

ISRAPS Discussion Meeting on

"Spectroscopy Across Energy Domains: From Fundamentals to Applications"

Jointly Organized by

Indian Society for Radiation and Photochemical Sciences (ISRAPS)

and

Department of Chemistry, Indian Institute of Technology Hyderabad (IITH)

28th September 2024



About ISRAPS: The Indian Society for Radiation and Photochemical Sciences (ISRAPS) is a scientific society established in 1984, headquartered at Radiation & Photochemistry Division, Bhabha Atomic Research Centre, Mumbai, India. The society aims to: foster advances in research pertaining to radiation, photochemical sciences and their related areas; encourage students and research scholars to devote themselves to the pursuit of radiation and photochemical sciences by providing travel grants and awards for ISRAPS sponsored symposia; offer a common platform to academicians, researchers, and students to facilitate networking and exchange of innovative ideas; engage with similar societies or organizations, both within India and internationally, for mutual advantage and to collaborate on scientific initiatives.

About Host Institute: Indian Institute of Technology Hyderabad (IITH) is a premier institute of science and technology established in 2008. IITH has been consistently ranked in the top 10 institutes in India for Engineering according to NIRF making it one of the most coveted schools for science and technology in the country. IITH offers undergraduate programs in all the classical engineering disciplines, applied sciences, design, as well as several modern interdisciplinary areas. The very foundation of IIT Hyderabad is based on research and innovation. The vibrant research culture is evident from the number of patents and publications that IITH produces consistently every year. IITH offers graduate programs at both a masters, and a doctoral level, in several diverse areas. There are separate programs for technology, design, science, and liberal arts.

Aim of the discussion meeting

The aim of the present ISRAPS discussion meeting is to sensitize students and young researchers towards the field of radiation and photochemical sciences. The talks by the experts will highlight the role of spectroscopic techniques using different domains of electromagnetic radiation in developing advances in the area of health and materials sciences.

Theme of the meeting

Spectroscopy across Energy Domains: From Fundamentals to Applications

- 1) High Energy Radiations for Societal and Healthcare Applications
- 2) Laser Spectroscopy of Molecules and Clusters (Theory and experimental)
- 3) Ionizing Radiation in Synthesis of Soft Matter (Hydrogel, Nanofibres, etc)
- 4) Excited State Dynamics of Molecules and Materials

Highlights for Students

There would be seven presentations by eminent speakers focusing on the aforementioned research themes. Students will get the opportunity to present their research through poster presentations. All the poster presentations will be evaluated for selecting the best poster awards sponsored by ISRAPS. Moreover, the registered participants will get participation certificates.

Our Eminent Speakers



Dr. Prakriti R.
Bangal



Dr. Beena G.
Singh



Prof. Vandana
Sharma



Dr. Madhava B.
Mallia



Dr. Surajit Maity



Dr. Juby K. Ajish



Dr. Rajib Ghosh

Registration & Abstract Submission

Participants are required to register online through following link or QR code: <https://forms.gle/wSrGzD1M17FzpFwy7>. **Registration is free of cost**

Abstract Format

PDF file with Title (<150 characters), Author names with Affiliations, Abstract (<1500 characters and a figure) and can be sent to kgavvala@chy.iith.ac.in

Important Dates

Dates	Deadline
Registration	17 th September 2024
Abstract Submission	17 th September 2024



Organizing Committee

ISRAPS Executive Council & Dept. of Chem., IIT Hyderabad

Convener (Local):
Dr. Krishna Gavvala
Department of Chemistry
IIT Hyderabad
Email: kgavvala@chy.iith.ac.in

Convener (ISRAPS):
Dr. Beena G. Singh
Radiation & Photochemistry Division
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INDIAN SOCIETY FOR RADIATION AND PHOTOCHEMICAL SCIENCES

(Reg. No. 617/1985, GBBSD, Bombay Trust No. F-10965)
c/o Radiation & Photochemistry Division
Bhabha Atomic Research Centre, Mumbai - 400 085

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Dr. Nandita Maiti

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ISRAPS Discussion Meeting on

Spectroscopy Across Energy Domains: From Fundamental to Applications

(in association with Dept. Of Chem., IIT Hyderabad)

Venue: A-block Auditorium, Indian Institute of Technology Hyderabad

Date: 28th September, 2024

Tentative Program

Inauguration Function 9.30-10.00

Welcome address by convenor

Information about ISRAPS by President, ISRAPS

Session Chair: Prof. A. C. Bhasikuttan

Talk-1: Dr. Beena G. Singh, Scientific Officer, BARC 10.00-10.40

Title: Interaction of radiation with biological system: From concepts to development of radioprotectors

Tea Break: 10.40-11.15

Session Chair: Prof G. Prabusankar

Talk-2: Dr. Madhava B. Mallia, Scientific Officer, BARC 11.15-11.55

Title: Applications of high energy radiations in human healthcare: How do we do it?

Talk-3: Dr. Juby K. Ajish, Scientific Officer, BARC, 11.55-12.35

Title: Radiation as a tool for synthesis of polymers, hydrogels and nanofibers

Posters: 12.35-13.15

Lunch: 13.15-14.00

Session Chair: Dr. Madhava B. Mallia

Talk-4: Dr. Rajib Ghosh, Scientific Officer, BARC 14.00-14.40

Title: Ultrafast Dynamics of Singlet Fission Materials: Mechanistic Studies and Prospects in Organic Photovoltaics

Talk-5: Dr. Prakriti R. Bangal, Scientist, CSIR-IICT 14.40-15.20

Title: Electronic Spectroscopy in Material Research: A Perspective

Tea Break: 15.20-15.35

Session Chair: Dr Krishna Gavvala

Talk-6: Dr. Vandana Sharma, Professor, IIT Hyderabad 15.35-16.15

Title: Pulse width effect on the ionization and dissociation of Methyl Iodide in the intense femtosecond laser field

Talk-7: Dr. Surajit Maity, Professor, IIT Hyderabad 16.15-16.55

Title: Laser Spectroscopic Investigations of Structure, Stability, and Energetics of the Isolated Molecular Complexes

Concluding Session 16.55-17.30

E-mail: israps.secretary@gmail.com; mathip@barc.gov.in; **Web Site:** www.israps.org.in

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Report On One Day Discussion Meeting Organized At Department Of Chemistry, Indian Institute Of Technology Hyderabad On 28th September 2024.



ISRAPS, in collaboration with the Department of Chemistry, Indian Institute of Technology Hyderabad (IITH), Telangana, had organized a one-day discussion meeting on “Spectroscopy Across Energy Domains: From Fundamental to Applications” on 28th September 2024. Dr. Beena G. Singh from ISRAPS and Dr. Krishna Gavvala from IITH were coordinating to arrange the meeting. The program was formulated on the basis of the spectrum in which speakers are involved in their research. There were a total seven lectures: four from BARC, two speakers were from IITH, and one from CSIR-IICT. The talks covered the fundamental studies involving spectroscopic techniques in understanding the molecular dynamics in the time domain ranging from femtoseconds to microseconds and their role in developing technologies in health and material sciences. There were a total 84 registered participants, including undergraduates, postgraduates, doctoral students, and faculties. The registered students were allowed to present their research through poster presentations, and 10 abstracts for poster presentations were received. All the poster presentations were evaluated for selecting the best poster award sponsored by ISRAPS.

The inauguration session was graced by eminent scientist Prof. G. Narahari Sastry as chief guest. Dr. A. C. Bhasikuttan, President, ISRAPS, talked about ISRAPS and its activities, which were followed by talks on radiation chemistry in the first session, followed by a poster presentation. The talks in the second session post lunch were focused on photochemistry in liquid and gas phase dynamics. Dr. Bhasikuttan, Dr. G. Prabu Sankar, Dr. M. B. Mallia, and Dr. K. Gavvala chaired the session. Dr. B. G. Singh and Dr. R. Ghosh evaluated the poster presentation. The active participation of approximately 80 undergraduate-, graduate-, and doctorate students and faculties from IITH reflected the overall success of the meeting. The poster presented by Ms. Simran Baweja, research scholar, IITH, was selected for best presentation, and she was awarded the citation and cash prize of Rs. 1500/- during the concluding session by Dr. Bhasikuttan. He also gave a talk on career avenues in DAE, which was well received as perceived through many questions raised by the students. The program concluded with a vote of thanks given by Dr. Beena. Overall, the program was successful due to the active participation from the students. Two faculties, Dr. Vandana Sharma (Dept. of Physics) and Dr. Surajit Maity (Dept. of Chemistry), became the life members of ISRAPS.