

## Stimulating lectures, research highlights of 27th mid year meet of Indian Academy of Sciences

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The 27th mid year meeting of the Indian Academy Sciences organised at Bangalore was interspersed with talks of exciting research and intellectual deliberations on the science in India beyond the boundaries of laboratories.



The two day conference attended by 110 fellows and 186 students was held at the Indian Institute of Science.

The conference started with Dipankar Bhattacharya from IUCAA, Pune giving a special lecture on the Astrosat mission, India's space based astronomical observatory developed by ISRO launched in September last year. Besides outlining the fundamentals of the mission, the talk briefly described the instruments on board the satellite and presented some of the early scientific results.



Among other who spoke, P B Sunil Kumar from IIT Chennai dwelt at large on the mechanisms governing the shape changes in biological membranes and discussed on the physical changes that two processes induce on the membranes. K N Uma from VSSC Thiruvanthapuram underlined the Tropical mesoscale convective systems and their associated dynamics while Suman Chakraborty from IIT Kharagpur spoke on a proposition that can bring far ranging implications applications from nature to energy.

Shantanu Chowdhury from IGIB, Delhi outlined his work on Knotty DNA while giving a new dimension to gene regulation followed by Debashish Goswami from ISI Kolkata highlighting the quantum group symmetry of classical and non commutative geometry and Kanishka Biswas from JNCASR, Bangalore discussing on the origin of ultra low thermal conductivity in complex chalcogenides.

A special attracting of the conference was the symposium on gravitational waves especially in the light of the recent announcement made by LIGO last month. While Tarun Souradeep

from IUCAA, Pune gave the introductory comments, Bala Iyer from ICTS, Bangalore spoke on the journey from prediction to detection. He outlined on how the first detection of gravitational waves from a black hole odyssey involving critical understanding of physical effects of gravitational waves, the coming together of the best technologies to design an instrument sensitive enough to detect miniscule effects. In the same context, Sukanta Bose from IUCAA, Pune said how scientists were aiming to use gravitational waves to push the frontiers of physics and astronomy and P Ajith of ICTS, Bangalore mentioned how gravitational wave observations allowed us to test general relativity in a regime that was inaccessible to other astronomical observations or laboratory tests. The symposium concluded with a talk by Varun Bhalerao from IUCAA Pune highlighting the role that can be played by the existing and the upcoming Indian facilities in such studies.

The first day of the conference ended with a stimulating lecture by Pratap Bhanu Mehta of the Centre for Policy Research. His talk examined the two competing ideas of India and advocated that the real demands of our times requires us to re-imagine India as a zone of freedom and not a compact of identities.

The second day of the meeting started with a special lecture by K N Ganeshiah from GAS, GKVK, Bangalore who articulated on 'pulses' for green revolution. The talk explored the relative difference among cereals and pulses in their efficiency of converting the solar energy into yield, the physiological constraints that the pulses face owing to their nitrogen rich seeds and the consequent auto-parasitisation of leaves, all of which severely affect their yield potential.

Saman Habib, from CDRI, Lucknow spoke on a relict organelle that changed the way we thought of malaria., R Prabhu from IIT Patna gave a glimpse into quantum information science while Subhra Chakraborty from NIPGR spoke at length on understanding biomolecular networks modulating nutrient response and immunity in plants.

The conference ended with the lecture by D S Pandey from BHU Varanasi who enlightened the audience on aggregation induced emissions while giving optical and morphological insights.