



INDIAN ACADEMY OF SCIENCES

36th MID-YEAR MEETING

— 04–05 July 2025 —

Venue: Ground Floor Main Auditorium, New Biological Sciences Building and Faculty Hall, IISc, Bengaluru

SPECIAL LECTURE

Friday 04th July 2025, 09:30–10:10 am

Chairperson

Chandan Dasgupta, IISc, Bengaluru



Sriram Ramaswamy
IISc, Bengaluru

The Strange Physics of Self-Driven Particles

My talk, aimed at a broad scientific audience, will focus on the collective behaviour of entities that continually turn a supply of free energy into work. I'll summarise pre-history and classic results, emphasise the connection to living systems, and present our recent findings from theory and simulations, as well as experiments on artificial realisations. I will highlight the importance of non-mutual interactions, and close by discussing long-term challenges.

About the Speaker:

Shri Sriram Ramaswamy is an honorary professor in the Department of Physics of the Indian Institute of Science, Bengaluru. He received his PhD from the University of Chicago in 1983. His research areas are nonequilibrium, soft matter and biological physics, with a particular interest in active matter. He has been a Fellow of the Indian Academy of Sciences since 1996.

Youtube Live Streaming Link

<https://youtube.com/live/zXgVLt-w98E?feature=share>

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<https://mym2025.ias.ac.in/>

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PUBLIC LECTURE

Friday 04th July 2025, 06:00–07:00 pm

Chairperson

Raghavan Varadarajan, President, IASc



A.S. Kiran Kumar
Former Chairman, ISRO, Bengaluru

India's Space Programme: Challenges

India's space programme has grown from humble beginnings into a globally recognized model of self-reliance, innovation, and service to societal needs. In this lecture, Shri A. S. Kiran Kumar will delve into the current and emerging challenges — ranging from technological advancements, global competition, climate resilience, and commercial space, to the need for sustained investment in research and capacity building. Drawing from his rich experience at the helm of ISRO, the talk will provide valuable insights into the strategic direction and preparedness required to sustain and expand India's space leadership in a rapidly evolving landscape.

About the Speaker:

Shri A. S. Kiran Kumar is a renowned space scientist and former Chairman of the Indian Space Research Organisation (ISRO), where he also served as Secretary, Department of Space (2015–2018). He currently serves as a Member of the Space Commission, Government of India. He has played a pivotal role in advancing India's space capabilities across earth observation, communication, navigation, and planetary exploration, including significant contributions to the Chandrayaan and Mars Orbiter Missions.

He is a recipient of several national and international honours, including the Padma Shri (2014), Rajyotsava Award (2015), International von Kármán Wings Award (2018), and Chevalier de l'Ordre national de la Légion d'Honneur (2019).

Youtube Live Streaming Link

<https://youtube.com/live/9-7l-yx0rsg?feature=share>

SPECIAL LECTURE

Saturday 05th July 2025, 09:30–10:10 am

Chairperson

Anil Kumar, Pune



A. Ajayaghosh
SRM Institute of Science and
Technology, Kattankulathur

The Supramolecular Chemistry of Smart Windows

Autonomous radiative cooling by reflecting solar light and thereby reducing global energy consumption is one of the mandates of the Sustainable Development Goals (SDGs). In this context, thermoresponsive polymer-based smart windows are emerging as a viable approach towards energy efficiency. Lower Critical Solution Temperature (LCST) active polymers are widely used in smart windows for controlling the room temperature by reflecting out the heat generating IR radiation of the sunlight. We have been exploring the supramolecular chemistry of small molecular π -systems to construct smart windows for autonomous control of solar radiations. Our expertise in supramolecular self-assembly and photoprocesses helped us in designing a variety of molecular systems that can be applied to the construction of smart windows. The proposed talk will highlight some of our contributions in this topic.

About the Speaker:

Shri Ayyappanpillai Ajayaghosh is the former Director of CSIR-NIIST, Thiruvananthapuram and currently a Chair Professor of Chemistry at the SRM Institute of Science and Technology, Kattankulathur, Chennai. He obtained a PhD from Calicut University in 1989. His research is mainly on organic materials such as fluorescent materials, stimuli responsive materials, organogels, supramolecular materials etc. He has been a Fellow of the Indian Academy of Sciences since 2007.

Youtube Live Streaming Link

<https://youtube.com/live/d-pu4g0ZwPg?feature=share>