of IIT Delhi. In a career spanning over 4 decades Prof. Raju had performed in many roles, like teaching, research, administration, Industrial consultancy etc. He coordinated major R&D projects on Ocean Energy.

## Academic Background:

- » Bachelor of Civil Engineering (Honours) (1984) from the University of Madras
- » M.S in Civil Engineering (1986) from the Marquette University, USA
- » Ph.D. in Structural Engineering from Northwestern University, USA

## Research Interests:

- » Effective use of superplasticizers in concrete
- » Behaviour of concrete with shrinkage reducing admixtures
- » Characterization and application of self compacting concrete

Prof. Ravindra Gettu has more than 30 years of academic experience and has published more than 100 papers in various international and national journals. His research has been funded by public organizations, as well as the construction industry, helping him focus on applied research and technology transfer. He has co-authored close to 500 publications, of which more than 100 are peer-reviewed journal papers. He was honored for outstanding contributions at the Gettu-Kodur Symposium on Advances in Science & Technology of Concrete, organized by the India Chapter of the American Concrete Institute, Mumbai, in 2018. The areas of research of Dr. Gettu have been fracture mechanics of concrete and rock; nonlinear behaviour of cement-based materials; high strength, fibre reinforced and self compacting concretes; sustainability and the effective use of chemical admixtures.

## Chair Occupant



Prof. Ravindra Gettu  
Department of Civil Engineering



### ***Awards and Recognition:***

- » Elected Foreign Member of the Russian Academy of Engineering, 2019.
- » Fellow of the Indian National Academy of Engineering, 2018
- » Co-honoree at the Gettu-Kodur Symposium on Advances in Science & Technology of Concrete, organized by the India Chapter of the American Concrete Institute, Mumbai, 2018.
- » Outstanding Concrete Engineer of Tamilnadu Award of the Indian Concrete Institute Chennai Centre, 2015.
- » Honorary title of RILEM Fellow, 2012.
- » Outstanding Concrete Technologist Award of the Indian Concrete Institute, 2010.
- » School of Civil Engineering (Barcelona) Award for Outstanding Achievements, 2003.

### ***Chair Launch Photos:***



# M. S. ANANTH INSTITUTE CHAIR



**Prof. M. S. Ananth**

## Introduction:

M. S. Ananth Institute Chair was funded by Dr. Ashok Krishna (1974/BT/CE) and Dr. Kamala R. Krishna (1983/BT/CE) in honour of Prof. M. S. Ananth, former Director IIT Madras.

## Academic Background:

- » B.Tech (1982) from the Indian Institute of Technology Madras
- » MS (1984) and Ph.D. (1987) from the Indian Institute of Technology Kanpur

## Research Interests:

- » Data Mining
- » Process Design and Optimization
- » Fault Detection and Diagnosis (FDD)
- » System Identification

Prof. Shankar Narasimhan is well known for his work in the area of Data Reconciliation in which he has co-authored several important papers and a book that has received critical appreciation in India and abroad. In the area of process design, he has made important and seminal contributions in the design of sensor networks, heat exchanger networks, and water distribution networks. Based on his research work, he has developed several software packages for Indian industries (Data reconciliation for Engineers India Ltd., Leak detection in gas pipeline networks for GAIL, Model based control using artificial neural networks for Envision India). He is the co-founder of two companies Gyan Data Pvt. Ltd., and GITAA Pvt. Ltd., which provide solutions, products and training in data analytics, and machine learning for the manufacturing sector

## Awards and Recognition:

- » **Engineers India Research Award instituted at IIT Kanpur (1994-1995)**
- » **Fellow of the Indian National Academy of Engineering (2012)**
- » **EIL Research Award for 1994-95**
- » **Fellowship of the Indian National Academy of Engineers in 2012**
- » **CII Emerging Entrepreneur of the Year Award for Manufacturing in 2017**

## Chair Occupant



**Prof. Shankar Narasimhan**  
**Department of Chemical Engineering**

# RICHARD KARP INSTITUTE CHAIR



**Prof. Richard Karp**

## Introduction:

Richard Karp Institute Chair was instituted in 2015 by the thoughtful contribution of Dr. Prabhakar Raghavan. The chair was named after Prof. Richard Karp, renowned computational theorist and Professor Emeritus at the University of California, Berkeley. Prof. Karp is most notable for his research in the theory of algorithms and is the recipient of the Turing Award in 1985, The Benjamin Franklin Medal in Computer and Cognitive Science in 2004, and the Kyoto Prize in 2008. The Donor Dr. Prabhakar Raghavan is a Senior Vice President at Google and is responsible for Google Search Assistant, Geo, Ads, Commerce, and Payments Products.

## Academic Background:

- » B.Tech in Electronics and Communication Engineering (1982) from REC, Warangal
- » M.Tech in Computer Engineering (1984) from the Indian Institute of Technology, Kharagpur
- » Ph.D. in Computer Science (1988) from the Indian Institute of Science, Bangalore

## Research Interests:

- » Ad hoc wireless networks
- » Parallel and distributed computing
- » Real-time systems
- » Computer networks

Prof. C. Siva Ram Murthy has more than 30 years of academic experience and has published a number of research papers in peer-reviewed international journals and refereed international conference proceedings in his core areas. He is a co-author of the textbooks Resource Management in Real-time Systems and Networks (MIT Press, USA), Ad Hoc Wireless Networks: Architectures and Protocols (Prentice Hall, USA), WDM Optical Networks: Concepts, Design, and Algorithms (Prentice Hall, USA), An Analytical Approach to Optical Burst Switched Networks (Springer, USA), Parallel Computers: Architecture and Programming (Prentice-Hall of India), and New Parallel Algorithms for Direct Solution of Linear Equations (John Wiley & Sons, USA). He is currently the Visiting Professor of Computer Science at IIT Hyderabad. His broad area of research include resource management issues in 5G/6G wireless networks – user association, spectrum allocation, interference and power management, service function chaining, security, and user privacy preservation, efficient solutions for resource provisioning and harmonious coexistence of heterogeneous wireless technologies in fog computing enabled IoT networks and the development of ultra-reliable and low latency communication services in NR-V2X for enhancing road safety and traffic efficiency.

## Chair Occupant



**Prof. C. Siva Ram Murthy**  
Department of Computer Science and  
Engineering

### ***Awards and Recognition:***

- » INSA Medal for Young Scientists
- » Dr. Vikram Sarabhai Research Award
- » Sir JC Bose (The Real Inventor of Marconi's Wireless Receiver) Fellowship (2016-2026)
- » Erasmus Mundus Faculty Research Fellowship
- » IBM (USA) Real-Time Innovation Award
- » Elected Fellow of
  - Indian National Academy of Engineering (INAE)
  - National Academy of Sciences (NASI)
  - Indian National Science Academy (INSA)
  - The World Academy of Sciences for the advancement of science in developing countries (TWAS, Italy)
  - Institute of Electrical and Electronics Engineers (IEEE, USA)
- » INAE Chair Professorship

### ***Chair Launch Photos:***



# D. SRINIVASAN INSTITUTE CHAIR



Mr. S. Sridhar

## Introduction:

D. Srinivasan Institute Chair was instituted by Mr. S. Sridhar, Retd Chairman & Managing Director of Central Bank of India to honour his father Mr. D. Srinivasan.

## Academic Background:

- » B.Tech (1988) from the Indian Institute of Technology Madras
- » M.S. (1990) and Ph.D. (1995) from Georgia Tech, USA

## Research Interests:

- » Analysis, modeling and experimental investigation of thermoacoustic instabilities
- » Dynamical systems & complex systems approach to thermoacoustic instability
- » Critical transitions in complex systems

Prof. R. I. Sujith pursues both basic and applied research in the area of Combustion Instability and Laser Diagnostics of Flow and Combustion. Sujith's most important scientific contribution is the discovery of the non-normal nature of thermoacoustic interactions and its role in sub-critical transition to thermo-acoustic instabilities. He has carried out projects worth 8 Crores, leading to solutions for various industrial problems and the establishment of state-of-the-art facilities at IIT Madras. His broad areas of research are Thermoacoustic Instability, Nonlinear Dynamics and Complex Systems Theory. He pursues both basic and applied research in the area of Combustion Instability and Laser Diagnostics of Flow and Combustion. His most important scientific contribution is the discovery of the non-normal nature of thermoacoustic interactions and its role in sub-critical transition to thermo-acoustic instabilities. He was awarded the Swarnajayanti fellowship for this work. His specific research areas are as follows:

- Develop tools for early warning of critical transitions and extreme events
- Mitigating transitions and their effects through smart control actions
- Product development and start-up incubation
- Develop an online international education and technology dissemination program

## Chair Occupant



Prof. R. I. Sujith

Department of Aerospace  
Engineering

## ***Awards and Recognition:***

- » **Elected as International Member of the US National Academy of Engineering, 2023**
- » **Featured article and coverage in Scilight: SOMNATH DE, SHRADDHA GUPTA, VISHNU R. UNNI, REWANTH RAVINDRAN, PRAVEEN KASTHURI, NORBERT MARWAN, JUERGEN KURTHS, & R. I. SUJITH. (2023) “Study of interaction and complete merging of binary cyclones using complex networks”, Chaos, 33(1), 013129, 2023**
- » **Fellow of the Combustion Institute, 2022**
- » **Distinguished Fellowship of the International Institute of Acoustics and Vibration, 2021**
- » **Best paper award of ASME Turbo Expo, Combustion Fuel & Emissions: I. PAVITHRAN, V. R. UNNI, A. SAHA, A. J. VARGHESE, R. I. SUJITH, N. MARVIN, & J. KURTHS (2021) “Predicting the Amplitude of Thermoacoustic Instability Using Universal Scaling Behavior”, Journal of Engineering for Gas Turbines and Power, 143(12), 2021**
- » **Featured article and coverage in Scilight: I. Pavithran and R. I. Sujith(2020) “Effect of rate of change of parameter on early warning signals for critical transitions”, Chaos, 31, 013116, 2021**
- » **Topical review (invited) for the International Combustion Symposium, 2021**
- » **Invited Review article in the European Physical Journal Special Topics, 2021**
- » **In the list of top 2% of researchers in the world (at top 1%) by an independent study at Stanford University researchers, 2020**

## ***Chair Launch Photos:***



# V. BALAKRISHNAN INSTITUTE CHAIR



**Prof. V. Balakrishnan**

## Introduction:

Indian Institute of Technology Madras (IIT Madras) launched the V. Balakrishnan Institute Chair on 15th July 2022 to focus on research and teaching in the areas of Natural Sciences, Mathematics, and theoretical foundation of Engineering.

The Chair was named in honor of Prof. V. Balakrishnan, a former faculty of IIT Madras and an Indian theoretical physicist who has worked in several fields and areas, including particle physics, many-body theory, and the mechanical behavior of solids, dynamical systems, stochastic processes, and quantum dynamics. He is an accomplished researcher who has made important contributions to the theory of elasticity, continuous-time random walks, and recurrences in dynamical systems.

## Academic Background:

- » BE in Mechanical Engineering from Jadavpur University(1984)
- » ME in Heat Power Engineering from Jadavpur University (1987)
- » Ph.D. in Heat Transfer from NIT Rourkela (1994)
- » Post-Doctoral from Helmut Schmidt University, Hamburg, Germany (1993-1994)

## Research Interests:

- » Biomicrofluidics and Healthcare
- » Fuel Cells and Battery Thermal Management
- » Electronic Cooling
- » Desalination technology

Prof. Sarit K. Das works with various aspects of Thermo fluidics like heat and mass transfer in industrial equipment such as heat exchangers and fuel cells, multiphase flow and energy conversion. He has authored more than 250 journal and conference publications and is one of the highest-cited mechanical engineers in the country. The research group of Prof. Sarit K. Das works with various aspects of Thermo fluidics like heat and mass transfer in industrial equipment such as heat exchangers and fuel cells, multiphase flow and energy conversion. Water management in PEM fuel cells and thermal management of battery stack are the two active areas in this direction. The group specifically focuses on Micro-Nano scale processes and is known to be one of the leading groups on Nanofluids in the world. Another area of focus of the group is Biomicrofluidics. It works on design, fabrication, simulation and experimentation on Biochips, which are specifically conceptualized to mimic human physiological conditions. The focus is to use this for medical diagnostics, a platform for drug delivery and understanding physiological and pathological states related to cardiovascular diseases and cancer. The group has also started working on thermal desalination techniques such as Multi-flash and HDH (Humidification and Dehumidification ) systems.

## Chair Occupant



**Prof. Sarit Kumar Das**  
Department of Mechanical  
Engineering

**Awards and Recognition:**

- » India Citation Award 2012 conferred by Thomson Reuters.
- » Fellow of National Academy of Sciences (NASI), Allahabad, 2011.
- » Peabody visiting Professor, MIT, Cambridge, Massachusetts, 2011.

**Chair Launch Photos:**





# VENKATARAMAN AND SITA SRINIVASAN INSTITUTE CHAIR



**Prof. V. 'Seenu' Srinivasan  
&  
Mrs. Sita Srinivasan**

## **Introduction:**

Indian Institute of Technology Madras has launched 'Venkataraman and Sita Srinivasan Chair' on Innovation and New Product Development, which is being endowed by Prof. V. 'Seenu' Srinivasan, Adams Distinguished Professor of Management, Emeritus, Stanford University, U.S.A. He is an alumnus of IIT Madras and received his Bachelor's degree in Mechanical Engineering in the year 1966. He was the gold medalist in his graduating class.

The establishment of the Institute chair is a dedication to Prof. V. 'Seenu' Srinivasan's father, Mr. Venkataraman, who played a significant role in shaping his identity. Additionally, it serves as a tribute to his wife, Mrs. Sita Srinivasan, for her steadfast support throughout the years.

## **Academic Background:**

- » BE in Mechanical Engineering from Andhra University (1984)
- » M.Tech in Cryogenic Engineering from the Indian Institute of Technology, Kharagpur (1986)
- » Ph.D. in Heat exchangers from the Indian Institute of Technology, Kharagpur (1991)

## **Research Interests:**

- » Development of new innovative refrigeration systems.
- » Development of Low GWP Refrigerant mixtures.
- » Fault detection and diagnosis of large chillers.
- » Fault detection and diagnosis of HVAC systems.
- » Improvement of efficiency of Refrigeration and Air conditioning Systems.
- » New refrigeration and liquefaction processes operating with mixtures.
- » Heat exchangers – Modelling, additive manufacturing, testing.
- » Thermodynamics of mixtures.
- » Cooling of Microscope to cryogenic temperatures (Centre for Correlative Microscopy, IIT Madras).

The mission of Prof. G. Venkatarathnam is to develop innovative refrigeration systems, heat exchangers and design/thermodynamic tools. Another mission is to help the Indian refrigeration and heat exchanger industry improve their products and services, and introduce new world class products. His research group are developing a variety of innovative products and solutions as a part of our vision to make cooling Sustainable, e.g., low global warming potential refrigerants, high efficiency refrigeration systems, heat exchangers, and battery cooling systems. They also work in the Automatic Fault Detection and Diagnosis of HVAC systems. His algorithms are currently used by a leading industry for AFDD of multiple chillers (100-1000 TR) at over 3500 locations every day.

Other types of thermodynamic algorithms developed by Prof. Venkatarathnam are used in many thermodynamic and process simulation software such as NIST Refprop, Aspen Plus, etc.

## **Chair Occupant**



**Prof. . G. Venkatarathnam  
Department of Mechanical  
Engineering**

# NT ALEXANDER INSTITUTE CHAIR

## Introduction:

NT Alexander Institute Chair received generous contributions from three different donors and a significant giving by Mr. Thomas Alexander in memory of their father who was an electrical Engineer.

## Academic Background:

- » B.Tech in electronics and communication engineering from IIT Madras (1995)
- » MS in University in Electrical Engineering from the Columbia University in the City of New York (1997)
- » Ph.D. in Electrical, Electronics and Communications Engineering (1999) from the Columbia University in the City of New York

## Research Interests:

- » High-speed analog circuit design
- » Signal Processing
- » Transactions on Circuits and Systems

Prof. Shanti Pavan is known for his studies on mixed signal VLSI circuits and is an elected fellow of the Indian National Academy of Engineering. He is currently the Dean of Academic Research. He is also a fellow of IEEE. The Council of Scientific and Industrial Research, the apex agency of the Government of India for scientific research, awarded him the Shanti Swarup Bhatnagar Prize for Science and Technology, one of the highest Indian science awards for his contributions to Engineering Sciences in 2012. Prof. Shanthi Pavan was featured in the book titled “75 under 50: Scientists Shaping Today’s India”, Union Minister of State Science & Tech, Shri. Dr. Jitendra Singh released it on National Science Day on March 2022. He concentrated on analog mixed signal VLSI circuits and has developed many designs of core components of electronic systems. He has documented his research by way of several articles a number of online repositories of scientific articles, and has listed many of them. He holds two patents viz. Low distortion filters and Method and apparatus for low power continuous time delta sigma modulation and has developed a series of video lectures.

## Awards and Recognition:

- » **Wiley-IEEE Press Professional Book Award** for “Understanding Delta-Sigma Data Converters, 2nd Edition”, 2020
- » **Distinguished Lecturer** of the IEEE Circuits and Systems Society, 2018-2019
- » **Fellow**, IEEE (Class of 2018), for contributions to Delta-Sigma modulators and analog filters
- » **Distinguished Lecturer** of the IEEE Solid State Circuits Society, 2015-16
- » **Mid-career Research and Development Award**, IIT Madras, 2016
- » **Editor-in-Chief**, IEEE Transactions on Circuits and Systems : Regular Papers, 2014-2015
- » **Deputy Editor-in-Chief**, IEEE Transactions on Circuits and Systems : Regular Papers, 2012-2013
- » **Shanti Swarup Bhatnagar Award** in Engineering Sciences, 2012
- » **Fellow**, Indian National Academy of Engineering
- » **Technomenter Award** from the India Semiconductor Association
- » **Swarnajayanthi Fellowship** from the Department of Science and Technology, Govt. of India
- » **Young Faculty Recognition Award** from IIT Madras
- » **Darlington Best Paper Award** from the IEEE Circuits and Systems Society
- » **Young Engineer Award** from the Indian National Academy of Engineering

## Chair Occupant



**Prof. Shanti Pavan**  
Department of Electrical  
Engineering

# NITA AND KG GANAPATHY INSTITUTE CHAIR



**Dr. Srinivasan KG Ganapathi  
& Mrs. Nita Ganapathi**

## Introduction:

Nita and KG Ganapathy Chair is donated by Dr. Srinivasan KG Ganapathi, CEO of Vimaan Robotics Inc., and Mrs. Nita Ganapathi.

## Academic Background:

- » B.Tech in Civil Engineering (1990) from MG University
- » M.Tech in Environmental Engineering (1993) from Indian Institute of Technology Kanpur
- » Ph.D. in Environmental Engineering (1998) from Indian Institute of Technology Kanpur

## Research Interests:

- » Water Treatment and Rural Water Supply
- » Domestic and Industrial wastewater treatment with emphasis on wastewater reuse and recycling
- » Bioremediation of contaminated soils, air, and water with heavy metals, pesticides, and other hazardous organic compounds

Prof. Ligy Philip has over 20 years of academic experience and has over 250 scientific publications, with over 140 of them appearing in International Journals of repute. She has developed many technologies for the remediation of contaminated soil / aquifer / water / wastewater and air. She has been making major contributions to the advancement of knowledge in Environmental Engineering and to the betterment of society for more than two decades through teaching and industry-oriented projects. Her patented technologies have been successfully used in a variety of sectors and have been accepted by organizations such as UNICEF. She has conducted high quality research on treatment of industrial effluents from highly polluting industries, bioremediation of contaminated soils and groundwater, novel processes for drinking water treatment, and sustainable management of waste. Technologies developed by her have been successfully utilized by several industries and NGOs. She has provided consulting services to a large number of industries in the area of pollution monitoring and control. Reputed international organizations such as Bill and Melinda Gates Foundation utilize her expertise in the area of sanitation.

## Chair Occupant



**Prof. Ligy Philip**  
Department of Civil Engineering

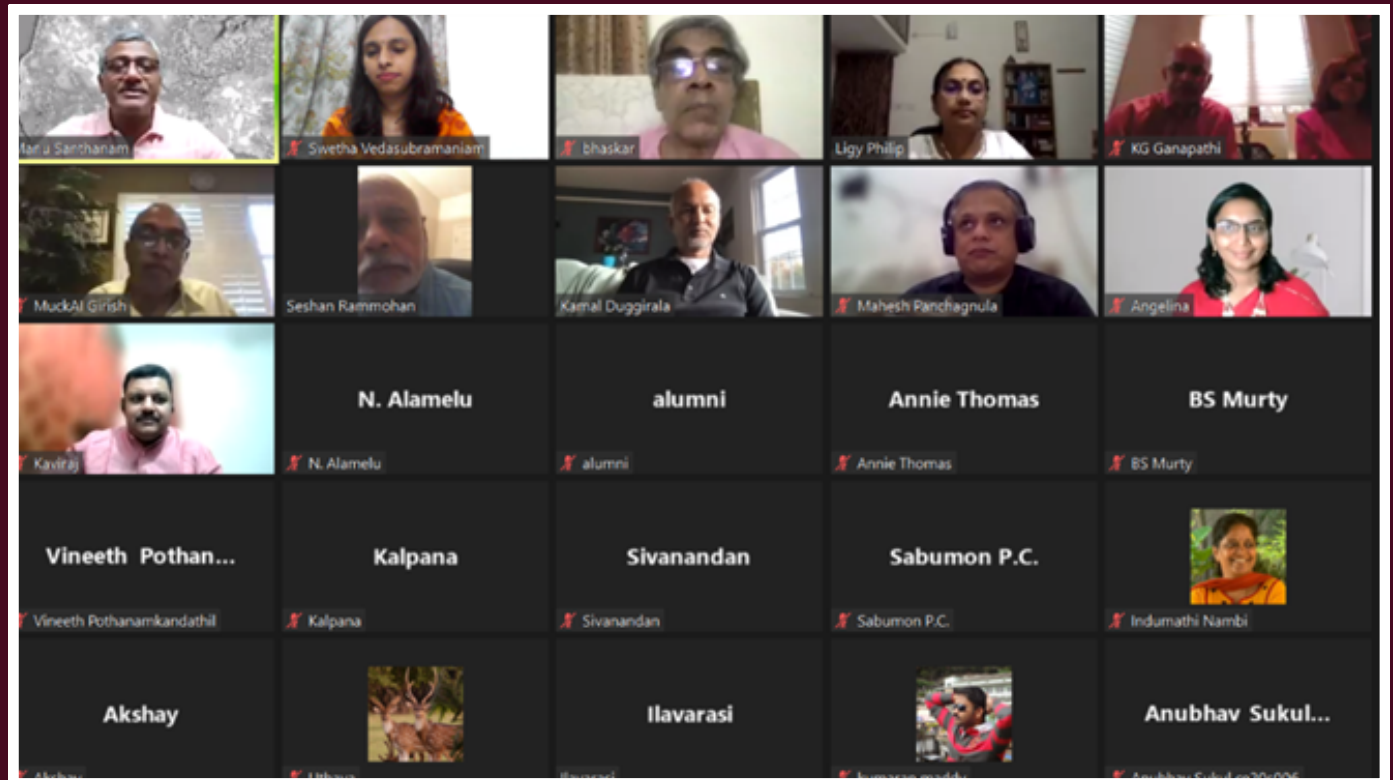
Some of her research projects are stated below:

- 2018 - 2023, Adaptation of waste management infrastructure in coastal areas to climate change, Department of Science & Technology
- 2018 - 2023, Wastewater Treatment Technologies and Sensors, Department of Science & Technology
- 2018 - 2023, Centre for Sustainable Treatment, Reuse and Management for Efficient, Affordable and Synergistic So, Department of Science & Technology
- 2021 - 2026, Water and Sustainability, Ministry of Human Resource and Development
- 2019 - 2022, Creation of Management Structure for Hazardous Substances, Ministry of Environment, Forest and Climate Change

### ***Awards and Recognitions:***

- » Fellow of the Royal Society of Chemistry (FRSC)
- » Fellow of the National Academy of Engineers (FNAE)
- » Editorial Board Member, Environmental Science: Water Research & Technology, RSC (2016 onwards)
- » Subject Editor. H2Open Journal. IWA publication (2016 onwards)
- » Editorial Board Member. Journal of Environmental Science and Engineering, National Environmental Engineering Research Institute (NEERI) (2010 onwards)
- » Chairperson, BOG, Government College of Engineering, Trissur Kerala
- » Head, Environmental and Water Resources Engineering Laboratory, IIT Madras
- » Expert Committee member, Modification of Govt. Order related to textile Industries, TNPCB

### ***Chair Launch Photos:***



# P. C. VARGHESE INSTITUTE CHAIR



**Prof. P. C. Varghese**

## Introduction:

Shri Puthenveetil Chandapillai Varghese, a UNESCO Chief Technical Advisor, has over 60 years of teaching experience. He has published six books with PHI learning in the field of Civil Engineering. He also encouraged and groomed many faculty members and graduates into leadership roles. In 1961 he joined at IIT-Madras as Head of the Civil Engineering department and served till 1972. From 1972 to 1982 he served the Moratuwa University, Colombo (Sri Lanka). He also acted as UN advisor to the Ministry of Works, Sri Lanka during this period. There he worked with the UNCHS and the Ministry of Works and Housing on many building projects. In 1983 he returned from Sri Lanka and settled down in Chennai. Post this he joined at Anna University, Chennai as an Honorary Professor.

Department of Civil Engineering instituted this chair in remembrance of Prof. P. C. Varghese.

## Academic Background:

- » B.E in Civil Engineering (1982) from University of Madras
- » M.E. in Civil Engineering (1984) from the Indian Institute of Sciences Bangalore
- » Ph.D. in Civil Engineering (1989) from the Washington State University

## Research Interests:

- » Open channel flows & Free Surface Flows
- » Sediment Transport Modeling
- » Surface & Subsurface Flow Interaction
- » Pipe flows & Condition Assessment
- » Contaminant Transport Modeling
- » Water Resources Management in Coastal and Deltaic Systems

Dr. B S Murty initially worked in IIT Kanpur and later moved to IIT Madras as a faculty member working as a professor in the Department of Civil Engineering. He has guided more than 8 students for their Ph.D.'s and 30+ students for their master's in Technology. He has published around 38 research article both in Indian and Foreign Journals. He has written around 13 conference publications and 2 book chapters. He has sponsored several research projects like Investigation on pressure wave propagation in bubbly gas-water flows, Numerical modelling of avalanches, Flood and sediment routing in river systems: A mathematical model, Leak detection and isolation in gas pipeline networks and Development of model for clean-up of Cr(VI) contaminated aquifers using bio-remediation for a period of 12 years with a total funding of 48 lakhs. He also did several consultancy projects like Strengthening of the existing water distribution system in Tirupur water supply project, Prakasam Barrage at Vijayawada: Investigations for assessment of the condition of the barrage and recommendations for maintenance, One-dimensional breach analysis on the summer storage tank and safety, etc.

## Chair Occupant



**Prof. B S Murty**

**Department of Civil Engineering**

Below are some of his research projects:

- Sustainable Drainage Systems and Water Management, Department of Science & Technology
- Storm surge impact on estuaries, Department of Science & Technology
- Impact of Navigation on Flow and Sediment Transport at River Confluences: An Experiment Study, Ministry of Shipping
- Urban Modelling: Development of Multi-Sectorial Simulation Lab and Science Based Decision Support Framework to Address Urban Environment Issues, Ministry Of Electronics & Information Technology
- Experimental and Numerical Model Study of Urban Flood, Department of Science & Technology
- Centre for Sustainable Treatment, Reuse and Management for Efficient, Affordable and Synergistic Solutions for Water (WATER-IC for SUTRAM of EASY WATER), Department of Science & Technology

### **Awards and Recognition:**

- » Fellow of Indian Society for Hydraulics
- » S.N. Gupta Memorial Award , Indian Society for Hydraulics, 2010
- » Member of the Editorial Board , ISH Journal of Engineering,
- » Associate Editor, Sadhana, Journal Published by Indian Academy of Science
- » Member, Expert committee, Pollution Control Committee, Pondicherry
- » Member, Expert committee, High Court Chennai
- » Member, Expert committee, APGENCO
- » Member, Expert committee, TWAD Board

### **Chair Launch Photos:**



# GIRIJA AND R MURALIDHARAN INSTITUTE CHAIR

## Introduction:

Girija and R Muralidharan Chair is an institute level chair funded by Mr. R Muralidharan from the batch of 1968.

Prof. B. S. Murty is the first occupant of the Girija and R Muralidharan Institute Chair.

## Chair Occupant



**Prof. B. S. Murty**  
Department of Metallurgical and  
Materials Engineering

**Note:** The chairs below consist of the details of the previous occupants. We are currently in the process of identifying a new occupant for the chairs as the term for the occupants is completed

# SURENDRA AND DOROTHIE SHAH INSTITUTE CHAIR



**Prof. Surendra Shah &  
Prof. Dorothea Shah**

## Introduction:

The Indian Institute of Technology Madras launched the 'Surendra and Dorothea Shah Chair' for research on sustainable construction. The Chair Professorship is being established with support from Surendra P Shah, a global expert in engineering materials, whose work has become a world standard.

Prof. Shah has led the development of new advanced materials, which have become world standards in these fields, and his work revolutionised the way modern concrete is used worldwide.

## Academic Background:

- » B.Tech (1981) from Annamalai University
- » M.S. (1985) from the Indian Institute of Technology Madras
- » Ph.D. (1992) from the Indian Institute of Technology Madras

## Research Interests:

- » Sustainable Building Technology
- » Foam Concrete and Aerated Concrete
- » Lightweight aggregates using Industrial wastes
- » High Performance Masonry

Prof. K. Ramamurthy has over 20 years of education and research experience. With more than 75 Scopus indexed journal papers in the areas of sustainable materials, he has an h-index of 26. He is a member of professional bodies such as ASCE, ASHRAE and a fellow of the International Masonry Society. His research areas include high-performance masonry, lightweight aggregates using industrial wastes, foam concretes, aerated concrete, sustainable building technology, thermal comfort, daylighting, and indoor air quality. He has served the institute at various administrative positions including the positions of GATE Chairman, Dean (Academic Courses), and Head of the Department of Civil Engineering. His research project is for the Ministry of Mines on Use of Overburden Clay as Alternate for Coarse Aggregate.

## Chair Occupant



**Prof. K. Ramamurthy**  
Department of Civil Engineering



### **Awards and Recognitions:**

- » Editor-in-chief – Institution of Engineers-Series A, Springer
- » Associate Editor, ASCE Journal of Material is Civil Engineering
- » Subject editor: Current Science, Indian Academy of Sciences

### **Chair Launch Photos:**



# K. K. BALASUBRAMANIAN INSTITUTE CHAIR



Prof. K K Balasubramanian

## Introduction:

Prof. Kalpattu Kuppusamy Balasubramanian, affectionately known to everyone as Prof. KKB. He joined IIT Madras as a Lecturer and became a professor in 1991. He is a legendary teacher in organic chemistry. He is a Fellow of the Indian National Science Academy and the Indian Academy of Science. He received several honours and awards, namely, the Lifetime Achievement Award of the Chemical Research Society of India, the T. R. Govindachary Award for research in organic chemistry, Humboldt fellowship for several years, to mention a few. He has published extensively in all the fields with more than 180 publications in peer-reviewed national and international journals. The students of Prof. KKB (who proudly call themselves KKBians) have all come together to establish this Chair in his name to honour their ever-loving professor.

## Academic Background:

- » B.Sc. in Chemistry (1979) from Kamaraj University, Madurai
- » M.Sc. in Chemistry (1981) from the Indian Institute of Technology Madras
- » Ph.D. in Organic Chemistry (1985) from the University of Victoria, Canada

## Research Interests:

- » Organic synthesis - synthesis of un-natural organic molecules.
- » Chemistry of D<sub>2</sub> symmetric cyclooctatetraene derivatives
- » Designer molecules to probe pi-pi interactions and hydrogen bonding networks
- » Organic molecules for energy storage, specifically in organic redox flow batteries
- » Photochemistry of highly conjugated acetylenic fluorophores
- » N-Heterocyclic carbene-transition metal complexes and their catalytic activity

Professor S. Sankararaman was an Institute Chair Professor in the Department of Chemistry between September 2017 and June 2023. He is among the most distinguished organic chemists in India and abroad and has guided 19 PhD students for the award of their degrees and has four students currently as a joint guide. In addition, more than 30 M. Sc Students have done their project under his supervision. His research publications cover all forms of peer reviewed publications, namely, books, chapters in monographs, review articles and journal publications. The book entitled “Pericyclic Reactions: A Textbook” by him as the sole author was also reviewed and with a very appreciative Foreword by the Nobel Laureate Professor Roald Hoffmann of Cornell University, a pioneer in the same area.

## Awards and Recognitions:

- » Lewis J. Clark Memorial Fellowship, University of Victoria (for the best academic performance in the Chemistry Department), 1983-1984
- » University of Victoria Special Graduate Fellowship (for the best academic record in the University), 1984-1985
- » INSA (India) - DFG (Germany) International Exchange Fellowship for collaborative research, 1996
- » DAAD (Germany) Fellowship for short - term visit to Germany for collaborative research, 1997
- » Alexander von Humboldt Fellowship for collaborative research, 1998-1999
- » Bronze Medal, Chemical Research Society of India in recognition of contributions in chemistry, 2010
- » Elected as a fellow of the Indian Academy of Sciences (FASc), Bangalore, 2017
- » Elected as a fellow of the Indian National Science Academy (FNA), 2019

## Chair Occupant



Prof. S. Sankararaman  
Department of Chemistry

# V. BALARAMAN INSTITUTE CHAIR



Mr. V Shankar

## Introduction:

V. Balaraman Institute Chair was instituted by Acsys Investments Private Limited and its director Mr. V Shankar in the year 2016 in the Department of Mechanical Engineering.

## Academic Background:

- » B.Tech in Mechanical Engineering (1978) from JNTU Anantapur
- » M.E. in Mechanical Engineering (1980) from the Indian Institute of Sciences Bangalore
- » Ph.D. in Mechanical Engineering (1990) from the Indian Institute of Technology Madras

## Research Interests:

- » Manufacturing Technology
- » Grinding
- » Abrasive Waterjet Machining
- » Sheet metal fabrication
- » Laser Beam Machining
- » PLCs & Robotics
- » Precision Machine Tool development
- » Process modelling
- » Simulation of manufacturing systems

Prof. A N Ramesh Babu has 30+ years of research and academic experience and has published more than 200 papers in various National and International journals. He has also published 5 books in his area of expertise. His research includes the Laser dressing process, Ice bonded abrasive polishing (IBAP) system, Water jet technology, Amada Sheet Metal Research Centre etc. The list of patents and inventions by Prof. Ramesh are listed below.

## Patents:

- Method of designing a high precision machine tool.
- Method for reducing thermal drift of wheel spindle in grinding machine.
- Method of characterizing a machine tool.
- International Patent Classification No. B24B 5/18 dated 20-01-2006 – A Variable Stiffness Regulating Wheel for a Centreless Grinding Machine.
- Indian Patent on “Abrasive Slurry preparation unit for micro abrasive water jet machining applications” was filed (Application no. 4033/CHE/2013 dated 8th Sept. 2014).

## Chair Occupant



Prof. N. Ramesh Babu  
Department of Mechanical  
Engineering

### Inventions:

- Development of laser dressing system for super abrasive grinding wheel dressing on CNC cylindrical grinding machine in collaboration with Central Manufacturing Technology Institute, Bangalore (Technology Transfer, 2012)
- Ice bonded abrasive polishing (IBAP) system for ultrafine polishing of materials (Invention 2011)

### Awards and Recognitions:

- » **Member, PAC**, International Division, Dept. of Science and Technology since 2018
- » **Member, Editorial Board**, Surface Topography: Metrology and Properties Journal since 2018
- » **Invited member and Panellist** at the session on Automation and Robotics in Manufacturing at International Trade Fair - INNOPROM 2016, Ekaterinburg, Russia during July 10-13, 2016 – India is a Partner Country
- » **Member, Editorial Board**, International Journal of Additive and Subtractive Materials Manufacturing, Inderscience Publishers since 2015
- » **IIM Binani Gold Medal** for the Best paper published in Transactions of Indian Institute of Metals, Aug.-Oct. 2012.
- » **Member, Editorial Board**, Surface Topography: Metrology and Properties Journal since 2018
- » **Member, DRDL Research Council**, DRDO since 2017
- » **Member, Project Assessment and Review Committee**, Advanced Manufacturing panel on GTMAP programme, AR & DB, DRDO since 2016
- » **Invited member of the delegation** participated in “**UK-India workshop on Distributed Manufacturing**” at London during June 16-18, 2014 organised by Indian National Academy of Engineers, The Royal Academy of Engineering London and British Deputy High Commission Mumbai and also attended “**BIS Manufacturing Summit 2014**” at Liverpool on June 19, 2014
- » **DAAD Fellow** (Oct.1989 – May 1990) Ruhr Univ. Bochum, Germany.
- » **TEES IMS Visiting Fellow**
- » **Visiting Scientist Volkswagen Stiftung** (1month in 1996) University of Erlangen - Nurnberg, Germany.
- » **Visiting Scientist DST-DAAD** (1999 (4 weeks) 2000 (3 weeks) 2001 (3 weeks)) University of Hannover, Hannover, Germany.
- » **Visiting Scientist Volkswagen Stiftung** (2005) University of Hannover, Hannover, Germany.

### Chair Launch Photos:



**List of unoccupied and chairs whose threshold is not met:**

<b>S.No</b>	<b>Chair Name</b>	<b>Remarks</b>
1.	Prof. C. Ganapathy Institute Chair	Vacant
2.	Ace Micromatic Institute Chair	Vacant
3.	C. P. Vendhan Institute Chair	Vacant
4.	Kripalu Chair for Transformational Leadership	Vacant
5.	Perry L Blackshear Institute Chair	Vacant
6.	Founding Professors Institute Chair	Threshold not met
7.	P. T. Manoharan Institute Chair	Threshold not met
8.	V. Radhakrishnan Institute Chair	Threshold not met
9.	M. A. Veluswami Institute Chair	Threshold not met
10.	V. Mahadevan Institute Chair	Threshold not met
11.	K. A. Padmanabhan Institute Chair	Threshold not met



THANK  
YOU FOR  
YOUR  
SUPPORT!

***We would like to take this opportunity to express our heartfelt gratitude to all those who made benevolent contributions towards the growth and development of IIT Madras***



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February 2024