# DEPARTMENT OF CHEMISTRY
# INFORMATION BROCHURE



**NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR**

**http://www.nith.ac.in**

## About the Department:

The department of chemistry came into existence as an independent department in August 2009. In addition to teaching UG and PG courses floated by various engineering departments, the department also offers Ph.D. in diverse areas of chemistry. The department is currently offering M. Tech. program in Chemical Technology in association with Chemical Engineering department from the academic session 2016-17 with an intake of 15 students from both science and engineering backgrounds. The department has also started M.Sc. Program in Chemistry from the session 2017-18 with an initial intake of 20 students. In the coming years, we plan for the extension and up gradation of the PG programs in terms of intake capacity as well as its curriculum based on current industrial requirements and needs. Further, the department also looks forward for active industrial participation in course structuring and training.

The Department has research facility in several areas such as Polymer, Inorganic, Physical and Organic Chemistry. Students are admitted to carry out research work leading to award of Ph.D. degree. At present there are nine full time research scholars pursuing research. The research work mainly involves: probing of various aspects of polymers including synthesis, characterization and applications, synthetic organic chemistry, bioactive inorganic metal complexes, theoretical and computational chemistry. The department houses various sophisticated equipment, which fulfill the needs of UG/PG and Ph.D. students of the department. The students are given a thorough practical exposure to various instrumental techniques required for their research. Our mission is to train and educate students to the highest level of professional and scientific standards, and, international recognition.

## Faculty members:

| S.No | Name | Designation | Qualification | Area of Specialization |
|---|---|---|---|---|
| 1. | **Dr. A. S. Singha (asingha@nith.ac.in)** | **Professor** | Ph. D | **Organic Chemistry, Polymeric Materials** |
| 2. | **Dr. Pamita Awasthi (pamita@nith.ac.in)** | **Associate Professor** | Ph. D. | **Synthesis and Drug Designing using NMR and Molecular Modeling Techniques** |
| 3. | **Dr. Bharti Gaur (bhartigaur@nith.ac.in)** | **Associate Professor** | Ph. D. | **Polymer Chemistry, Degradation and Stabilization of Polymers, Adhesives, coatings and Composites,** |
| 4. | **Dr. Raj Kaushal (rajkaushal@nith.ac.in)** | **Assistant Professor** | Ph. D. | **Synthetic, Bioinorganic Chemistry and Thermal Analysis** |
| 5. | **Dr. Kalyan Sundar Ghosh (kalyan@nith.ac.in)** | **Assistant Professor** | Ph. D. | **Protein Chemistry, Bio-Organic Chemistry** |
| 6. | **Dr. Jaibir Kherb (jkherb@nith.ac.in)** | **Assistant Professor** | Ph.D. | **Physical Chemistry, Nanomaterials** |

# Laboratories:

## 1. Undergraduate Labs



UG Lab - I



UG Lab - II

## 2. Research Labs



Biophysical Research Lab



Inorganic Research Lab



Polymer Synthesis Lab



Organic Synthesis Lab

## 3. Instrumentation Lab







The instrument laboratory houses the following scientific equipments:

- UV-Vis Spectrophotometer
- Fluorimeter
- Shaking Incubator
- Fast Performance Liquid Chromatography System
- Cooling Ultracentrifuge with various rotors
- Deep Freezer & Ultralow Freezer
- Laminar Flow Hood
- Hot air ovens and Autoclave
- Water Purification system
- BOD, COD, TOC analyzers
- Muffle furnace

## Research and Development Projects:

- UGC Sponsored “Preparation of Natural Fibre Graft Co-polymer Reinforced Composites Using Phenol formaldehyde as novel Matrix Resin” Amount 06.16 Lacs, Completed.
- UGC research project on “Functionalization of Psyllium through Graft Co-polymerization and Interpenetrating Net-work Formation to develop Novel Materials and Their Applications as Drug-delivery Devices” Amount Rs. 04,19,600/-, Completed.
- DST sponsored “Juvenile Hormone analogues as potential Pesticides designing, synthesis, characterization, Biological evaluation and field testing” Amount 13 lacs, Completed.
- DST sponsored “Synthesis, charaterization and evaluation of thermal behaviour and chemical resistance of a new series of dendritic or hyperbranched vinyl ester resins based on rosin acid” Amount 17.88 lacs, completed.
- DST sponsored “Inhibition of fibrillation of beta- and gamma-crystallins: An Alternate way against cataract” Amount 23 lacs, completed.
- UGC Sponsored Major Research Project On “Preparation of Natural Fibre Graft Co-polymer Reinforced Composites Using Phenol formaldehyde as novel Matrix Resin” in Progress Amount 06.16 Lacs, Completed.
- "Exploring Diversity, Functional Dynamics and Biotechnological Applications of Bacterial Communities Inhabiting Hot Water Spring Atop the Himalayan Ranges at Manikaran, Himachal Pradesh, India".No. BT/PR15118/BCE/8/1141/2015, Rs. 5223200 (Rupees Fifty Two Lakhs Twenty Three Thousand Two Hundred Only) (Ongoing)
- DST- Sponsored project entitled “Manufacture of pine needle based fibre/particle board”. Sanction no. DST/SSTP/HP/481 Amount Rs. 40,77,935/- (ongoing)

## Research Publications during last 5 years:

- International and National Journals: 98
- International and national conferences: 36

## Conferences/Workshops Organized by Department:

- MHRD-GIAN course titled “Advanced Nanomaterials: Applications in Disease Diagnosis & Imaging” , 29 May 2016 – 03 June 2016. International Speaker: Prof. Rohit Bhargava, UIUC, USA
- National Conference on “Analytical Chemistry & Molecular Spectroscopy”, 13-14 Oct. 2016.
- Short term course on “Computer Aided Drug Designing (CADD-2016)” 12-17 Dec. 2016
- Workshop on “Newest Technology of Bioinformatics, Drug Discovery and Molecular Simulations”, 22-23 Apr. 2016
- MHRD-GIAN course titled “Chemical, Biochemical and Environmental Issues Related to Cancer and Solutions Addressing Problems”, Sep.2017, International Speaker: Dr. Bo Hang, Lawrence Berkeley National Laboratory, USA.

**Contact Information**
Head
Department of Chemistry
National Institute of Technology
Hamirpur, H.P.
Phone No: 01972-254102