



# IIT MADRAS

## FAST FACTS 2015



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# The Indian Institute of Technology Madras

## Mission

- To create and sustain a community of learning in which students acquire knowledge and learn to apply it professionally with due consideration for ethical, ecological, and economic issues
- To pursue research and disseminate research findings
- To provide knowledge-based technological services to satisfy the needs of society and the industry
- To help in building national capabilities in science, technology, humanities, management, education and research

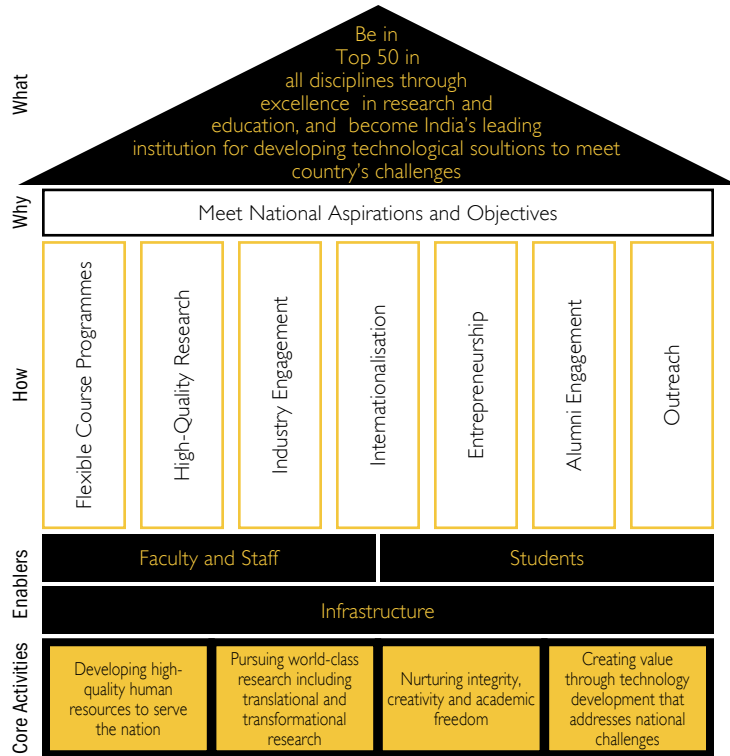
## Vision

To be an academic institution in dynamic equilibrium with its social ecological and economic environment striving continuously for excellence in education, research and technological service to the nation.





# Strategic Plan 2014-2020



## About IITM

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In July 1956, the Indian Prime Minister Jawaharlal Nehru, West German President Theodor Heuss and German Chancellor Konrad Adenauer issued a joint communiqué announcing the set up of a 'technical teaching institution' in India, and Madras, now Chennai, was chosen as the location and home for a new Indian Institute of Technology (IIT). The Madras State Government offered an area of about 632 acres with an abundance of woods, lakes, and land.

On 7th August 1958, an Indo-German agreement was signed to establish IIT Madras (IITM). Twenty German professors, specialists, and five foremen were deputed to this task. German scientific and technical equipment, including training in specialised fields for 20 Indian teachers at German technical universities, were also arranged.

The Government of India commenced activities at the Institute from the academic year 1959–1960. On 20th July 1959, the first batch of students, 120 in number, were admitted, and IIT Madras was formally inaugurated on 31st July.

Chennai, home of IIT Madras, is the fourth largest city of India and the state capital of Tamil Nadu, a southern state in the country. The city, about 350 years old (1639), was formerly known as Madras and later renamed Chennai, which evolved from an old name 'Chennapattanam'. Chennai is a coastal city and boasts the second largest beach in the world. The climate is generally hot and humid. In summer (May–July), the temperature reaches up to 42° C (107° F), while in winter (Dec–Feb) it is about 18° C (64° F). The monsoon season starts in September and lasts till November.

IIT Madras has over the years grown to become a comprehensive centre for technological education and basic and applied research in India, with nearly 100 laboratories organized in a unique pattern of functioning, a faculty of international repute, a brilliant student community, excellent technical support staff, and an effective

administration—all of which contribute to its pre-eminent status. IIT Madras is recognized world-wide for its intellectual leadership and on-going innovation across every major discipline of engineering and pure science. IITM also boasts a global alumni diaspora second to none in terms of its accomplishments.

IITM is a residential institute with more than 550 faculty, 9000 students, and 576 administrative and support staff. Students from 18 countries are enrolled here. The campus is self-contained and is located on a beautiful wooded area of about 250 hectares. It is home to approximately 300 species of trees and plants with quite a large number of native wild ones, which are unique to the tropical, dry, evergreen vegetation. The faunal diversity includes monkeys, blackbuck, spotted deer, black naped hare, and monitor lizard among others.

The Institute has 16 academic departments and several advanced interdisciplinary research centres.

# The IITM Tradition of Philanthropy

## Major alumni donors



**Kris Gopalakrishnan**

1977/MSc/Phy & 1979/MT/CS



**Gururaj Deshpande &  
Jaishree Deshpande**

1973/BT/EE & 1975/MSc/PHY



**Prem Watsa**

1971/BT/CH



**Lalit Mahajan**

1968/BT/CH



**Sunderam Swaminathan**

1969/BT/ME



**Jagadeesh Moodera**

1978/PHD/PHY



**V. Shankar**

1981/BT/ME



**Krishna Chivukula**

1970/MT/AE



**Shrikumar Suryanarayan**

1982/BT/CH



**T T Jagannathan**

1970/BT/ME

## Major non-alumni contributors



**Mehta Family  
Foundation**



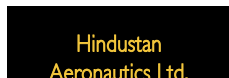
**Indian Additives Ltd.**



**Technip India Ltd.**



**Arcent Technologies**



**Hindustan  
Aeronautics Ltd.**



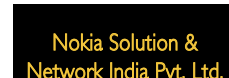
**Wellcome Trust**



**Tamil Nadu Newsprint  
& Papers Ltd.**



**J Mitra & Co. Pvt. Ltd.**



**Nokia Solution &  
Network India Pvt. Ltd.**

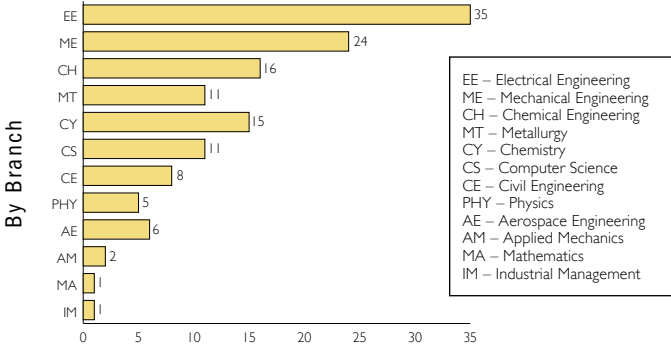
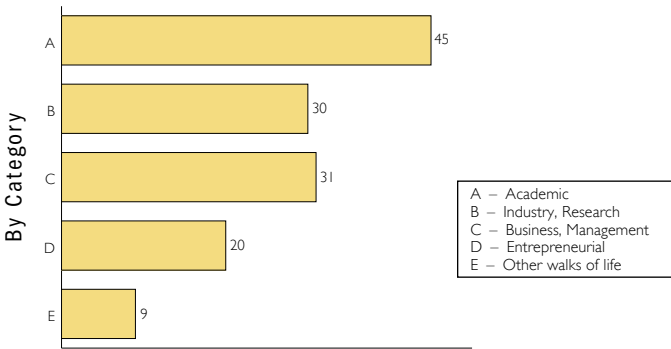
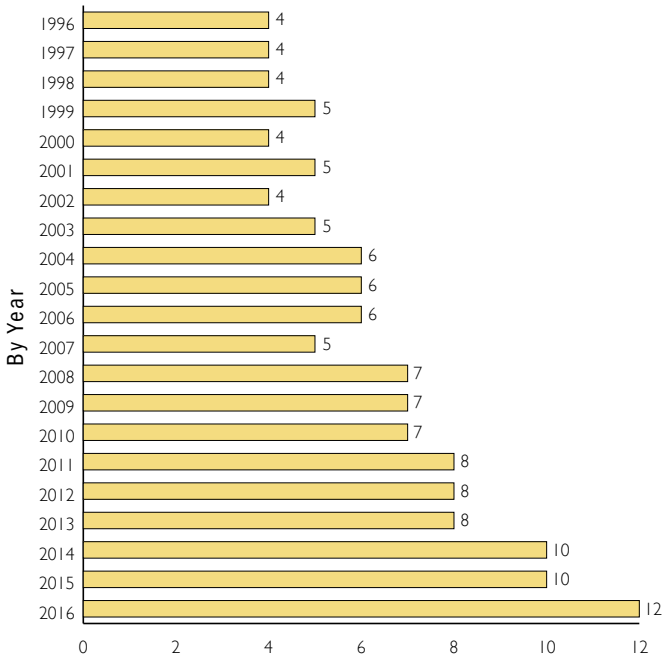


**Titan Co. Ltd.**



**Cholamandalam  
Investments Ltd.**

Distinguished Alumni Awards (Total = 135)



## Grants and Fellowships

### Scholarships

64 Foundation Freeship Scholarship	Moganti Srinivas Scholarship Fund
Smt. Hattiangadi Manorama Bai Scholarship	Kris Venkat Scholarship for Management Studies
Girish Reddy Scholarship	Shankaraiah and Saradha Scholarships
Sriram Srinivasan Scholarship	Premila Ponnappa Endowment
Student Distress Fund Endowment in the name of Shoma and Prasad Setty	Lakshmi Raman Memorial M.Sc Chemistry Scholarship
PhD 6 Months Fellowship Endowment in the name of Shoma and Prasad Setty	IIT Alumni Association UK Fund Endowment
Prakash Narayan Scholarship for Mathematics Department	Kalidas Madhavpeddi Scholarship
IIT Madras Alumni Funded Scholarships	B. Jayant Baliga Scholarship
Sidvim Scholarship	Lakshmi Raman Memorial M.Sc Mathematics Scholarship
Lakshmi Raman Memorial M.Sc Physics Scholarship	SarasVidya Scholarship

### Awards/Prizes

Institute Day Prizes (93 Nos)	Keshav - Rangnath Excellence in Research Award
Convocation Day Prizes (88 Nos)	
Alumni Day Prizes (29 Nos)	Endowment Award/Prize in the Name of Prof. R. Krishnamurthy in Department of Mechanical Engineering
Young Faculty Recognition Award	Valadi Sarma Balaji & Savithri Balaji Scholarship
Subramanian Rajalakshmi Indira (S.R.I) Endowment Prize	Chinmai Deodhar Prize
Bhagyalakshmi Ayyangar Award	Endowment Award in Electrical Engineering Department
Srimathi Marti Annapurna Gurunath Award for Excellence in Teaching	
Gandhi Hazare Award	

## Chairs and Endowments

### Chair Professorships

Prof. Mahabala Distinguished Chair in Computational Brain Research Dept. CS Instituted in 2014	N.R. Narayana Murthy Distinguished Chair in Computational Brain Research Dept. CS Instituted in 2015	Chair in Bio-Sciences – Mehta Foundation Dept. BT Instituted in 2007
HAL Chair (Hindustan Aeronautics Ltd) Dept. AE Instituted in 2015	MoLE Chair (Ministry of Labour & Employment) Dept. ED Instituted in 2014	Qual Comm Chair Dept. EE Instituted in 2006
Analog Devices Chair Dept. EE Instituted in 2001	Gopalakrishnan Chair Dept. CS Instituted in 1999	Dr. Virubhaksha Reddy Chair (Fiber Optics) Dept. EE Instituted in 2000
N.T. Alexander Chair Dept. EE Instituted in 2000	Chevron Chair Dept. CH Instituted in 2008	TTK Chair Dept. MS Instituted in 1999
T.N. Subba Rao & Brigade Group Chair Dept. CE Instituted in 2009	Perry L. Blackshear Chair in Biomedical Engineering Dept. BT Instituted in 2014	Short-Term Chair in Dept. of Management Studies Dept. MS Instituted in 2014
Henry Ford Chair Dept. ME Instituted in 1998	IPR Chair (MHRD Grant) Dept. IC&SR Instituted in 2006	Arcot Ramachandran Chair Dept. ME Instituted in 1993
1984 Batch Contributions for Institute Chair Professorship Dept. – Instituted in 2015	Class of 1981 Chair in ME Dept. ME Instituted in 2015	3 <sup>rd</sup> Distinguished Chair in Computational Brain Research Dept. EE Instituted in 2015



## Institute Chair Professorship

Perry L Blackshear Chair in Biomedical Engineering
Dept. BT
Prakash Keshaviah [1967/BT/ME]

Class of 1981 Chair in ME
Dept. ME
Asys Investments Private Limited (Shankar V [1981/BT/ME])

Professor Richard Karp
Dept. CS
Prabhakar Raghavan [1981/BT/EE]

RAGS Family Foundation Chair in Management Studies
Dept. MS
Sridhar Tayur [1986/BT/ME]

Prof. M.S. Ananth Institute Chair
Dept. CH
Ashok & Kamala Krishna [1974/BT/CH]

Girija & R. Muralidharan Institute Chair
In one of the subjects where the need is the greatest
R. Muralidharan [1968/BT/EE]

Qualcomm Chair
for education & research in EE department with special reference to the wireless communication technology
Qualcomm [Non Alumnus]

Class of '84 Institute Chair
In one of the subjects where the need is the greatest
1984 batch alumni [1984 batch]

As on February 29, 2016

## Endowments



## Campus Infrastructure



## Facts and Figures

### Faculty

		Faculty in position	
S. No.	Department / Centre	Faculty	Post Docs
I. Departments:			
1.	Aerospace Engg (AE)	25	1
2.	Applied Mechanics (AM)	24	
3.	Biotechnology (BT)	30	10
4.	Chemical Engg (CH)	27	2
5.	Chemistry (CY)	33	7
6.	Civil Engg (CE)	51	
7.	Computer Science & Engg (CSE)	28	
8.	Electrical Engg (EE)	58	4
9.	Engineering Design (ED)	14	
10.	Humanities & Social Sciences (HSS)	34	2
11.	Management Studies (MS)	24	2
12.	Mathematics (MA)	33	1
13.	Mechanical Engg (ME)	61	1
14.	Metallurgical & Materials Engg (MM)	26	2
15.	Ocean Engg (OE)	21	
16.	Physics (PHY)	46	6
II. Centres:			
17.	SAIF (DST)	1	
18.	MSRC	2	
19.	CEC	1	
Total (I + II)		539	38

### Visiting and Guest Faculty

Visiting Faculty	Guest Faculty	Emeritus
20	81	4

### Administrative and Technical Staff

Administrative Staff	Technical Staff
348	228

### Students on Roll

S.No.	Programme	No. of students on roll
1.	B.Tech.	1968
2.	Dual Degree	1992
3.	M.Tech.	1000
4.	PG Diploma - VLM	40
5.	M.B.A.	124
6.	M.Sc.	297
7.	M.A.	220
8.	M.S.	878
9.	Ph.D.	2410
<b>Total</b>		<b>8929</b>
<i>Preparatory Course</i>		17
<i>Foreign Nationals</i>		93
<b>Grand Total</b>		<b>9039</b>

As on September 30, 2015

# Research at IITM

IITM has over 550 academic staffs and 4500 post-graduate students and is internationally renowned for the quality and diversity of its research. The faculty members of Engineering, Science, Humanities and Social Sciences, and Management departments, along with their scholars, are involved in active research in frontier areas, publishing in acclaimed international and national journals and obtaining patents.

Our faculty also undertake several application-oriented industrial consultancy projects with industries in India and abroad, as well as collaborative research projects with foreign universities. Undergraduate and post-graduate students have the opportunity to participate in these projects.

MS Scholars	PhD Scholars
878	2410




\*

Upgradation from

MTech to PhD	MSc to PhD	MS to PhD
51	38	221

\*

## Research Publications (2014-15) \*\*

Refereed International Journals	Refereed National Journals	International Conferences	National Conferences
 1089 Papers	 105 Papers	 533 Research Papers	 153 Research Papers

\* As on December 31, 2015

\*\* Research publications by faculty and research scholars

# Innovation at IITM

## Facilitating The Creative Spirit

The alumni-sponsored Centre for Innovation (CFI) is a ‘Student Lab’ that provides a forum for the creative output of the budding engineers of IIT Madras. It provides students a platform for bringing form to their ideas. A great workspace, a comprehensive inventory, and ample guidance from faculty and seniors make CFI an asset for the students. CFI is a place where a student can “walk in with an idea and walk out with a product”.

To strengthen the innovation ecosystem within the campus, CFI ensures that a pipeline of potential incubatees is created through a programme called “Nirmaan”, which seeks out students with ideas that have commercial potential and puts them through a one-year programme to refine the ideas, develop products, and formulate business plans.

## Vision

“To promote informal learning and foster innovation and invention in technology, with a focus on technologies aimed at contributing positively to the environment and to the society”

## Research Park

The IIT Madras Research Park focuses not just on incubation efforts but also on propelling successful innovation in established R&D-focused companies. It connects industry personnel with the “innovation inputs” of knowledge, and acts as a catalyst for collaborative and disruptive development of high-tech products.

IIT Madras Research Park represents the Golden Triad – the coming together of Corporate R&D, the faculty, and students of IIT Madras, increasing the probability of successful co-innovation.

## Entrepreneurship at IITM

IITM has been engaged in actively promoting entrepreneurship for over 30 years. The ecosystem has been strengthened by the establishment of an E-Cell (also called C-Tides), the Rural Technology Business Incubator, and the implementation of a Masters programme in Entrepreneurship. The IIT Madras Incubation Cell (IITMIC) created in 2012 has given further impetus to entrepreneurship and spawned exponential growth in this area.

Currently 89 companies have been incubated at IITMIC, a majority of which are developing innovative technologies in core engineering areas. The alumni-led IITM Entrepreneurship Forum helps in raising grants, equity, and convertible loans for the incubated start-ups.

The Center for Social Innovation and Entrepreneurship (CSIE) at IIT Madras was founded in August 2010 with a focus on teaching and research related to social enterprise in India. It aims to bring together the innovation and entrepreneurship aspects of IITM by promoting knowledge and understanding that will be relevant to solving the socio-economic problems in the country.

CSIE seeks to distinguish itself through its focus:

- on delivering social enterprise knowledge primarily to engineering students, with the aim of developing their ability to develop and deliver technology solutions that create social impact
- on academic research that will seek to address problems exclusively within the Indian context

### Mission

To build an environment that will facilitate the creation of social enterprise knowledge through research and empower students to apply their entrepreneurship abilities to develop solutions for greater social impact through academia.

## Industrial Relations

In keeping with the objectives of the Strategic Plan 2020 and with a view to strengthening relations with Industry so as to foster applied and sponsored research projects, the Office of Industry Relations under Industrial Consultancy and Sponsored Research, was set up this year.

The Office aims to undertake multi-disciplinary work across departments to create prototypes that demonstrate the application of research and can provide an impetus for the industry partner to test commercialization possibilities. Some early wins have been accomplished under the category of solar energy.

The Industry Relation Office also spearheads the “Industry Connect” programme which reaches out to a wide range of industries. Under this initiative, faculty visit research and manufacturing locations of their industry partners and exchange ideas towards identifying research themes which can lead to future projects.

Financial Year	Sponsored Research Projects value ₹ in Crores	Consultancy Assignments value ₹ in Crores
2015–2016 (Upto January)	₹134.91	₹50.65
2014–2015	₹92.78	₹53.21
2013–2014	₹182.41	₹44.72
2012–2013	₹77.13	₹38.48
2011–2012	₹142.31	₹32.02



## CSR at IITM

Business houses from around the country, like Titan Co. Ltd. and Cholamandalam Investments and Finance Co. Ltd., have come forward as partners to support socially relevant projects and incubators at IIT Madras, under their Corporate Social Responsibility (CSR) agenda.

Indian Additives Ltd. supports a project in water and waste management being carried out by a team of Professors and students.

TTK Prestige supports the “TTK Center for Rehabilitation Research and Device Development (R2D2)”. IITM is involved in research related to human movement, the influence of orthotic and prosthetic devices on human movement, and the design and development of mechanisms, products, and assistive devices for people with impairments. Additional support has been provided by the Wellcome Trust for the development of a standing wheelchair.

Aricent Technologies partners with the IITM National Programme on Technology Enhanced Learning (NPTEL) to support creation of free online course material, transcription of the courses into vernacular, and sponsorship of examination fees for deserving candidates.

Technip supports two projects—the first is an innovative teaching method which trains an 8th standard student to teach a 4th standard student; the second is a waste management project.

Tamil Nadu Newsprint and Papers Limited supports four projects:

- Creating prototype of a footwear device for gait analysis and rehabilitation
- Enabling proficiency in English among underprivileged and rural school children
- Building capacity for farmer producer companies for better management practices and sustainable growth
- Empowering and developing women entrepreneurs through new opportunities

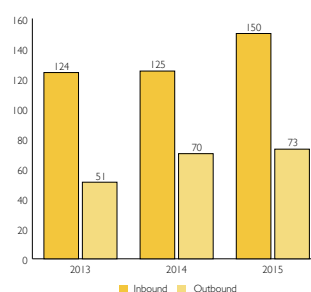
## International Relations

IITM's vision is to elevate the Institute's global engagement to world-class standards, leveraging its highly-regarded alumni as “catalysts” in the process. The mission is to develop strong and sustainable international partnerships with research laboratories, academic institutions, industry, and entrepreneurs in order to meet the aspirations of IITM's faculty & student communities.

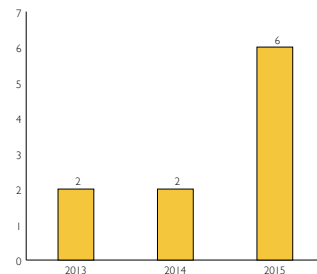
### Strategic objectives

- Faculty exchanges where research interests converge
- Research scholar exchanges where faculty collaborations are active
- Joint degree programs where faculty & student collaborations are strong & sustainable
- “Study Abroad” programs
- MOUs with like-minded institutes

Inbound & Outbound Students



Joint Doctoral Programmes



## Members of Board of Governors

Dr. Pawan Goenka  
Chairman & Executive Director  
Mahindra & Mahindra

Prof. Bhaskar Ramamurthi  
Director  
Indian Institute of Technology Madras

### Council Nominees

Prof. Dipankar Banerjee  
Department of Materials Engineering  
Indian Institute of Science

Dr. P. Anandan  
Managing Director  
Microsoft Research Lab India Private Ltd.

Mr. Kris S. Gopalakrishnan  
Retired CEO & MD  
Infosys Technology Ltd.

Dr. B.N. Suresh  
Vikram Sarabhai Distinguished Professor  
Indian Space Research Organization

### Senate Nominees

Prof. S.H. Kulkarni  
Department of Mathematics  
Indian Institute of Technology Madras

Prof. V. Sundar  
Department of Ocean Engineering  
Indian Institute of Technology Madras

### State Government Nominees

Dr. K. Vijayakumar  
Director  
Directorate of Technical Education  
Government of Kerala

Shri J. Ashok Kumar, IAS  
Collector & Development Commissioner  
Administration of the UT of Lakshadweep

Smt. S. Madhumathi, IAS  
Principal Secretary  
Commissioner of Technical Education  
Directorate of Technical Education  
Government of Tamil Nadu

Dr. S. Sundaravadivelu  
Special Secretary to Government (DP&AR)  
Puducherry

Dr. Utpal Sharma  
Principal (BRAIT) Cum Special Secretary (IT)  
Port Blair

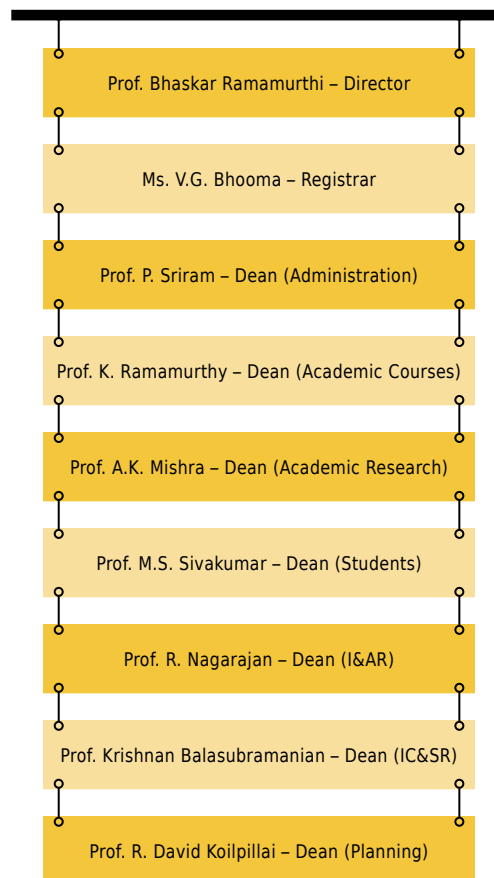
### Secretary

Ms. V.G. Bhooma, IRPS  
Registrar  
Indian Institute of Technology Madras

### Invitee

Prof. P. Sriram  
Dean (Administration)  
Indian Institute of Technology Madras

## The IITM Directorate / Dean Council







Office of International & Alumni Relations

Room No 25, 2nd Floor, IC&SR Building

IIT Madras, Chennai – 600036

Phone: +91-44-22578390

Fax: +91-44-22570545

E-Mail: [oaal@iitm.ac.in](mailto:oaal@iitm.ac.in)



