



The Institute of Mathematical Sciences, Chennai

Quarterly Report

July - September 2022



Highlights: research and events

Awards and Honours

S. Gun was awarded President (AOWM), for 2022, by the Continental organization for women in mathematics in Asia and Oceania for President of Asia-Oceania Women in Mathematics (AOWM), the continental organization for women in mathematics in Asia and Oceania.

Venkatesh Raman was elected President, for 2022, of ACM India (<https://india.acm.org>).

Arnab Pal (IMSc) was awarded SERB Start-Up Research Grant (2022-24) by DST SERB (<https://www.serbonline.in/SERB/HomePage>) to work on applications of first passage processes in natural sciences.

IMSc Outreach

IMSc Ganakam program:

IMSc students have been running a weekend program for staff children to help them with school work etc. The general plan is to help children with whatever they want to learn!

Currently, IMSc volunteers help children with languages (English, Hindi), Mathematics/Science helping with home-work, basic programming (with use of computer lab) as well as some fun activity/experiment sessions. The program runs every Saturday (4:30-6:00pm) and Sunday (3:30-6:00pm) since March, 2022 and has been regularly attended by 20 students from 5th-12th std.

Organizers: IMSc students

Vigyan Pratibha Discussion Seminars: Feb 2022 -- present

Vigyan Pratibha is a Government of India program to nurture talent in Science and Mathematics among VIII - X students. Since February, IMSc has been coordinating Vigyan Pratibha Discussion Seminars (VPDS). Every other week, we discuss a different topic in school science and mathematics (with a special focus on Vigyan Pratibha Learning Units [\url{https://vigyanpratibha.in/index.php/learning-units/}](https://vigyanpratibha.in/index.php/learning-units/)) and it's associated pedagogies. The sessions are intended for teachers, to help you in classrooms, science circle settings, as well as in online/distance modes of working with students.

Organizers: Manikandan Sambasivam, K. N. Raghavan, Varuni P

Vigyan Pratibha Teachers Workshop (Tamil): 16-20 August

IMSc organized a 3-day local teachers workshop for the Vigyan Pratibha program, a Government of India program to nurture talent in Science and Mathematics among VIII - X students. The workshop was attended by 31 teachers from mainly from Tamil Nadu government schools in and around Chennai. The program also included the release of the bilingual (English and Tamil) version of the Vigyan Pratibha Class 8 Teachers booklet.

Organizers: K. N. Raghavan, Manikandan Sambavasivan, Varuni P, S. Viswanath

Speakers: Arun Kumar (IITM), I. K. Lenin Tamilkovan (Periyar Science and Technology Centre), R. Ramanujam (rtd IMSc, Azim Premji University), Manikandan Sambasivam, Subashri V, K. Subramaniam (HBCSE), Uthra Dorairajan (D G Vaishnav College), Varuni P, Gummdigampatti Youvaraj (Ramanujan Institute for Advanced Study in Mathematics)

Details: <https://www.imsc.res.in/outreach/vpchennai/TWChTam2022.html>

SM: <https://twitter.com/IMScChennai/status/1559161930207870976>

Vigyan Pratibha Teachers Workshop (English): 21-23 August

IMSc organized a 5-day regional teachers workshop for the Vigyan Pratibha program, a Government of India program to nurture talent in Science and Mathematics among VIII - X students. The workshop was attended by 39 teachers from central government schools (KVs and JNVs) from the southern region. The program included a trip to the Periyar Science and Technology Centre, Chennai\\

Organizers: K. N. Raghavan, Manikandan Sambavasivan, Varuni P, S. Viswanath

Speakers: Aaloka Kanhere (educationalist), Adithi Muralidhar (HBCSE), Anand Vaidya (TIFR-H), Arun Kumar (IITM), Vadnala Rakesh Netha, R. Ramanujam (rtd IMSc, Azim Premji University), T. Rukmani (KVS), Manikandan Sambasivam, Subashri V, Sulochana R (HBCSE), Sushma Rawool (Educational Initiatives), Uthra Dorairajan (D G Vaishnav College), Varuni P.

Details: <https://www.imsc.res.in/outreach/vpchennai/TWChEng2022.html>

SM: <https://twitter.com/IMScChennai/status/1563124676989448193>

Vigyan Pratibha KV school visits : August 2022 -- present

The Vigyan Pratibha program is a Government of India program to nurture talent in Science and Mathematics among VIII - X students. The program is carried out mainly in the form of "

Learning Units" (LUs) prepared by science and mathematics educators in partnership with scientists from various institutions which expose students to the processes of observation, analysis, critical thinking and collective learning. These LUs consist of student worksheets and teacher notes which teachers can use as a resource to plan and conduct sessions in their classrooms. To facilitate this, we have been visiting various KVs to help teachers conduct sessions with their students.

Details: <https://www.imsc.res.in/outreach/vpchennai/schoolvisits.html>

SM: <https://twitter.com/IMScChennai/status/1565322453139996672>

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SM: <https://twitter.com/IMScChennai/status/1565322453139996672>

Vigyan Pratibha Teachers Workshop @University of Calicut: 21-23 September

IMSc co-organized a 3-day regional teachers workshop for the Vigyan Pratibha program, a Government of India program to nurture talent in Science and Mathematics among VIII - X students. The workshop was co-organized and hosted by the Department of Mathematics, University of Calicut, Mallapuram, Kerala. The workshop was attended by 41 teachers from KVs (Ernakulam region) and local government schools. The program included a trip to the Botanical garden in the University of Calicut.

Organizers: K. N. Raghavan, Manikandan Sambavasivan, Prasad T (UoC), Anil Kumar (UoC), Varuni P, S. Viswanath

Speakers: Anand Vaidya (TIFR-H), Jayasree S (HBCSE), Manikandan Sambasivam, Manish Jaiswal (TIFR-H), Sarath Sasi (IIT Palakkad), Varuni P.

Details: <https://www.imsc.res.in/outreach/vpchennai/TWKer2022.html>

Foundations Program for MSc students: 11-29 September, 2022

A research foundations program for MSc students in Mathematics was conducted. The goal of the program was to strengthen foundations and provide research exposure to the participants. It was attended by 52 students (47 University of Madras, 5 Patrician College of Arts and Science). The program consisted of lectures and tutorial sessions.

Organizers: Velmurugan S, K. N. Raghavan

Speakers: Amri, Anirban, Aryan, Abhirup, Arun Kumar (IIT Madras faculty), Dhananjaya, Jayakumar, Manav, Manikandan, Mithun, Praveen (IISER Mohali), Soumyadip, Sathish, Selvakumar, Srin, Subhankar, Sushant



Women's Christian College student visit: 15 September 2022

50 students from BSc. Mathematics (final year) from Women's Christian College (WCC) visited the IMSc campus. They attended a mathematics lecture and toured the library.

Organizer: Sushmita V, Varuni P.

Speakers: Maruthu Pandian, Sushmita V, Usha Devi

Facets 2022: 29 & 30 September 2022

Facets is the Institute's outreach program for advanced undergraduate and postgraduate students of mathematics. This 2 day program is intended for mathematics students to interact with professional mathematicians working in research. Topics of lectures ranged from mathematical applications to linguistics to cartography. This year, over 120 students attended this program.

Organizer: Sushmita V, Varuni P.

Speakers: C. Aiswarya (CMI), Anup Dixit, Kripa Gowrishankar (Azim Premji University), Pinaki Chaudhuri, K. N. Raghavan, Srikumar K. Subramanian (Krea University), Vijay Ravikumar.

Details: <https://www.imsc.res.in/outreach/facets2022/>

Azadi Ka Amrit Mahotsav

The Institute of Mathematical Sciences (IMSc), Chennai, is celebrating the 75th anniversary of India's independence with a year-long calendar of popular scientific talks, a line-up of distinguished lectures, public outreach programmes, exhibitions and educational initiatives.

Following are the details of the talks organized during July - September, 2022.

More information on Azadi Ka Amrit Mahotsav events conducted by IMSc is available at: <https://www.imsc.res.in/akam/>

DAE Iconic Week (22-28 August 2022)

As part of Azadi Ka Amrit Mahotsav, the Ministry of Culture, Government of India, has allotted the week of 22-28 August 2022 as an Iconic Week for the Department of Atomic Energy (DAE) to showcase the achievements of the department. IMSc is an autonomous institution funded by DAE and we are proud to celebrate the DAE Iconic Week with the following activities organised by the Institute, during 22-28 August 2022.

College & School Visits:

Title: Interdisciplinary research opportunities at IMSc & invitation to DAE Iconic week celebrations,

- Ramakrishna Mission Vivekananda College, Mylapore, Chennai (22 & 23, August, 2022)

Title: Information session for school students titled: "நீங்கள் அறியாத அறிவியல் பாதை"

- VKK Ammani Ammal Matriculation School, Pammal, Chennai (23 August, 2022)
- Savitri Ammal Oriental Higher Secondary School, Mylapore, Chennai (26 August, 2022)

IMSc Heritage Lecture

Title: A legend lives on - The story of Homi Jehangir Bhabha

Speaker: Prof. G. Amarendra (Raja Ramanna Fellow, Nuclear Fuel Complex, Hyderabad & Homi Bhabha National Institute)

Venue: Ramanujan Auditorium, IMSc Chennai (23 August, 2022)

IMSc HERITAGE LECTURE SERIES

Tuesday, 23 August 2022 | 1600 - 1730 IST
Venue: Ramanujan Auditorium, IMSc Chennai
Livestream: [/matsciencechannel](https://www.youtube.com/matsciencechannel)

**A legend lives on -
The story of Homi Jehangir Bhabha**

Prof. G. Amarendra
Raja Ramanna Fellow
Nuclear Fuel Complex, Hyderabad
Senior Professor
Homi Bhabha National Institute

CELEBRATING 60 years of CREATIVE SCIENCE IMSc - 60

DAE ICONIC WEEK [/IMScChennai](https://twitter.com/IMScChennai) [/IMScChennai](https://www.facebook.com/IMScChennai) All are welcome!

Logos: Technologies for New India @ 75, Azadi Ka Amrit Mahotsav, IMSc, and a QR code.

Title: Evolution of Modern Science in India

Speaker: Prof. Sreerup Raychaudhuri (Tata Institute of Fundamental Research, Mumbai)

Venue: Ramanujan Auditorium, IMSc Chennai (26 August, 2022)

IMSc HERITAGE LECTURE SERIES

Friday, 26 August 2022 | 1600 - 1730 IST
Venue: Ramanujan Auditorium, IMSc Chennai
Livestream: [/matsciencechannel](https://www.youtube.com/matsciencechannel)

**Evolution of Modern Science
in India**

Prof. Sreerup Raychaudhuri
Department of Theoretical Physics
Tata Institute of Fundamental Research
Mumbai

CELEBRATING 60 years of CREATIVE SCIENCE IMSc - 60

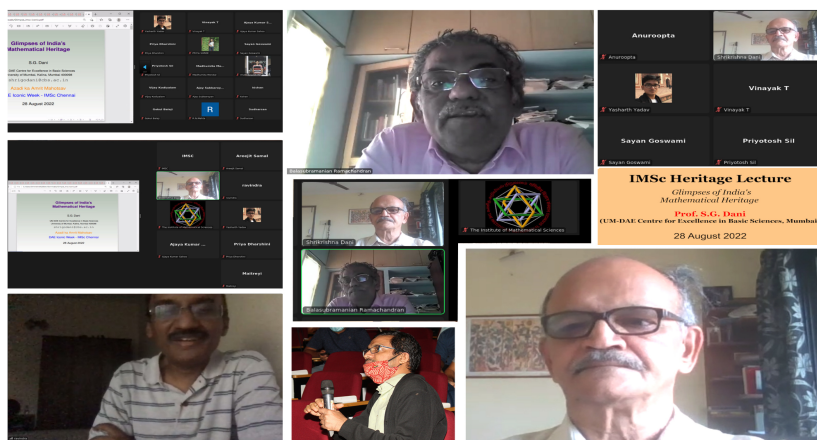
DAE ICONIC WEEK [/IMScChennai](https://twitter.com/IMScChennai) [/IMScChennai](https://www.facebook.com/IMScChennai) All are welcome!

Logos: Technologies for New India @ 75, Azadi Ka Amrit Mahotsav, IMSc, and a QR code.

Title: Glimpses of India's Mathematical Heritage

Speaker: Prof. S.G. Dani (UM-DAE Centre for Excellence in Basic Sciences, Mumbai)

Date: 28 August, 2022.



DAE Technology Showcase

Title: Development of BARC-Hydrogel: Improving Water Economy in Plantation and Agriculture

Speaker: Dr. Kuber Bhainsa (Scientific Officer G, Nuclear Agriculture and Biotechnology Division, Bhabha Atomic Research Centre, Mumbai)

Venue: Ramanujan Auditorium, IMSc Chennai (24 August, 2022)

DAE TECHNOLOGY SHOWCASE

Wednesday, 24 August 2022 | 1430 - 1530 IST
 Venue: Ramanujan Auditorium, IMSc Chennai
 Livestream: [/matsciencechannel](https://www.youtube.com/watch?v=...)

Development of BARC-Hydrogel: Improving Water Economy in Plantation and Agriculture

Dr. Kuber Bhainsa
 Scientific Officer G
 Nuclear Agriculture and Biotechnology
 Division, Bhabha Atomic Research Centre,
 Mumbai

After the talk, the speaker will demonstrate the use of Hydrogel technology in IMSc Garden via Tree plantation.

CELEBRATING 60 years of CREATIVE SCIENCE IMSc - 60

75 Azadi Ka Amrit Mahotsav

DAE ICONIC WEEK [/IMScChennai](https://www.instagram.com/IMScChennai) [/IMScChennai](https://www.facebook.com/IMScChennai) *All are welcome!*

IMSc Distinguished Lecture

Title: A journey in nuclear physics and its intersections with high energy physics

Speaker: Prof. Vivek M. Datar, The Institute of Mathematical Sciences (IMSc), Chennai, India

Venue: Ramanujan Auditorium, IMSc Chennai, (02 August 2022)



Title: Research and Education in Emerging and Disruptive Technologies

Speaker: Prof. V. Kamakoti (Director, Indian Institute of Technology Madras, Chennai)

Venue: Ramanujan Auditorium, IMSc Chennai, (24 August, 2022)

IMSC DISTINGUISHED LECTURE SERIES

Wednesday, 24 August 2022 | 1630 - 1730 IST
 Venue: Ramanujan Auditorium, IMSc Chennai
 Livestream: [/matsciencechannel](https://www.youtube.com/matsciencechannel)

Research and Education in Emerging and Disruptive Technologies

Prof. V. Kamakoti
 Director
 Indian Institute of Technology Madras
 Chennai

CELEBRATING 60 years of CREATIVE SCIENCE IMSc @ 60

DAE ICONIC WEEK [/IMScChennai](https://www.facebook.com/IMScChennai) [/IMScChennai](https://www.instagram.com/IMScChennai) [/matsciencechannel](https://www.youtube.com/matsciencechannel) *All are welcome!*

Alladi Ramakrishnan Distinguished Lecture

Title: Alladi Ramakrishnan - Theoretical Physicist

Speaker: Prof. R. Parthasarathy (Retired Professor, IMSc, Chennai)

Venue: Ramanujan Auditorium, IMSc Chennai, (25 August, 2022)

This distinguished lecture in the birth month of Prof. Alladi Ramakrishnan is being organised by The Academy of Sciences, Chennai in cooperation with IMSc, Chennai.

ALLADI RAMAKRISHNAN DISTINGUISHED LECTURE

Organised by
 The Academy of Sciences
 Chennai
 and
 The Institute of Mathematical Sciences (IMSc)

Alladi Ramakrishnan - Theoretical Physicist

by
Prof. R. Parthasarathy
 Retired Professor
 IMSc Chennai

Thursday, 25 August 2022 | 1500 - 1630 IST
 Venue: Ramanujan Auditorium, IMSc Chennai
 Livestream: [/matsciencechannel](https://www.youtube.com/matsciencechannel)

CELEBRATING 60 years of CREATIVE SCIENCE IMSc @ 60

DAE ICONIC WEEK [/IMScChennai](https://www.facebook.com/IMScChennai) [/IMScChennai](https://www.instagram.com/IMScChennai) [/matsciencechannel](https://www.youtube.com/matsciencechannel) *All are welcome!*

Outreach Event for High School Students

Title: Stimulating high school students towards a future in basic sciences

Venue: Ramanujan Auditorium, IMSc Chennai, (27 August, 2022)

This program is only for registered students and accompanying teachers. The program received an overwhelming response.