



Course on

“Design and development of bio compatible analogues to decode the dynamics of complex biological mechanism”

**May 13-May 17, 2025
(Virtual Mode)**

Registration for GIAN is compulsory for all the delegates and the registration fee is non-refundable.

Course Fees:

- **Foreign participants: USD 150**
- **Participants from industry: INR 1000/-**
- **Faculties from academic institute and Govt. research organization: INR 500/-**
- **Students: INR 250/-**

Payment Mode: SBI Collect

To pay through SBI collect, select Payment Google > SBI Collect > Agree > Proceed > Himachal Pradesh > Educational Institutions > NIT Hamirpur > Payment Category > Workshop/ STC/ FDP/Conference

How to Register: After making the payment of registration fees, all the participant will be mandatorily required to fill the Google form on the following link to enter their details.

https://docs.google.com/forms/d/e/1FAIpQLSdEldoBb9fqYkbByV6q91ZC0PeJC4oaXDXZCgf97mtYNqHXpQ/viewform?usp=sf_link

Overview

This course facilitates the enthusiastic participants to learn the practical usage of various biophysical methodologies to study the chemical probing of complex biological mechanisms. Better understanding of the basics of complex biological mechanism in living cell allows the users to identify the cause of several diseases. Design and development of biocompatible analogues are important because of drug/inhibitor development for the serious diseases in human beings. For example, the DNA methylation and G-quadruplexes are recent identification for the key processes/marker of cancer disease. Various spectroscopy and microscopy techniques can be used to monitor the signal of specific fluorescent analogues both in vitro and in the cell. In particular, the fluorescence lifetime technique has high sensitivity compared to any other microscopy techniques. In fact, the lifetime of a molecule is independent of change in fluorophores concentration or excitation intensity or light scattering. Lifetime is a fingerprint of the molecule.

The main focus of this course is to educate the students on various aspects of fluorescence spectroscopic technique in analytical methods for chemical biology.

Who can attend

- A Chemist, Biochemist, B.Pharm, Biotech from R&D laboratories and industries/research scientist interested in designing bio-compatible analogues for various diseases.
- Faculty members, Ph.D research scholars and PG/UG students from universities, academic/research institutes and colleges.

NIT Hamirpur: National Institute of Technology Hamirpur is one of leading NITs in India and is located at Hamirpur, Himachal Pradesh in a campus with scenic landscape. The Institute offers UG, PG and doctoral courses in different leading fields of engineering, science and humanities fostering the spirit of national integration among the students. The institute has renowned faculty members, excellent infrastructure and laboratories with state of art equipment facilities, which results an active engagement in research, consultancy and developmental activities besides imparting regular teaching.



Organized by
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About Department of Chemistry

Department of Chemistry in NITH came in existence as an independent department in 2009. The department is actively engaged in teaching PG (Science) UG (Technical) courses and Ph.D. programs in Chemistry/ Applied Chemistry. Multidisciplinary research activities in cutting-edge areas like Synthetic organic/Inorganic chemistry, Bioactive molecule design and development, Physical/Biophysical Chemistry, polymers and nanomaterial etc. are carried out.

The Faculty



Dr. Elisa Bombarda is an assistant professor in the Laboratory of Bioimaging and Pathologies at the University of Strasbourg (France). Her work on the design of a new dark fluorescence quencher led to an International Patent. Her major scientific interests focus on the investigation of thermodynamics and the kinetics of the interactions of biomolecules as well as on their conformational dynamics, by fluorescence spectroscopy and other biophysical techniques.



Dr. Pamita Awasthi is associate professor, Department of Chemistry, NIT-Hamirpur, Himachal Pradesh. Her research interests are design and synthesis of natural products mimic and quadruplex binders using biochemical and biophysical studies and computational chemistry.



Dr. Jagannath Kuchlyan is an assistant professor in the Department of Chemistry, National Institute of Technology, Hamirpur, H.P. India. His research interests are focused on kinetics and dynamics of a vast range of biomolecules using mainly advanced fluorescence-based methodologies. The overarching goal of his research is to in depth understanding fundamental photophysical behaviors with a large class of biomolecules and materials. He designs fluorescent biomolecules with complex properties, enhanced tuneability by different structures, function, and dynamics which are used in cutting edge biomedical applications.

Course Co-ordinator

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Number of Participants

Number of participants is limited to 40 for this GIAN course. Applications will be accepted on first-cum-first serve basis.

Certification

Minimum 75% attendance is required to issuing the certificates.

Last date of Registration:

10th May 2025

Confirmation by e-mail:

11th May 2025