Centre for Product Design
and Manufacturing
Indian Institute of Science

भारतीय विज्ञान संस्थान

CPDM

Placement
Brochure '23

Message from the Chairman.

Prof. Amaresh Chakrabarti

Since the initiation of the prestigious MDes Programme in Product Design and Engineering in 1997, and the birth of the CPDM department a year later, faculty and staff of CPDM have been consistently working towards producing professionals in designing technologically challenging products and manufacturing systems that are functional, aesthetic, usable, sustainable and socially impactful; Creating leaders who can strengthen existing practice and develop new practice in the areas of design and manufacturing; Developing knowledge, including methods and tools; And to inform and empower practice and education of design and manufacturing.

CPDM has been graced by some of the most accomplished faculty members of the country, who are pioneering researchers in their areas of research that span creativity, ergonomics, sustainability, human machine interaction, systems integration, medical devices, simulation, materials, manufacturing, robotics, augmented reality, sensors, analytics, and so on. The activities at CPDM is supported by latest equipment and state of the art laboratories including IISc Smart Factory that supported by highly experienced members of staff. They, along with students of CPDM have won coveted awards such as Best Paper Award (47th WWRF Meeting 2022), Lexus Design Award 2022, James Dyson Award 2021, and Abdul Kalam Technology Innovation National Fellowship 2021. Five of the faculty members of CPDM are enlisted among top 2% researchers in the world, according to Stanford University Study published in PLOS, 2021.

Who are we?

CPDM at IISc

The Centre for Product Design and Manufacturing (CPDM), the design and manufacturing face of IISc, is among the most research and technology intensive design and manufacturing schools in India, steeped in the ambience of the Indian Institute of Science (IISc), Bangalore.

CPDM is among very few schools in India that train students in developing and making systemically-complex, technologically-intensive, and socially-impactful solutions that are functional, aesthetic, usable and sustainable. It is among the top design schools in the world that specialise in development of hardware products and manufacturing systems, and has been among the best in research into design, ranking alongside design schools and research centres in Stanford, Delft, Cambridge and CMU. Based on the number of design researchers in top 2%, IISc is 8th in the world and 1st in Asia in Design Research.

"IISc Bengaluru ranks **1st** in India and 155th in the world in the latest QS world university rankings 2021. It is the global leader in the Citations per Faculty (CpF) index. IISc is also the No. 1 ranking institute in India's NIRF university rankings."

Amaresh Chakrabarti

Design Synthesis and Creativity, Eco-Design and Sustainability, AI and Data Analytics, Product Informatics, Smart Manufacturing, Biomedical Devices, Sensors/Actuators

UNIVERSITY OF CAMBRIDGE

Dibakar Sen

Geometric & Topological Modeling, Digital Human Modeling & Posturing, Geometric & Functional Vision Modeling, Natural Behaviour & Grasp Modeling, Kinematic Assembly Modeling, Deployable Antena Mechanisms, Underactuated & Spring Actuated Mechanisms...

Indian Institute of Science
भारतीय विज्ञान संस्थान

B. Gurumoorthy

CAD, Product Informatics, Computational Metrology, Computer Aided Prototyping

Carnegie Mellon University

Pradipta Biswas

Human-Computer Interaction, User Modelling, Multimodal Interaction, Intelligent Interaction

UNIVERSITY OF CAMBRIDGE

03

The Faculty.

Since the initiation of the prestigious M.Des in Product Design and Engineering program in 1997, and the birth of the CPDM department a year later, we have been consistently working towards producing professionals in designing products and manufacturing systems that are functional, aesthetic, usable,sustainable and socially impactful; creating leaders who can strengthen existing practice and develop new practice in the areas of design and manufacturing; developing knowledge, including methods and tools, to inform and empower practice and education of design and manufacturing.

CPDM has been graced by the top faculty members of the country. The 11 core faculty members have strived to take the department to its glory. The faculty members are pioneer researchers in their respective fields. They, along with the students' team, have brought prestigious awards like Best Paper Award (47th WWRF Meeting 2022), Lexus Design Award, James Dyson Award, and Abdul Kalam Technology Innovation National Fellowship to the doors of CPDM.

Anindya Deb

Vehicle Crashworthiness and Occupant Safety, Pedestrian Safety, Impact Modeling and Testing, Behavior of Lightweight Materials under Impact Loading, Design of Automotive Systems.

University at Buffalo
The State University of New York

Vishal Singh

Built Environment (BE) and construction management, Design and design management, Innovation and innovation management

THE UNIVERSITY OF SYDNEY

Abhijit Biswas

Core Engineering Area (Electronics and Instrumentation), Interdisciplinary Engineering Area, Basic Science Area (Physiology and Psychology)

IIT Madras

Manish Arora

Biomedical Devices, Co-Design, Collaboration and Open-Source in Design

University of Twente
The Netherlands

N.D. Shivkumar

Polymer based composites, Bio-Composites, Synthesis/Manufacturing of lightweight materials, Computer Aided Design & Analysis of lightweight materials, Optimization & DOE based studies, Design and Application of developed/Novel lightweight materials.

Indian Institute of Science
भारतीय विज्ञान संस्थान

Rina Maiti

Human Factors Engineering, Biomechanics, Product Design, Medical Engineering, Rehabilitation engineering...

IIT Bombay

Abhra Roy Chaudhary

Robotics & Automation, Collaborative Mobile Robots (Aerial/Terrestrial/Marine), Human-Robot Collaboration, Mechatronics, Bioinspiration & Biomimetics

NUS
National University of Singapore

Batch of 2021-23

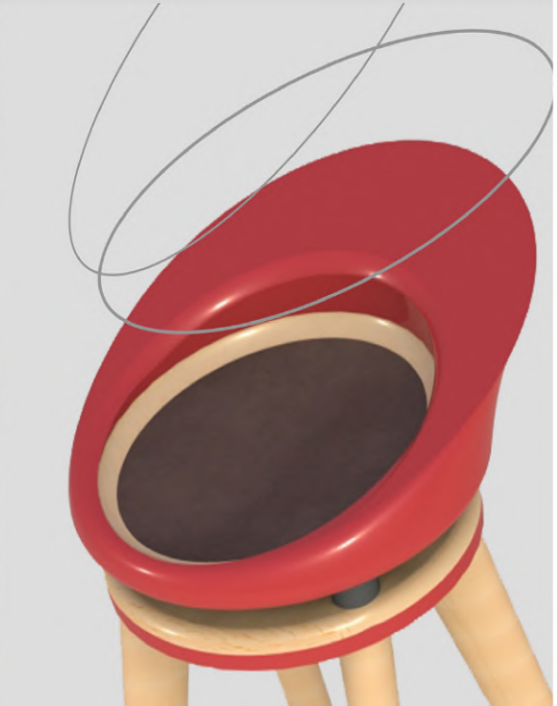
The Batch of 2021-2023 is CPDM's Silver Jubilee Batch. It consists of 22 students from varied backgrounds of engineering and architecture.

Demographics

09
Mechanical

07
Architects

01
Civil, Computer, Electronics, Bio-medical, Chemical, Automobile



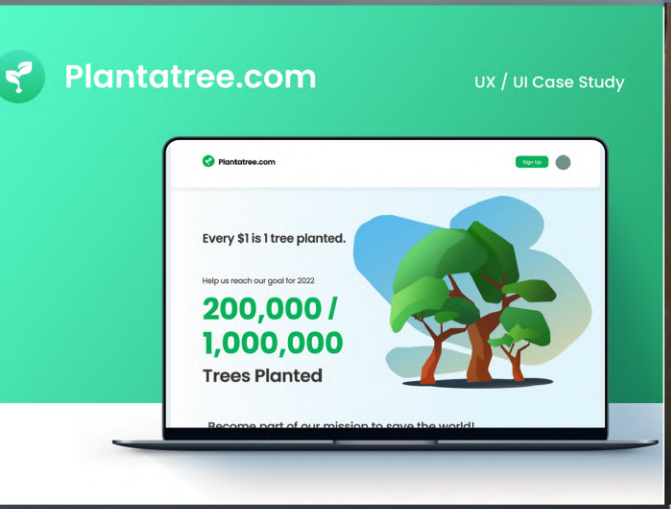
05

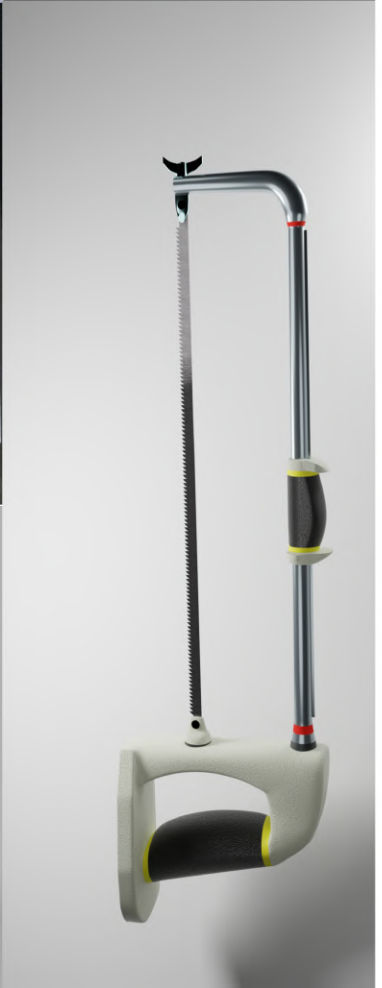
Our Works.

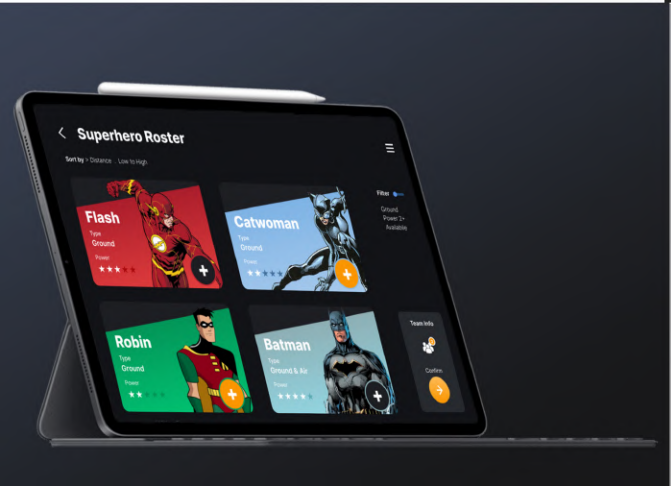
25 years of excellence in design

From acing in numerous national & international competitions to producing physical and digital products, CPDM has helped its students explore and navigate through different aspects of design which resulted in some of our best works.

06







The Batch of 2023 has actively worked on various projects in diverse design fields, both on individual and group levels. The projects have varied from the redesign of products to the innovation of new ones. The highlights of our projects are extensive user research and high concept to patent conversion.

Curriculum & Expertise.

Our M.Des curriculum in advanced design and engineering, spans the areas of Design Theory and Methodology, Product Lifecycle Managment, Human Factors in Design, User Interface Design, Vehicle Design, Technology Integration, Sustainability etc., with major applications in Automotive, Aerospace and Biomedical sectors.

Our courses vary from Creative Engineering Design focusing on product design starting from habitat study to ideations using tools like TRIZ, Synectics etc; Embodiment Design, Mechatronics, Mechanism Design to teach prototyping the designs as physical products; courses like Human Computer Interaction and Robotics include the use of computation and AI; and New Product Development helps project designs to transcend as viable market products.

07

The diverse courses and projects help students build several skills, with our expertise lying in:

08

NEW PRODUCT DEVELOPMENT

3D MODELING

USER RESEARCH

PRESENTATION SKILLS

PRODUCT SKETCHING

UX DESIGN

VISUALISATION SKILLS

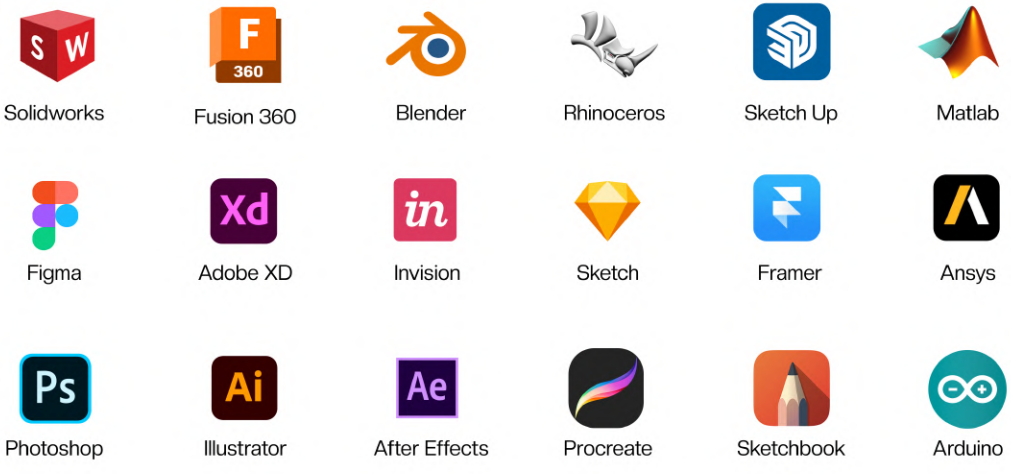
PROTOTYPING SKILLS

CONFLICT RESOLUTION

TRIZ

PITCHING SKILLS

ANALYTICAL SKILLS



CPDM students are unique because we develop skills not only in design thinking and user research but also in analytical thinking, new product development and management, and ergonomic evaluation, giving us a good entrepreneurial edge. We are also experts in skills such as 3D modeling, sketching, presentation, and pitching. Moreover, our courses and projects are structured in such a way that students become proficient in using multiple software and tools used in designing, ranging from SolidWorks, Fusion 360, Blender for 3D modeling and rendering to Illustrator and Figma for graphic designing.

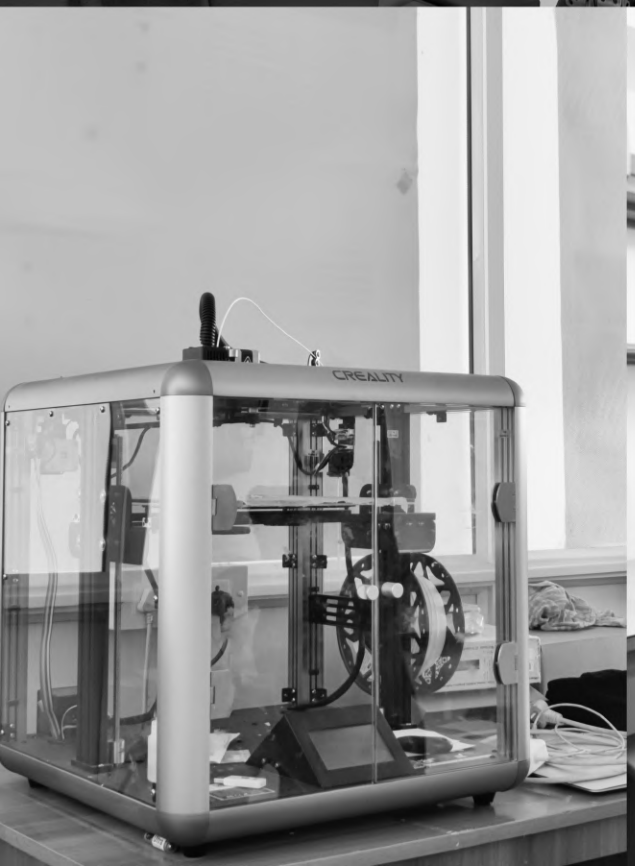
Skillset.

09

Facilities.

Research labs

IDEAS Lab	Innovation design study & sustainability
UTSAAH Lab	Universal technology solutions for accessible & affordable healthcare
CAR Lab	Creative automotive research
HER Lab	Human egineering research
SCALE Lab	Computerised anthropometry & ergonomics simulation
I4I Lab	Impact4Impact Lab



Facilities.

Research labs

Su-Desi Lab	Sustainability by design
PLM Lab	Product lifecycle management
VR Lab	Virtual Reality
I3D Lab	Intelligent Inclusive Interactive design
RI Lab	Robotics innovation
InSPIRE Lab	Innovation synthesis and prototyping for interdisciplinary research and engineering

Events & Awards

The students participate in numerous activities like talks and conferences by notable personalities. Organisations like UNICEF, TATA Elxsi and ISRO visit our labs for their projects. Regular workshops are conducted on prototyping, modeling, and building software skills. Our flagship events Ripples happen annually where the department showcases their project works and designs.

Silver Jubilee Celebrations

Monthly event celebrating 25 years of CPDM, started from 7 March 2022

Ripples

Annual event showcasing the products and projects undertaken at CPDM

CPDM faculty in Global Top 2%
The top 3 of the 5 high impact researchers enlisted from India in 'Design practice & Management' are from the core and associate faculty of CPDM, IISc Bangalore.

Workshops

SmartX Health Hackathon

Brunel-IISc Seminar Series

Research Presentation Day

UI/UX Workshop

Toycathon

BARN (Benchmark Autonomous Robot Navigation) Challenge ICRA USA 2022

Reimagine Waste Hackathon

Awards

Lexus Design Award 2022 | LifeBox by Deval Karia

Abdul Kalam National Technology Innovation Fellowship 2021 | Prof. Dibakar Sen for PURAK

James Dyson Design Award 2021 | National winner | LifeBox is an active heart preservation container for extending out-of-body viable time during transport for transplant.

Facebook Award | Dr. Pradipta Biswas and Prof. Yogesh Simmhan for proposal on Privacy- respecting AR/VR to Enable Differently Abled in Multi-Cultural Societies.

W2W IEEE Award 2021 | International winner| Meraki, a device for the treatment of urinary incontinence in women, by Komal Shah

ICCAS Conference 2020 Busan, S. Korea | Student best Paper Award Finalist | Paper: Vision- based Object Sorting using Deep Learning for Inventory Tracking in Automated Warehouse Environment.

MILCAA Award 2020

13

CPDM's M.Des program has harboured more than 100 students from all the country who have made their mark nationally and internationally in their respective fields since the first batch in 1997. Our alumni have been winning awards in various areas making CPDM proud. Here are some of the many notable alumni with their remarkable achievements.

Notable Alumni

Past Recruiters

14

Contact Us

Visit the following link to understand the IISc Recruitment Process through its placement cell body, the Office of Career Counselling and Placement (OCCaP)

https://occap.iisc.ac.in/index.php/placement-procedure/

For placement queries, write at

placement.occap@iisc.ac.in OR **occap.iisc@gmail.com**

To participate in full time/internship, please share details in this Recruiter Registration Form

https://docs.google.com/forms/d/e/1FAIpQLSffcXb7Kp0TknaeUS2JMD86NZVINLK3b8BggueoRhECUgqUnA/viewform

Placement coordinator, IISc

Ms. Jayanti Mahadevappa Belur

Placement Officer

6362542567

https://occap.iisc.ac.in/

Faculty Coordinators

Abhijith Biswas

Assistant Professor, CPDM

abiswas@iisc.ac.in

Vishal Singh

Associate Professor, CPDM

singhv@iisc.ac.in

Student Coordinators

Nishith Abhinandan

M.Des 2nd year, CPDM

8290133104

anishith@iisc.ac.in

Shubham Shreshth

M.Des 2nd year, CPDM

8847476431

shubhamshres@iisc.ac.in