



Mr. KUMAR SWAMINATHAN
ANNUAL REPORT 2022

MESSAGE FROM DIRECTOR

Prof. **KAMAKOTI VEEZHINATHAN**
Director, IITM



IIT Madras, in the 63 glorious years of its journey, has been scaling new heights of success and excellence. This is reflected in many ways including in its exemplary performance for seven years in a row, on the National Institute Ranking Framework released by the Ministry of Education, Government of India. Chosen as one of the Institutes of Excellence, IIT Madras has established a number of Research Initiatives in various fields of contemporary relevance showcasing the commitment towards fostering world-class research. In this continuing pursuit of academic and research excellence, we will continue to embrace innovative practices while promoting efficient, and effective governance through AI-driven hyper-automation.

The outpouring of generous support we have received in the past year from well-wishers such as yourself has been humbling. On behalf of the Institute, I offer you our deepest gratitude for keeping IIT Madras strong. I am confident that we will continue to make many positive strides and leaps forward with renewed vigour to achieve the goals that we have set out for us. Together, with your support, we are confident of creating an IIT Madras with a diverse group of faculty and staff pursuing nationally relevant and globally recognized research. If this past year has taught us anything, it's that it takes a dedicated and committed community to keep us moving forward - and far beyond. Thank you!

MESSAGE FROM DEAN

Prof. **MAHESH PANCHAGNULA**
Dean, Alumni & Corporate Relations, IITM



HEARTFELT GRATITUDE FROM IIT MADRAS.

As we aim to provide sustainable solutions to global societal problems, it is the support of alumni such as yourself that makes it practically possible. Positive and productive engagement with these challenging problems are rendered feasible through altruistic and effective contributions from alumni.

We thank you for your generous and thoughtful contributions and present to you a report on the impact of your giving. We seek your help and support in our future endeavours, as we attempt to take IIT Madras to the global stage.

CAUSES SUPPORTED



1981 BATCH PROJECT - MODERNIZATION OF CFI



ALUMNI COMMUNITY INSTITUTE CHAIR



KEEP IT FLOWING PROJECT – GODAVARI HOSTEL



UPGRADATION OF MEDICAL INFRASTRUCTURE



IIT MADRAS - COVID RELIEF FOR INDIA



SWAMINATHAN FAMILY - MERIT CUM MEANS SCHOLARSHIP



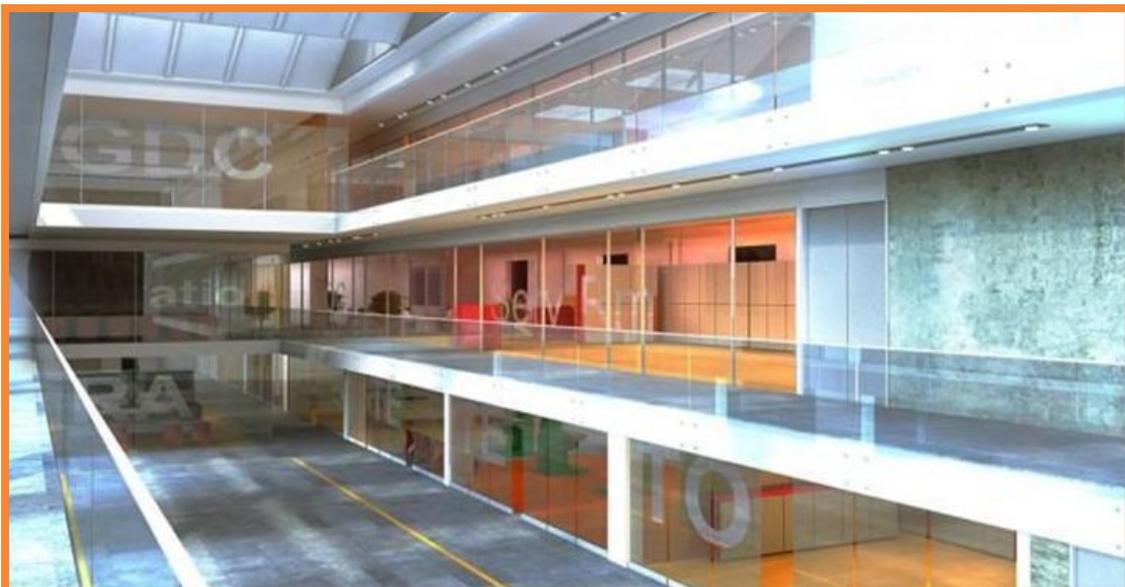
MODERNIZATION OF CFI

The Centre for Innovation (CFI) is a 'Students Lab' at IIT Madras set up in 2008 with support of 1981 batch during their silver reunion. It provides students the necessary platform for realizing their ideas. A great workspace, a comprehensive inventory, ample guidance from faculty & senior-students.

CFI is about 10 years old and needs modernization to keep pace with the evolving opportunities.

About the Modernization of CFI:

- ▶ The new structure will have 3 floors (Ground + 2 Floors)
- ▶ About 30,000 sq. ft. of modern workspace with cutting edge technology and support facilities.
- ▶ The existing structure has been demolished and construction work is under progress.
- ▶ The foundation stone laying ceremony was held in March 2021.



INITIAL STAGES



The current scenario:

1. Dome structural fabrication works have been completed. Fixing aluminium sections on dome base frame is in progress.
2. Internal opaque partition works are in progress. Fixing of laminates on the opaque partition has commenced.
3. Terrace heat reflective tile fixing work is in progress.
4. Temporary lightweight structure at terrace floor works are in progress. Truss fabrication is completed and the erection will commence soon.

5. Architectural wall putty (resembling natural concrete finish) work is ongoing and 50% of the work has been completed.
6. Structural glazing work is in progress – around 40 % of the work has been completed.
7. Light and fan fixing work has been completed for two floors. Lift erection is in progress. HVAC ducting has been done for two floors.



ALUMNI COMMUNITY INSTITUTE CHAIR

We have received excellent support towards Alumni Community Chair Professorship. We remain very thankful for the generous contributions by various Alumni and Non- Alumni Donors. This report encapsulates and foregrounds the initiatives that have been taken up in conjunction with the Chair Professorship by Prof. R. Nagarajan.

About Prof. R. Nagarajan

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. His appointment started on January 1, 2022, and runs through July 31, 2022.



During this stay, he has conducted a Seminar Series on "Contamination Control in High Purity Manufacturing" for Purdue faculty and students. He has presented a paper at WOCA 2022 (World of Coal Ash) conference at Covington, Kentucky, and organized a Panel at the Deshpande Symposium in Cleveland, Ohio.

He is currently writing a book titled "Process Intensification- Faster, Better, Cheaper", commissioned by CRC Press. He has been a visible face of IITM, with the alumni and corporate community for about a decade and elevated the institution's presence in the minds of alumni to great heights.

He obtained his B.Tech. in Chemical Engineering in 1981 from IIT Madras, and a Ph.D. in the same field from Yale University. He worked with IBM Storage Systems Development Laboratory in San Jose, and he joined IITM in 2004.

From Feb 2009 - Aug 2012, he served as Advisor, Office of Alumni Affairs at IIT Madras, and From Sep 2012-Sep 2018, as **Institute's first-ever Dean of International & Alumni Relations**.

He has personally sponsored **10 student Awards**. He has established **17 joint doctorate degree programs with leading global Universities**. During his tenure as Dean, I & AR, he has brought corporate professionalism to IITM with his approach to work and leadership. His passion for writing pop fiction is well known, and his extempore speeches have been well appreciated by the audience.

As a fitting recognition of his various academic and administrative contributions, the Institute has designated him as **Chair Professor in the Department of Chemical Engineering**.

Achievements

- ▶ 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.
- ▶ He has won several awards, including **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, etc.

Impact

- ▶ Four high-impact journal papers published, and one patent application filed in the past year.

Teaching Initiatives

- ▶ “Chemical Engineering 101” for first-year UG students.
- ▶ “Building towards a career in the chemical industry” for graduate students
- ▶ Elective courses on: Particle Characterization, Chemical Vapor Deposition, Transport Phenomena

Department Responsibilities

- ▶ Head of Department since Oct 2018.
- ▶ Formed “Department Advisory Board” with industry & alumni representatives.
- ▶ Drafted Vision & Roadmap 2030 for the Department.

Institute Responsibilities

- ▶ Co-wrote proposal for “Institution of Eminence”, a status awarded in 2019.
- ▶ Involved in rankings – related activities.

Alumni Connects

Trustee on Board of Alumni Charitable Trust.

Director on Board of IITM Canada Foundation.

Chair, Travel Grant Committee, Office of ACR

Faculty-in-charge of alumni-related Centres

CSIE (Centre for Social Innovation & Entrepreneurship)



IITM Heritage Centre



IITM Archive (Co-Principal Investigator)



About the Research

Research Priorities

- ▶ Coal beneficiation using the ultra-sonic fields
- ▶ Nano emulsions of plant oils used for cancer treatment
- ▶ Dust-repellent surfaces and coatings for building exteriors

▶ **Doctoral Research:**

1. One Ph. D. thesis defended in Jan 2020 (Dr. Srivalli Hariharan).

“A comparative study to understand the effect of solvents, particle size and their role in the de-alkalization of coal was carried out”.

2. Ph.D.'s currently co-Guided with Prof. T Pradeep on an industry-relevant project, and one External Ph.D. from CSIR under solo Guidance.

▶ **Post-Doctoral Research:**

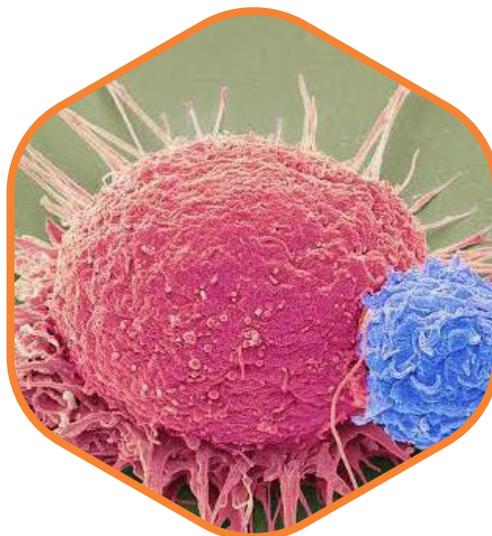
Three post-doctoral Fellows being mentored currently.



Dr. Srivalli Hariharan



They have developed a nano-scale emulsion of clove bud essential oil. Using a technique with potent anticancer and antibacterial activity.





Prof. R. Nagarajan and his team of scientists, Dr. M. Joyce Nirmala, Mrs. Latha Durai and Mr. Vineet Gopakumar developed formulation using clove oil to combat cancer. To view the video "IIT Madras researchers mark the dawn of a new age of anticancer medicine".

To know more...



"We would like to validate our findings through in-vivo animal models. We also plan to further check the formulation for other types of cancers and microorganisms. India is known world-wide for its medicinal spices, be it turmeric for its anti-septic properties, or pepper for its anti-bacterial properties and so on. There are 63 different varieties of spices available. We therefore have many unexplored spices to investigate".



Dr. Joyce Nirmala

To know more about the Oil-Based Cancer Therapy work



KEEP IT FLOWING PROJECT GODAVARI HOSTEL

The following activities were carried out as part of the renovation work being executed at Godavari Hostel.

1. Facelifting of Corridors
 2. Facelifting of Restrooms
 3. External repair works
1. Facelifting of Corridors: As part of carrying out this activity the existing concrete floor was broken using drilling equipment. The concrete flooring was replaced with granite flooring.

BREAKING THE CONCRETE FLOORING



LAYING GRANITE STONES



2. Facelifting Restrooms: The existing setup was dismantled and the restrooms have been completely remodelled.

BEFORE DISMANTLING WORK



DISMANTLING WORK IN PROGRESS



BRICK WORK AND PLASTERING



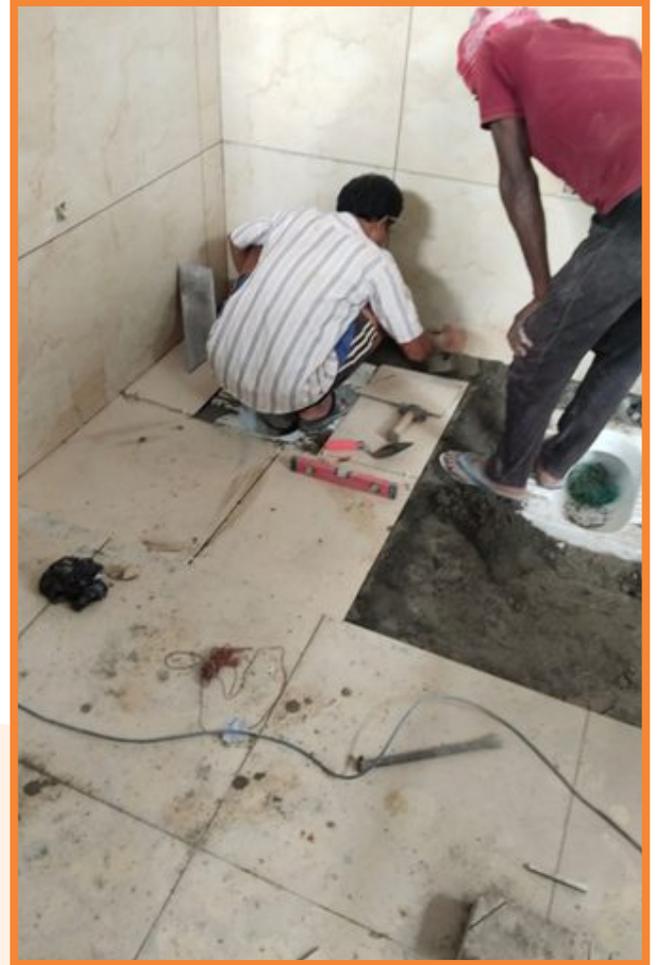
INTERNAL PLUMBING WORK



WATERPROOFING FLOOR



TILING WORK



3. External Repair works: Minor works such as plastering, repairing roof tiling, repairing of damaged parapet walls etc will also be taken up.

The work is estimated to be completed by the second week of December 2022.



UPGRADATION OF MEDICAL INFRASTRUCTURE AT IIT MADRAS

The IIT Madras Hospital which was established in 1969, has ensured the safe health of the institute's employees, students, and campus residents. The hospital has full time doctors as well as part time consultants, nurse helpers, and other administrative staff. The hospital has been accredited with ISO 9001:2015 acknowledging clinical excellence, providing holistic care, and ensuring evidence-based medicine.

The recent turn of events over the last 2 years has only made us realize the importance of having the well-equipped hospitals to combat any situation.

The following causes were identified initially:

- ▶ Construction of additional floor above front wing of Institute Hospital
- ▶ Face lifting and painting work on the existing floor
- ▶ Re-locating of Pharmacy and Testing labs
- ▶ An improved & well-equipped emergency room, casualty & ambulance service for quick response in case of emergencies - Expanded pharmacy with an adequate inventory of preventive & corrective medication
- ▶ Upgradation of the gynecology department & the physiotherapy department for the benefit of patients in need
- ▶ Advanced diagnostic facilities
- ▶ 24/7 Covid care – procure oxygen concentrators, sanitization stations in various parts of the campus, ventilators, PPE, and trained medical personals

Details of the work carried out so far:

▶ **Front wing - First floor extension**

Brick wall structure with Reinforced concrete roof slab

Floor & Wall tiles





► **Ground floor – Front Wing**

New corridor along front side of front wing was constructed

New ramp was built at the entrance.

Modification of internal partitions to accommodate the facilitates.

Replacing the floor and wall tiles

Painting work

Granite top tables was setup.

Completed toilet renovation works & PWD toilet provision.

Facilities created to accommodate Pharmacy, Testing Laboratory, Fever Clinic, Fever Ward and Medical Record Rooms at Ground Floor in Front wing.



PHARMACY (Ground Floor - Front Wing)

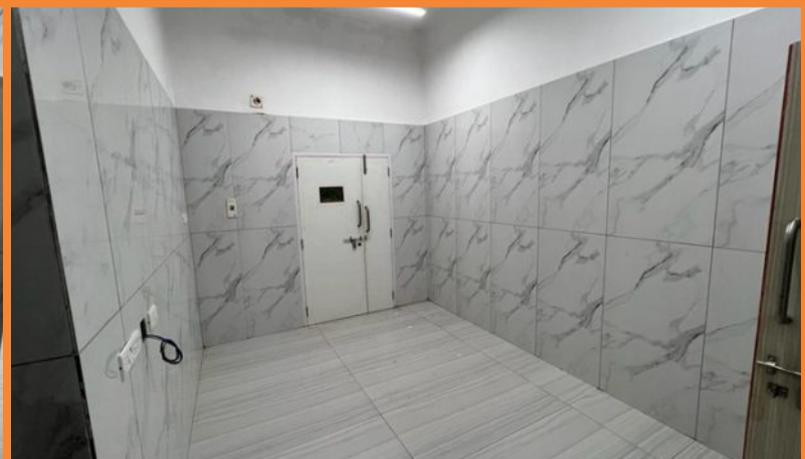
Two rooms for Distribution & One Store room were constructed



TESTING LABORATORY (Ground Floor - Front Wing)

SAMPLING ROOM

CONSULTATION ROOM



FEVER CLINIC
(Ground Floor - Front Wing)

EXAMINATION ROOM



CONSULTATION ROOM



FEVER WARD
(Ground Floor - Front Wing)



RECORD ROOMS – 2 NOS.
(Ground Floor - Front Wing)



REST ROOMS

(Ground Floor - Front Wing)



GROUND FLOOR – FRONT WING – CORRIDOR



DEDICATED ENTRANCE FOR FEVER CLINIC, EXAMINATION LAB & PHARMACY

(Ground Floor - Front Wing)

NEWLY CONSTRUCTED RAMP

FRONT CORRIDOR



Proposed works:

- ▶ Dental Clinic, Eye Clinic, Optical Lab, Consultation room, waiting area and toilet have been proposed in Front wing First Floor.
- ▶ Proposed construction in Ground Floor:
 - Construction of Lift
 - Staircase
 - Chief Medical Officer room
 - Conference Room &
 - Toilet Block
 - Face Lifting work of existing floor – replacing of wall and floor tiles, painting and other related civil works.
- ▶ The equipment to improve the diagnostic facilities at the Hospital is currently under review and will be finalized by the Hospital Purchasing Committee.

First Floor construction work is in progress. Lift & other construction work at ground floor will commence from Feb – 2023 once the existing facilities at Ground floor are shifted to First Floor.

COVID-19 RELIEF FUND

RESCUE TO Ph.D. SCHOLARS DURING COVID 19

During the pandemic situation, the Ph.D. scholars were unable to access labs to do their research hence there was a delay in their course duration. Some students did not receive any stipend during the uncertain situation. This Covid-19 relief fund came as a rescue to more than 150 Ph.D. scholars to pursue their research without any financial constraints. A few gratitude notes from the scholars have been shared here.

"I wish to thank all the donors from the bottom of my heart. The relief provided helped me look after my family during that nightmare phase and thereby focus on my research more."

- Ajay A P



"I am really appreciative of the assistance received from my alumni during my most difficult time. I'm hoping that someday I'll be in a position to help out my fellow students."

- Sunny Sharma

"The pandemic was a tough period for all of us. And it is very stressful for scholars especially when they are on the final stage and the stipend period has ended. I am very grateful to the alumni and non-alumni members who contributed in supporting scholars like me. You are inspiration to us by making us understand the importance of giving back to our community."

- Bhadra Hrishikesh



"I would like to express my sincere gratitude to all the alumni and non-alumni donors for generously donating towards the cause of Covid-19 relief with which we were supported with our stipend. I wish to prolong my appreciation to all who worked behind to make the entire process work smoothly. The financial support from you helped me greatly."

- Dipanjan Majumdar



"My deepest and sincere thanks to the donors who had generously donated to help research scholars whose fellowship got over. Covid 19 is a devastating scenario for every people and it was a catastrophe for scholars like me who were at the middle of our research work.

Your contribution has tremendously helped to fight back the crisis during COVID 19 pandemic in both research as well as personal life. The money was spent to pay my hostel and institute fees. Some portions were also helped for my survival. I also thank Dean, Alumni and corporate relation and his team for taking swift action which had restored my research career."

- Ashok Kumar

"Dear Donor, I (as a part of fellow other beneficiaries) thank on your intention to help the researchers monetarily on continuing the research activities. This covid situation not only extended time period of our research activities. For me, it affected the work as I lost my samples during this lockdown. Then I managed to cope up with the work by reviving strains and I am happy that you are willing to support to finish rest of my work. This will help me monetarily as I don't have earning person in my family."

- Manoj Kumar S



PROCURING OXYGEN CONCENTRATORS

The second wave of COVID-19 in India has struck close to many of us, people lost their lives due to a lack of oxygen. In these testing times, our IIT Madras Alumni, have come together to raise a focused fund for breathing aids that can help stabilize people in the crucial hours when care can make a big difference.

Initiatives of IIT Madras towards COVID relief of India

IIT Madras launched a campaign to raise funds for procuring oxygen concentrators in the United States of America. The Institute exceeded its goal of raising \$1 million in 48 hours.

The Indian Institute of Technology (IIT) Madras Alumni in India and abroad have donated more than USD\$ 2 million towards COVID relief efforts in India that are being coordinated by their Alma Mater. IIT Madras is using a phased approach for deployment to ensure a high impact of COVID-19 relief for the purchase of Oxygen cylinders, Bipap Machines, Injections, Medicines, Healthy food for Hostel students affected by covid was utilized.

The fundraising was coordinated by the **Office of Alumni and Corporate Relations (ACR), IIT Madras, in association with IIT Madras Alumni Association of North America (IITMAANA), IITM Foundation in the U.S, Canadian friends of IITM and IITM UK Association.**

IIT Madras has been at the forefront of providing research & aid support during the pandemic. The institute, alumni, researchers & faculty have been helping the government in various capacities from innovation in Health care research to fundraising drives for breathing aids. Few such initiatives were the contribution of **oxygen concentrators**, BiPAP units, and covid medical supplies to various state governments. The IIT-M Alumni Charitable Trust played a vital role in the logistics and in liaising with the local government. IIT Madras alumni working as senior executives with reputed MNCs were actively involved in evaluating and finalizing the options available at various stages throughout the process.

DISTRIBUTION OF OXYGEN CYLINDERS

Prof. Bhaskar Ramamurthi, the then Director, IIT Madras, handed over 200 oxygen concentrators purchased with the aid of the alumni contributions, to Gagandeep Singh Bedi IAS, Commissioner, **Chennai Corporation**, on June 3, 2021. Further, **Dr. Jane Prasad**, Registrar, IIT Madras, handed over 74 BiPAP Units to Chennai Corporation Officials recently.

The greatest gift you
ever give is your honest self.



The handover was carried out in the presence of MA Siddique IAS, Principal Secretary, Government of Tamil Nadu, and Meghanatha Reddy IAS, Deputy Commissioner (Works), Government of Tamil Nadu, Prof. Bhaskar Ramamurthi, Director, IIT Madras, Prof. Mahesh Panchagnula, Dean (ACR), N Alamelu, Secretary, IITM



Dr. Jane Prasad, Registrar, IIT Madras, and other officials, handing BiPAP Units to Chennai Corporation Officials



Contribution of oxygen concentrators to the Government of Karnataka
Contribution of Covid medicines to the SVIMS, Chittoor



IIT Madras had contributed 1000 units of covid medicines to Sri Venkateswara Institute of Medical Science (SVIMS), Chittoor



SWAMINATHAN FAMILY - MERIT CUM MEANS SCHOLARSHIP

Mr. Rohan Benny and Mr. A Sudhan have been identified as beneficiaries for the Swaminathan Family – Merit cum Means Scholarship.

Both the student beneficiaries have been consistently maintaining their academic records. They have been awarded the scholarship for 2020, 2021 and 2022.



ROHAN BENNY

ED20B051

Dual Degree - Engineering Design

Class of 2020 - 2025

CGPA Range - 8 to 9



A. SUDHAN

CH20B104

B.Tech - Chemical Engineering

Class of 2020 – 2024

CGPA Range – 8 to 9

“Money is but one
venue for generosity.
Kindness is an even more
valuable currency”





IT'S ABOUT
MAKING A
DIFFERENCE”



“GIVING
IS NOT JUST ABOUT
MAKING A DONATION,



Thank you for your sustained generosity to IIT Madras over the years. Contributors such as yourself enable our students and professors to dream big and work towards a better and brighter future.

We hope you are proud of your relations with IIT Madras and how it has remained steadfastly committed to academic and research excellence since the time of your connection. You and your family have been instrumental in facilitating this significant growth.

Our efforts to nurture the culture of academic excellence that is the hallmark of IIT Madras - quality education, cutting-edge research, and unfettered creativity shall continue. We are privileged and humbled to have you and your family walking with us along this trail. We wish you and your family the best always in all walks of life!



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