

Dear Friends.

Greetings from IIT Bombay!

Hope you all are healthy and safe.

It pains me to say that the last month also witnessed a tough time for the Institute functionaries due to the havoc caused by COVID across many parts of India. Our extended IIT Bombay family has been hit badly, and though we are unaware of the exact numbers, our thoughts are with everyone who is going through a tough time during these testing times.

We had to stop vaccination in the beginning of the month due to the surge in covid cases swamping our hospital. Nonetheless, now that cases have gone down due to a timely lockdown from April 14th, we have once again been approved to restart covid vaccination as a government facility. However, this will depend on when the BMC supplies us with vaccines, which we hope will realise soon. To ensure our students can get access to vaccines, we have been exploring all possibilities, but we think it will take some time; therefore we request patience.

The atmosphere for students around the end of the month turned quite sombre due to the commencement of their end semester exams, which were conducted in the online mode over the last couple of semesters. However, due to the current situation, it was unanimously decided to give students, who were affected by the pandemic in any way, the opportunity to opt for a re-exam at a later date.

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#### **News from IIT Bombay**

#### A tribute to the Timeless Icon IIT Bombay, Prof. T. R. R. Mohan



Prof. T. R. R. Mohan was popularly known as TRRM to his students and colleagues. Prof. Mohan studied M.Sc. (Physics) at Annamalai University, Chidambaram (1961 - 1963). Later he joined Metallurgical Department, IIT Bombay and earned his M.Tech. Prof. Mohan retired from IIT Bombay in 2005 after 35 years of service. Even though he retired from service but he never really retired remaining highly active advising Industry in Powder Metallurgy, Advanced Ceramics, Bio-ceramics, Diamond tools and other Products used in Automotive and Engineering Industry.

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#### **Institute Lecture Series**

#### **Alumni Initiative: Named Lectures**

The Named Lectures are an integral part of the academic programs at IIT Bombay. These lectures are donor instituted and many times for a specific cause that is close to the donor's heart. Such lectures are an opportunity for the Institute to collaborate with eminent personalities from various fields. Most of our attendees are students, participants, alumni, and well-wishers all over the world. These lectures are open to everyone and are usually conducted physically within the campus.



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### Faculty Research at IIT Bombay

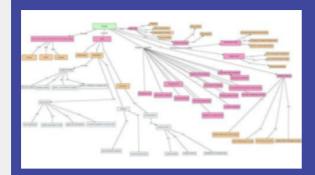
Prof. Shamik Sen

#### <u>Understanding mechanobiology of cancer cells</u> can provide new solution

Prof. Shamik Sen joined IIT Bombay in July 2010 in the Department of Biosciences and Bioengineering. Prof. Sen earned a B.E. in Mechanical Engineering from Jadavpur University, Kolkata, and a M. Tech in Mechanical Engineering from IIT Kanpur. He then completed his Ph.D. in Mechanical Engineering from University of Pennsylvania, where he worked in the area of mechanobiology. He is currently working in the area of mechanobiology where he is integrating mechanics and biology for probing stem cell biology and cancer cell biology. He is a Swarnajayanti fellowship recipient in the year 2016-17.

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#### Student Research activities at IIT Bombay



# Training Students to Applying Computational Thinking to Solve Locally-Relevant Socio-Scientific Issues

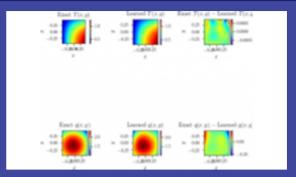
Name: Falegaonkar Vishvanath Bhaurao

Supervisor: Prof. Sridhar Iyer

**Department**: Interdisciplinary Programme

in Educational Technology (Ph.D)

Computational Thinking will be a fundamental skill used by everyone in the world by the middle of the 21st century. Computing and computers will help to spread computational thinking and in the age of the pandemic like COVID 19, computational thinking skill will be a path breaking way to spread the knowledge and intellect in the education domain. Computational thinking will be important at the undergraduate level & PhD level but the dare was to really see how it can be inculcated in the teaching of k-12 students & how teachers in k-12 can teach such students.



## Physics Guided Machine Learning Study For Computational Fluid Dynamics

Name: Ammar Ahmad Qazi Supervisor: Prof. Atul Sharma

**Department**: Mechanical Engineering

(M.Tech.)

Many machine learning models that are used today for solving computational fluid dynamics (CFD) problems predict output without verifying that the underlying physics is obeyed at each level while training the data as well as predicting the unlabelled set. It can be seen that physics-based computational fluid dynamics model are completely based on a scientific theory with very less use of data while black-box machine learning models such as neural network is completely based on the use of data without accounting for the underlying scientific theory or physics.

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#### Product & Technology Development at IIT Bombay



#### **EMERGY Enviro Private Limited**

**Start up Name**: EMERGY Enviro Pvt. Ltd. **Inventor/s name**: Indra Kant Jha **Technology/Product**: Natural Wastewater

**Treatment Systems** 

EMERGY Enviro Pvt. Ltd. is working in core domain of environmental engineering such as water, wastewater, air, solid waste, noise, load carrying capacity, etc. An initiative of IIT Bombay Alumnus, the company has come a long way from research scale to on-field implementation. EMERGY is providing a wide range of environmental consultancy to industries & government organizations through their innovative products & customized services.

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#### **Ubigare Health Private Limited**

**Start up Name**: Ubiqare Health Pvt. Ltd. **Inventor/s name**: Sundar Srinivasan, Sridhar Pillalamarri, and Prasanna Limaye **Technology/Product**: Specialty mobility Healthcare platform as a service

Every year in India, more than 300M patients suffer from debilitating diseases like cancer stroke, and many other disorders that require long-term medical care and continuity of specialists care after discharge from hospital. Specialists and hospitals too miss the connect to their patients and lose control over treatment outcomes. Ubiqare solves this problem by combining Technology, Trust, Teamwork and Touch in one hybrid platform.

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