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NISER
Bhubaneswar



IIT
Bhubaneswar

Indian Academy of Sciences

90th ANNUAL MEETING

8-10 November, 2024

Joint Hosts: National Institute of Science Education and
Research, Bhubaneswar
and
Indian Institute of Technology, Bhubaneswar

Venue:

8-9 November 2024

National Institute of Science Education and Research,
Bhubaneswar

10 November 2024

Indian Institute of Technology, Bhubaneswar

PROGRAMME

8 November 2024 (Friday)

Venue: Pathani Samanta Auditorium, NISER

09:00–09:30	Registration
	Session 1A Inaugural session, Presidential Address and Group Photograph
09:30–11:00	Umesh V Waghmare , JNCASR, Bengaluru Sensing vibrations using quantum geometry of electrons
11:00–11:20	<i>Tea break</i>
	Session 1B – Symposium on “100 years of Raman Spectroscopy – Lab to Life”
11:20–13:30	Conveners – Chandrabhas Narayana and Siva Umamathy
11:20–11:25	Introduction by the Convener – Siva Umamathy
11:25–11:55	Chandrabhas Narayana , RGCB, Thiruvananthapuram A journey of Raman spectroscopy from physics to biology
11:55–12:25	Siva Umamathy , IISc, Bengaluru Raman Spectroscopy: Ultrafast dynamics, security applications, and impact of artificial intelligence
12:25–12:55	C Murali Krishna , TMC, Navi Mumbai Raman theranostics: Perspectives and challenges
12:55–13:25	Nikki Kuhar , University of Delhi, Delhi Understanding protein folding using Raman spectroscopy
13:25–13:30	Discussion
13:30–14:30	<i>Lunch Break</i>
	Session 1C Special Lecture
14:30–15:10	Chairperson: Umesh V Waghmare , JNCASR, Bengaluru A K Sood , Principal Scientific Adviser to Govt. of India, New Delhi Overcoming an age-old thermodynamic puzzle in micro-heat engines
15:15–15:30	Book launch – “Trees of Bangalore” by A K Sood. Author: K Sankara Rao, published by the Indian Academy of Sciences
15:30–16:10	Session 1D Lectures by Fellows/Associates Chairperson: S Sivaram, IISER, Pune
15:30–15:50	U K Anandavardhanan , IIT, Mumbai Distinguished representations
15:50–16:10	N M Anoop Krishnan , IIT, Delhi Artificial intelligence for end-to-end materials modeling and discovery
16:10–16:40	<i>Tea Break</i>
16:40–17:20	Session 1E Lectures by Fellows/Associates Chairperson: Saraswathi Vishveshwara , IISc, Bengaluru
16:40–17:00	P G Kubendran Amos , National Institute of Technology, Tiruchirappalli Was NASA's microgravity experiment on material coarsening III-planned? Insights from AI-assisted materials research
17:00–17:20	Subhadeep Chatterjee , CDFD, Hyderabad Understanding the social language of bacteria: Speak or not to speak?
17:20–18:00	Break

<https://youtube.com/live/jfcRu8gyBV4?feature=share>

Session 1F Public lecture

- 18:00–19:00 Chairperson: **Umesh V Waghmare**, JNCASR, Bengaluru
Shri Jagadananda, Centre for Youth and Social Development, Bhubaneswar
Participatory governance and the need to promote and nurture active citizenship
- 19:30 **Dinner – Library Foyer, NISER**

9 November 2024 (Saturday)
Venue: Pathani Samanta Auditorium, NISER

- 09:00–10:30 **Session 2A** Lectures by Fellows/Associates
Chairperson: **Vinod K Gaur**, Bengaluru
- 09:00–09:20 **Thamban Meloth**, NCPOR, Goa
Polar warming and tropical teleconnections
- 09:20–09:40 **Ritika Gautam Singh**, IIT, Kanpur
Redox dynamics in health and disease: Pathways from inorganic chemistry to therapeutic innovation
- 09:40–10:00 **Ramajayan Pandian**, IIIM, Jammu
Cannabis therapeutic potential in neurodegenerative diseases
- 10:00–10:20 **Arpan Bhattacharyya**, IIT, Gandhinagar
Some explorations into Krylov/spread complexity
- 10:20–10:50 *Tea break*
- Session 2B** – Symposium on “Neurocircuits governing behavior”
- 10:50–13:00 Convener – **Vidita Vaidya**
- 10:50–10:55 Introduction by the Convener – Vidita Vaidya
- 10:55–11:25 **Aurnab Ghose**, IISER, Pune
Neuropeptides in generating stable innate states: Modulating the feeding drive
- 11:25–11:55 **Vidita Vaidya**, TIFR, Mumbai
Mapping the neurocircuit responses to a serotonergic psychedelic - relevance to anxiety
- 11:55–12:25 **Abhilasha Joshi**, NCBS, Bengaluru
Uncovering the links between hippocampal spatial representations, locomotor stepping, and memory
- 12:25–12:55 **Supratim Ray**, IISc, Bengaluru
Behaviour, mechanisms and circuits through the lens of gamma oscillations
- 12:55–13:00 Discussion
- 13:00–14:00 *Lunch break*
- Session 2C** Lectures by Fellows/Associates
- 14:00–15:50 Chairperson: **Rajesh K Srivastava**, BHU, Varanasi
- 14:00–14:20 **Anusha Shankar**, TIFR, Hyderabad
Budgeting heat and energy: How do birds do it?
- 14:20–14:40 **Sugam Kumar**, BARC, Mumbai
Unique applications of neutron scattering in exploring soft matter phenomena
- 14:40–15:00 **Lolitika Mandal**, IISER, Mohali
A tale of cellular and metabolic essential for the development of blood cells
- 15:00–15:20 **Akhila Sahoo**, UoH, Hyderabad
Sustainable synthetic organic chemistry on pharmaceutical innovation
- 15:20–15:50 *Tea break*

<https://youtube.com/live/6z2d4YtH8ho?feature=share>

15:50–17:20 Business Meeting of Fellows– Vikram Sarabhai Hall
17:20–18:00 Break

Session 2D Public Lecture

18:00–19:00 Chairperson: **Umesh V Waghmare**, JNCASR, Bengaluru
Nayanjot Lahiri, Ashoka University, Sonapat
Finding forgotten cities – Looking back at the discovery of the Indus civilization

19:00–20:00 Cultural Programme
20:00 *Dinner*
Banquet Dinner
[Transportation to Banquet Venue]

10 November 2024 (Sunday)
Venue: Community Centre, IIT Bhubaneswar

09:00–10:20 **Session 3A** Lectures by Fellows/Associates
Chairperson: **U C Mohanty**, Centre for Climate Smart Agriculture, Bhubaneswar

09:00–09:20 **Analabha Basu**, NIBMG, Kalyani
The *Cryptex* called human genome

09:20–09:40 **Nilanjana Kumar**, SGT University, Gurugram
Crashing into the unknown: The role of colliders in uncovering the secrets of the universe

09:40–10:00 **Somobrata Acharya**, IACS, Kolkata
Unveiling solid state luminescence from noncovalent two-dimensional molecular crystals fabricated at air–water interface

10:00–10:20 **Kalika Prasad**, IISER, Pune
Self-organized morphogenesis in plant regeneration: Integrating mechanochemical and geometric cues

10:20–10:50 *Tea Break*

10:50–12:00 **Session 3B** Lectures by Fellows/Associates
Chairperson: **Kulinder P Singh**, IISER, Mohali

10:50–11:10 **Samit K Ray**, IIT, Kharagpur
Emergent semiconductor nanostructures for photonic and energy harvesting devices

11:10–11:30 **Sriram Varahan**, CCMB, Hyderabad
Elucidating the metabolic drivers of fungal morphogenesis

11:30–11:50 **Sanoli Gun**, IMSc, Chennai
On zeros of Dedekind zeta functions

Session 3C Special Lecture

11:50–12:30 Chairperson: **G C Kundu**, KIIT, Bhubaneswar
Sanjeev Galande, Shiv Nadar University, Delhi
Epigenetics: Where nature meets nurture

12:30 *Lunch*

https://youtube.com/live/r_4KzcOPOsE?feature=share

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