**NIPERs**

**National Institute of Pharmaceutical Education and Research**

Indian Pharma Industry has been a global leader in Generic drugs. To acquire leadership position in drug discovery and development and to continue to excel in the formulations, the Government recognized that human resources/talent pool is very critical. In order to nurture and provide skilled resources to the pharmaceutical and meditech sector, National Institute of Pharmaceutical Education & Research (NIPER) at SAS Nagar Mohali was setup as a registered society under the Societies Registration Act 1860 and given statutory recognition by an Act of Parliament, *viz.* NIPER Act, 1998 and was declared as an institute of national importance.

After the amendment of the Act in 2007, six more NIPERs were set up at Ahmedabad, Guwahati, Hajipur, Hyderabad, Kolkata and Raebareli.

Since inception, more than 10,974 students have passed out from these NIPERs. As part of the academia-industry collaboration and exchange, as on 31.05.2025 NIPERs have signed 330 Memoranda of Understanding with industries and other academic institutions, filed 451 patents, and published 8,496 research papers in reputed journals.

**Status of allotement of Land and construction of campuses of NIPERs**

| Name of NIPER | Year of Establishment | Status of allotment of land and construction |
|---|---|---|
| Ahmedabad | 2007 | About 60 acres land in Gandhinagar, Gujarat has been allocated for NIPER, Ahmedabad and M/s Hindustan Steelworks Corporation Limited (HSCL) is selected as Project Management Consultant (PMC). Hon'ble Home Minister inaugurated the permanent campus of NIPER-Ahmedabad on 30.09.2023 and dedicated to the nation. |
| Guwahati | 2008 | About 66.02 acres land at Village Sila, Changsari Dist, Kamrup was allocated for NIPER Guwahati and M/s Engineering Projects India Limited (EPIL) was selected as Project Management Consultant (PMC). Construction of NIPER-Guwahati campus has been completed and the institute has started functioning from its new campus. Institute dedicated to Nation on 12.01.2024. |
| Hajipur | 2007 | About 12.5 acres of land at EPIP Campus, Industrial Area at Hajipur has been allocated by Govt. of Bihar for NIPER, Hajipur. MoU has been signed with CPWD for construction of campus. The work for construction of campus at NIPER-Hajipur awarded to M/s Tribeni Constructions Limited by CPWD, the PMC. |
| Hyderabad | 2007 | About 50 acres of Indian Drugs and Pharmaceuticals land has been transferred to NIPER-Hyderabad for construction of its permanent campus. M/s NPCC |

| | | |
|---|---|---|
| | | has been appointed as PMC for construction of permanent campus. The work for construction of campus of NIPER-Hyderabad has been awarded to M/s NJR Constructions Private Limited by NPCC. Foundation stone laying ceremony was organised on 12.01.2024. |
| Kolkata | 2007 | About 10 acres of land at Mouza-Gopalpur, P.S. Kalyani, Dist. Nadia has been allocated by Govt. of West Bengal. Further, the Department has allotted 20.55 acres of land of Bengal Chemicals and Pharmaceuticals Limited (BCPL's) plant at Kolkata for construction of permanent campus of NIPER, Kolkata. MoU has been signed with CPWD for construction of campus. The work for construction of campus of NIPER, Kolkata is awarded to M/s Jupiter International by CPWD. Hon'ble Minister (C&F) laid foundation stone for the campus on 25.08.2023. |
| Raebareli | 2008 | About 49 acres land at Village Vinayakpur, Pargana Bachrawan, Tehsil Mahara- jganj, Raebareli has been allocated for NIPER, Raebareli. MoU has been signed with CPWD for construction of campus. The work for construction of campus of NIPER-Raebareli awarded to M/s R.K. The Aluminium People by CPWD, the PMC. Foundation stone laying ceremony of NIPER, Raebareli was organized on 12.01.2024. |

**Details of Chairpersons of the Board of Governors and Directors of NIPERs**

| NIPER | Chairperson, BoG | Director |
|---|---|---|
| Ahmedabad | To be nominated | Prof Shailendra Saraf |
| Guwahati | To be nominated | Prof USN Murty |
| Mohali | To be nominated | Prof Dulal Panda |
| Hajipur | Prof Samit Chattopadhyay, Chair Professor, BITS-Pilani, Goa Campus | Prof K. Ruckmani |
| Raebareli | Dr (Ms.) Madhu Dikshit, Former Director, CSIR-CDRI | Prof Shubhini A. Saraf |
| Kolkata | Prof P Balaram, Former Director, IISc, Bengaluru | Prof USN Murty (Additional Charge) |
| Hyderabad | Dr Satyanarayana Chava, CEO, Lau rus Labs, Hyderabad | Prof Shailendra Saraf (Additional Charge) |

**The Aims and Objectives of NIPERs are as under:-**

a) To nurture and promote quality and excellence in pharmaceutical education and research.
b) To concentrate on courses leading to master's degree, doctoral and research in pharmaceutical education.
c) To hold examinations and grant degrees.
d) To confer honorary awards or other distinctions.
e) To cooperate with educational or other institutions having objectives wholly or partly similar to those of the institute by exchange of faculty members and scholars and generally in such manner as may be conducive to their common objective.
f) To conduct courses for teachers, pharmaceutical technologies, community and hospital pharmacists and other professionals.
g) To collect and maintain world literature on pharmaceutical and related sciences and technology so as to develop an information centre of its own kind for other institutions within the country and in the developing world.
h) To create a central faculty of pharmaceutical instrumentation and analysis for use by the research within and outside the institute.
i) To have a centre to experiment and innovate and to train teachers and other workers in the art or science or pharmaceutical teaching.
j) To develop a world level centre for the creation of new knowledge and transmission of existing information in pharmaceutical areas with focus on national, educational, professional, and industrial commitments.
k) To develop a multi-disciplinary approach in carrying out research and training of pharmaceutical manpower so that the larger interests of the profession, academia and pharmaceutical industry are better served and a pharmaceutical work culture is evolved which is in tune with the changing world trends and patterns of pharmaceutical education and research.
l) To organize national or international symposia, seminars and conferences in selected areas of pharmaceutical education, from time to time.
m) To arrange courses catering to the special needs of developing countries.
n) To act as nucleus for interaction between academics and industry by encouraging the exchange of scientist and other technical staff between the institute and the industry and by undertaking sponsored and funded research as well as consultancy projects by the institute.
o) To pay due attention to studies on the distribution and usage of drugs by the rural masses, considering the socio-economic spectrum in the country.

## Centre of Excellence at NIPERs

Seven centres of Excellence (CoEs) have been set up, one at each of the seven National Institute of Pharmaceutical Education and Research (NIPERs), to create research infrastructure and promote research and development in identified areas. The Centre of Excellence are as follow:

| S. No. | NIPER | Specialisation area of CoE |
|---|---|---|
| 1 | Mohali | Anti-viral and anti-bacterial drug discovery and development |
| 2 | Ahmedabad | Medical devices |
| 3 | Hyderabad | Bulk drugs |
| 4 | Kolkata | Flow chemistry and continuous manufacturing |
| 5 | Raebareli | Novel drug delivery system |
| 6 | Guwahati | Phytopharmaceuticals |
| 7 | Hajipur | Biological therapeutics |

**Admission Procedure in NIPERs:**

The admissions to various branches in MS/PhD in all the seven NIPERs are made through a common Joint Entrance Examination (JEE) held every year in the month of June/July. The applicants, who have qualified Graduate Pharmacy Aptitude Test (GPAT), are eligible to appear in the common JEE examination. Successful candidates of JEE get admission in NIPERs through counselling. All students receive fellowship, as under:

MS (Pharma): ₹12,400/- per month

PhD: ₹ 37,000- 42,000/ - per month

**National Institutional Ranking Framework (NIRF):**

As per National Institutional Ranking Framework of the Ministry of Education, under the 'Pharmacy' category, NIPERs have remained amongst the top pharmacy institute in the country. The details of the year-wise National Institutional Ranking Framework (NIRF) issued by Ministry of Education are as under:

**(Details of year-wise NIRF Ranking of NIPERs)**

| NIPERs | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| **Mohali** | 1st | 3rd | 3rd | 4th | 4th | 6th | 9th |
| **Hyderabad** | 6th | 6th | 5th | 6th | 2nd | 1st | 2nd |
| **Ahmedabad** | 14th | 9th | 8th | 10th | 10th | 13th | 15th |
| **Guwahati** | - | - | 11th | 19th | 13th | 12th | 12th |
| **Raebareli** | - | - | 18th | 13th | 27th | 14th | 14th |
| **Kolkata** | - | - | 27th | 33rd | - | 32nd | 24th |
| **Hajipur** | - | - | - | - | - | 44th | 33rd |

## 1. NIPER, MOHALI

NIPER Mohali was set up vide NIPER Act, 1998 as an "Institute of National Importance". The Institute has been conceptualized, planned and set up to provide leadership in pharmaceutical sciences and related areas not only within the country, but also to the countries in South East Asia, South Asia and Africa. It is only one of its kind in its domain and is highly valued for its outcomes, namely well trained and focused human resources (students/researchers); publications of high impact and novel processes/outputs of industrial relevance in its chosen areas of working.

**Academic excellence**

As part of the academia-industry collaboration and exchange since inception, the Institute has published 3549 articles in journals of repute. Institute has filed 247 patents and 50 Memoranda of Understandings were signed. Since the inception of academic programme, 4890 students have passed out from NIPER Mohali.

**Disciplines:**

1. Biotechnology
2. Medicinal Chemistry
3. Natural Products
4. Traditional Medicine
5. Pharmaceutical Analysis
6. Pharmaceutical Management
7. Pharmacology and Toxicology
8. Regulatory Toxicology
9. Pharmaceutics
10. Pharmacy Practice
11. Pharmacoinformatics
12. Clinical Research
13. Pharm. Technology (Formulations)
14. Pharm. Technology (Process Chemistry)
15. Pharm. Technology (Biotechnology)

**Research areas:-**

A. **Anti-Bacterial and Anti-Viral Drug Discovery and Development**

NIPER SAS Nagar, under Scheme for Promotion of Research and Innovation in Pharma MedTech Sector (PRIP) of Department of Pharmaceuticals, established a Center of Excellence for Anti-Bacterial and Anti-Viral Drug Discovery and Development (COE-ABAVD3).

B. **Neglected diseases –**

Research is carried out in the areas of Leishmaniasis, tuberculosis, and malaria. New molecules are being synthesized and their mechanisms of action are being worked out.

C. **Other diseases**

Metabolic pathways in diseases like inflammation, infection, cancer, diabetes, obesity, Parkinson's disease, neurodegeneration is being worked out. Mitochondrial dysfunction and its involvement in the pathophysiology of diseases, exploring newer druggable targets for diabetic nephropathy/ End-stage renal disease (ESRD), mitigating chemotherapy-induced neuropathic pain, etc.

D. **Drug development and formulation**

a) Improvement of oral bioavailability, synergistic anticancer efficacy and reduced toxicity of drugs
b) New formulations and Novel Drug Delivery System (NDDS).
c) Green sustainable synthesis of Active Pharmaceutical Ingredients (APIs), Key Starting Materials (KSMs) and intermediates
d) Standardization of Herbal drugs and formulations
e) Toxicological studies of in-house developed molecules and those received from the industry.

E. **Other areas**

a) Biopharmaceutical
b) Herbal medicines and Nutraceuticals
c) Epigenetics
d) Chemo-enzymatic synthesis of drugs
e) Monograph on herbals is being developed
f) Study of the effect of aptamers on stabilization of misfolded proteins

g) Assessment of an appropriate and reliable method to diagnose neuropathic pain

h) Artificial intelligence, Machine Learning, Big data Analytics

i) Utility of Physiology Based Pharmacokinetic (PBPK) Modelling in prediction of PK of drugs in special populations and in the study of food effects on drug PK

j) Health Economics and Outcomes Research (HEOR) and pharmacovigilance

k) Cancer Immunology Immunotherapy

**Impact of NIPER**

a) The success of NIPER, Mohali has encouraged the GoI to set up more NIPERs across the country to meet the growing demands of the pharmaceutical sector. NIPER S.A.S. Nagar was ranked 1st in India, 11th in Asia, and 64th in the world in the 2024 QS World University Rankings in Pharmacy and Pharmacology Category wherein 9th Rank in Pharmacy category in MoE NIRF rankings.
b) NIPER Mohali has carried out training programmes for personnel from India and abroad under ITEC, capacity building programmes (World Bank- sponsored) and SMPIC.
c) Skill development training under skill vigyan program were sanctioned by PSCST & DBT program for different roles in pharmaceutical industry.
d) Training and analytical services provided to small and medium-scale enterprises (SMEs): Setting up of a centre for SMEs
e) Member of committee evaluating or monitoring 'Investigational New Drugs'(IND) applications, PLI scheme, Assistance to Pharmaceutical Industry for Common Facilities (APICF), etc.
f) NIPER Mohali is knowledge partner with Department of Industry, Himachal Pradesh for establishing of Medical Devices Park.
g) The institute is working with the Department of Industry, Himachal Pradesh as Part of SIA to establish Bulk Drug Park at Himachal Pradesh.
h) Member of committee revising Indian pharmacopeia.

## 2. NIPER- Ahmedabad

NIPER-Ahmedabad was established in 2007 and is currently located at Gandhinagar. The institute is offering MS (Pharm.), MBA(Pharm), Integrated PhD and PhD programmes in 07 disciplines (Pharmaceutics, Pharmaceutical Analysis, Pharmacology & Toxicology, Biotechnology, Natural Products, Medicinal Chemistry, and Medical Devices). The location of the Institute ensures a symbiotic association with Pharmaceutical and medical devices industries, Hospitals, and other universities. The Institute aspires to strengthen holistic research ecosystem in pharma sector and provide affordable and quality drugs and devices to the country.

The new building of NIPER Ahmedabad was inaugurated by Shri Amit Shah, Hon'ble Minister for Home & Minister for Cooperation in the gracious presence of Dr. Mansukh Mandaviya, Hon'ble Minister of Chemical & Fertilizers and Minister of Health & Family

Welfare and Shri Bhupendra Patel, Hon'ble Chief Minister of State of Gujarat on 30th September, 2023.

**Achievement**

As part of the academia-industry collaboration and exchange since inception, the Institute has published 1039 articles in journals of repute. Institute has filed 35 patents and 41 Memoranda of Understandings were signed. Since the inception of academic programme, 1217 students have passed out from NIPER Ahmedabad.

**Teacher-Student ratio:**

Presently 1: 20

**Research Areas:**

- Biotechnology
- Medicinal Chemistry
- Medical Devices
- Natural Product
- Pharmaceutical Analysis
- Pharmacology and Toxicology
- Pharmaceutics

**Impact of NIPER :**

NIPER-Ahmedabad is committed to building human resource for promoting research and development in the country and contribute towards 'Make in India' initiative as a part of its national responsibility. The Institute has established itself as one of the top technological pharmacy research institutes in the country with research collaboration as an integral part of the growth strategy. It has expanded its outreach to the industry as well as collaborated with the best academic institution of USA, UK, Australia, Ireland and Malaysia for collaborating research, faculty visit, syllabus up-gradation and regulatory reforms with several industries and leading institutes. The Institute has conducted various conferences, symposiums, discussions which were attended by masters' students, PhD, Post Docs and researchers from academia and industry.

## 3. NIPER Guwahati

NIPER Guwahati started functioning in 2008 under the Mentor Institute, Guwahati Medical College, Guwahati up to July 2017. The first regular Director took over the charge of the Director of the Institute on 3rd November 2016. NIPER Guwahati has been functioning from its permanent campus at Changsari, Kamrup (Rural), North Guwahati, Assam, since January 2020. The Institute was dedicated to the Nation on January 12, 2024.

**Achievements**

As part of the academia-industry collaboration and exchange since inception, the Institute has published 847 articles in journals of repute. Institute has filed 36 patents and 44 Memoranda of Understanding were signed. Since the inception of academic programme, 836 students have passed out from NIPER Guwahati.

**Disciplines:**

1. Pharmacology and Toxicology
2. Biotechnology
3. Pharmacy Practice
4. Pharmaceutics
5. Pharmaceutical Analysis
6. Pharmaceutical Technology (Formulations)
7. Medicinal Chemistry
8. Medical Devices
9. Biopharmaceuticals

**Research Areas:**

**Biotechnology:**

a) Target-based and phenotype-based drug discovery in cancer and cardiometabolic disorder
b) Genetically modified bacteria for therapeutic intervention
c) Identifying novel targets and developing an assay system
d) Pharmacogenetics and personalized medicine
e) Disease mechanisms: Inflammation and energy metabolism
f) Developmental defects and cardiac reprogramming
g) Breast Cancer Biology and Drug resistance mechanisms
h) Novel peptide-based anticancer targeted therapeutics for Ovarian cancers
i) Biology of clonal evolution in cancer proregression
j) Basic Biology – Stem cell Biology and Signal Transduction
k) Biopharmaceutical Technology – Therapeutically Important proteins and peptides
l) Screening small molecules and plant-derived products

**Pharmacology and Toxicology:**

a) Cancer and its complications
b) Inflammatory conditions: Rheumatoid arthritis, Ulcerative colitis, and psoriasis
c) Respiratory diseases: Asthma, COPD, and Lung fibrosis
d) Neurodegenerative diseases: Alzheimer's and Parkinson's disease, Epilepsy, etc.
e) Fibrotic disorders like renal fibrosis, hepatic fibrosis
f) Cardio-Renal Pharmacology
g) Diabetes and its complications, mainly nephropathy, cardiomyopathy, and neuropathy
h) Infectious diseases: Malaria
i) Toxicological studies as per OECD guidelines
j) Theranostic approaches

**Pharmacy Practice:**

a) Clinical and Translational Research
b) Biomarkers Discovery
c) Pharmacogenomics
d) Clinical Studies to Diseases Management Programs
e) Medication Utilization Evaluation
f) Medication Safety Evaluation
g) Tribal Population Health Outcomes Evaluation
h) Health Economics and Outcomes Research
i) Evidence Synthesis

**Pharmaceutics:**

a) Dosage form design, development, optimization, and evaluations for BCS-II & III drugs
b) Micro-and nanotheragnosis concepts for the early detection and treatment of malignant diseases and other life-threatening diseases
c) Eradication of biofilm-producing microorganisms from the surfaces of implanted or inserted medical devices into the human body
d) Ligand-anchored lipid/polymer-mediated nanoarchitectonics
e) Pharmacoengineering approaches to fight against neglected diseases
f) Pharmaceutical Additive Manufacturing Engineering / 3D-4D Printing Technology
g) Nanomedicines for organ/lymphatic delivery with deep molecular insights
h) Extrusion based filaments processing for fused filaments applications
i) Translational cutting-edge pharmaceutical research & development

**Pharmaceutical Analysis**:

a) Metabolomics and lipidomic profiling of various cancer, cardiovascular and metabolic disorders

b) Enantiomeric separation of Chiral pharmaceutical compounds by using chiral chromatography technique
c) Enantiomeric stability, Pharmacokinetics, and Metabolic profiling of chiral drugs
d) Biomonitoring of endocrine disruptors and other emerging environmental contaminants for characterizing human exposure by using LC-MS/MS and GC/MS
e) Impact of aggravated environment on the stability of pharmaceuticals
f) Phyto-metabolomics study of the plant from the Northeast Region of India
g) Analytical and bioanalytical method development and validation
h) Pharmacokinetic studies of drugs and metabolites
i) Identification and characterization of drug metabolites.
j) Solid State Characterization - Reference material development
k) Nanotechnological based product development

**Medicinal Chemistry:**

a) Active Pharmaceutical Ingredients (APIs)/ KSMs/ Intermediates Synthesis
b) Sustainable development: Atom-efficient, cost-effective, and environmentally benign new synthetic routes to access bio-active compounds and NCEs
c) Carbohydrate chemistry, heterocyclic chemistry, and multistep synthesis
d) Applications of Organic electrochemistry for drug synthesis
e) Natural Product API (Extraction, Isolation, Purification, and Characterization)
f) Drug Discovery Therapeutic Targets: Microorganisms (Hepatitis C Virus and B acteria), Cancer (HCA, mRNA binding protein-HuR, HDAC), Neurological Disorders (Epilepsy and Alzheimer's disease), ulcerogenic wound healing, etc.
g) AI-guided Drug Design and Drug metabolism.

**Pharmaceutical Technology (Formulations):**

a) Preformulation screening
b) Developing prototype formulations for improved deliverability of BCS class II and IV molecules
c) including natural bio-actives.
d) Dosage form optimization based on QbD principles
e) Amorphous drug delivery technology (amorphous solid dispersions, co-amorphous systems)
f) Reverse engineering of a product's formulation to create Generic Drugs
g) Herbal product developments
h) Osmotic drug delivery systems
i) Multiparticulate drug delivery systems

**Medical Devices:**

a) Biosensors
b) Ultrathin sensors Paper based Diagnostics

c) Nanobiotechnology
d) Microfluidics devices
e) Multiplexed detection of cancer biomarker
f) Scaffold based Tissue Engineering
g) Biomaterials, 3D spheroids
h) Design and Fabrication of Bioreactors
i) Mechanical characterization of hypodermic needles, Single use syringes, catheters and Class A & B Medical Devices
j) Medical Electronic Devices Calibration and performance measurements as per IS/ISO and regulatory standards.

**Biopharmaceuticals:**

a) Cell line development and engineering for Expression of Recombinant Proteins
b) Process Development - Scale-Up and Scale-Down Approaches for Production of Biotherapeutics
c) Downstream Processing for Production of Biotherapeutics
d) Post-translational Modification characterization of biotherapeutics through MS
e) FTIR for high-order structure analysis of biotherapeutics
f) Formulation development for Biotherapeutics.

**Impact of NIPER:**

a) The first & foremost National Institute of Pharmaceutical Education & Research in the entire North East region of India.
b) To foster & nurture the Innovation and entrepreneurship ecosystem in the NER.
c) To promote local traditional healers and potential entrepreneurs from different states of NE states from regional to global level.
d) The institute is running 10 National Centres apart from the regular 09 departments funded by different agencies and several extramural funded research projects from funding bodies like DBT, ICMR, SERB, DST, BIRAC, etc.
e) In the 2024 India NIRF ranking the institute secured 12th position under the pharmacy category.
f) The institute has been supporting 10 nos. traditional healers from North East for scientific validation of their traditional medicines and products.

## 4. NIPER Hajipur

NIPER-Hajipur was established in 2007 under the aegis of the Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Government of India. Initially, the Institute was under the mentorship of the ICMR-Rajendra Memorial Research Institute of Medical Sciences (RMRIMS), Patna, and continued under this mentorship until 31st October 2018. Its own first Director assumed charges with effect from 01.11.2018. NIPER-Hajipur focuses on higher

education and cutting-edge research in pharmaceutical sciences and related fields. It plays a crucial role in advancing the pharmaceutical sector in India and globally.

**Achievements**

As part of the academia-industry collaboration and exchange since inception, the Institute has published 456 articles in journals of repute. Institute has filed 15 patents and 29 Memoranda of Understandings were signed. Since the inception of academic programme, 662 students have passed out from NIPER Hajipur.

**Disciplines:**

- **a)** Biotechnology
- **b)** Pharmacy Practice
- **c)** Regulatory Toxicology
- **d)** Pharmacology & Toxicology
- **e)** Pharmaceutical Analysis
- **f)** Pharmaceutics
- **g)** Biopharmaceutics

**Teacher-Student ratio:** 1:17

**Research Areas**

**Department of Biotechnology**

a) Nano-medicine based drug delivery for fungal, parasitic and liver diseases
b) 3D organ development for replacement of animal models in drug screening
c) Nanozyme development for biomedical application against oxidative stress-mediated diseases
d) Quantum dots –based drug delivery for antimicrobial resistance
e) Novel approaches to regenerative medicine (tissue engineering) and Nano-engineering of stem cells
f) Recombinant DNA technology using bacterial and Pichiapastoris expression system for enzyme assays and antibody development

**Department of Pharmacy Practice**

a) Pharmacovigilance and Materiovigilance.
b) Patient Reported Outcome Measures (PROMs) and Quality of Life (QoL) studies
c) Medication safety, drug utilization evaluation, affordability, and accessibility
d) Infectious diseases, antimicrobial resistance (AMR), HIV, and TB
e) Clinical efficacy and safety studies
f) Personalized medicine and biomarker studies

**Department of Pharmacology & Toxicology and Regulatory Toxicology**

a) Developing pharmacologic, genetic, and stem cell-based interventions for reversing the mood and cognitive deficits ageing, Alzheimer's disease, and

cancer or chemotherapy-induced brain disorders.

b) Identify the simple, cost-effective, and easy-to-use biomarkers for detection, prognosis, and therapeutic assessment of neurological disorders, cancer, diabetes, and infectious diseases.
c) Pharmacokinetic based studies of herbal, synthetic and biological products for establishing its ADMET profile.
d) Toxicological studies of plant based, synthetic and biological product for establishing its safety profile.

**Department of Pharmaceutics**

a) Development of conventional, modified-release, site-specific and targeted drug delivery systems.
b) Development of nanotechnology-based formulations.
c) Particle engineering and solubility enhancement of poor water-soluble drugs.
d) Integrating QbD (DoE) and computer-aided approach in formulation development.
e) In-vitro & ex-vivo / in-vivo characterization of API & formulations.

**Department of Pharmaceutical Analysis**

a) LC-HRMS-based proteomics profiling of microbial, animal tissue, and human serum;
b) Metabolomics database development of C. elegans;
c) Natural product profiling/identification secondary metabolite (Common research Plan with NIPER-G)
d) Nitrosamine control in Pharmaceutical products (Common research plan with NIPER- K)
e) Proteomics-based target identification, and mechanism study of microbial/ cancer drug resistance
f) Food-omics in cancer therapeutics,
g) Industry-relevant analytical method development using LC-HRMS, HPLC/Prep. HPLC by AQbD/QSRR/ICHQ14 principles.

**Department of Biopharmaceuticals**

a) Cloning, expression and purification of proteins from bacterial, fungal and baculovirus expression systems
b) Phage display, yeast surface display and antibody engineering
c) Biochemical engineering, Fermentation technology, and downstream processing
d) Generation of hybridoma technology for monoclonal antibody preparation

## Impact

The Institute continually strives to improve its perception in India ranking. NIPER Hajipur is ranked at 33$^{rd}$ Place in NIRF 2024, which was a significant improvement from previous years. Since inception, 655 post graduate degrees and 23 PhD degrees have been awarded. Research output of 381 publications, 23MoUs and 12 patents has been recorded. A total of 8 funded extra-mural research grants have been sanctioned to our faculty by various funding bodies, including ICMR, DST-SERB, DST (Rare disease), DNDi, etc. Recently, the institute has developed several state-of-the-art research facilities, including an Animal House, Central Instrumentation Facility, Cell Culture Facility, and Pilot Formulation Unit. These additions are designed to

foster research excellence and academic growth. Additionally, infrastructure expansion is underway, with the construction of new buildings to further enhance the institute's research capacity and support.

## 5. NIPER Hyderabad

NIPER-Hyderabad established in September 2007 in the premises of IDPL, R&D centre, Balanagar, Hyderabad. The institute has been declared as an "Institute of National Importance" by the Government of India through an Act of Parliament. The Institute has been serving to develop human resources with excellence through conducting Postgraduate and Ph.D. courses.

**Achievements**

As part of the academia-industry collaboration and exchange since inception, the Institute has published 1421 articles in journals of repute. Institute has filed 66 patents and 90 Memoranda of Understandings were signed. Since the inception of academic programme, 1852 students have passed out from NIPER Hyderabad.

**Disciplines:**

1. Medicinal Chemistry
2. Pharmaceutical Analysis
3. Pharmacology & Toxicology
4. Pharmaceutics
5. Process Chemistry
6. Regulatory Affairs and Regulatory Toxicology
7. Natural Products
8. Pharmacoinformatics
9. Biopharmaceutics
10. Regulatory Affairs
11. Medical Devices and Pharmaceutical Management

**Teacher-Student ratio**

Presently **1:13**

**Core Research areas:**

a) Integrated Drug Discovery & Product Development Programmes
b) Cancer, Inflammation and related proliferative diseases
c) Diabetes and other metabolic disorders

d) Neurodegenerative diseases
e) Infectious diseases
f) Psoriasis
g) In vitro and in vivo screening
h) Development of novel Process for NCEs, Bulk Drugs and Intermediates
i) Development of Analytical Methods, Impurity Profiling and Stability studies
j) Solid state characterization
k) Targeted drug delivery systems

**Impact of NIPER:**

The creation of human resources by imparting high quality education and training in pharmaceutical sciences has helped the pharmaceutical industry. The institute serves as a research institute and focuses on thrust areas of national and international relevance. The Institute has helped in fostering academic and industrial collaborations to address some of the key issues in the pharma sector and the needs of Pharmaceutical industry in the country.

## 6. NIPER Kolkata

National Institute of Pharmaceutical Education & Research Kolkata (NIPER-Kolkata) was established in the year 2007 as an Institute of National Importance *vide* NIPER Act to promote excellence in the field of pharmaceutical education and research and contribute to the growth of the Pharmaceutical Industry in India through teaching, research, and scholarship. The Institute is presently functioning from its interim campus at Chunilal Bhawan, 168- Maniktala Main Road, Kolkata. The institute aspire to serve as premium Institute for Pharmaceutical education and allied research and to start the new era of pharmaceutical development in India. Currently, NIPER Kolkata is Offering eight disciplines out of which new discipline of Biotechnology (M. Tech Program) was introduced in the Academic Session 2024- 25.

**Achievements**

As part of the academia-industry collaboration and exchange since inception, the Institute has published 596 articles in journals of repute. Institute has filed 16 patents and 42 Memoranda of Understandings were signed. Since the inception of academic programme, 742 students have passed out from NIPER Kolkata.

**Disciplines:**

a) Biopharmaceuticals
b) Biotechnology
c) Medical Devices
d) Medicinal Chemistry
e) Natural Products

f) Pharmaceutical Analysis
g) Pharmaceutics
h) Pharmacoinformatics
i) Pharmacology and Toxicology

**Teacher-Student ratio: 1:15**

**Research Areas:**

a) Novel drug delivery system and 3D bioprinting
b) Biomaterial optimization for Medical Devices
c) Biosensor development
d) Advanced manufacturing of dosage forms.
e) Nucleosides as therapeutics agents
f) Development of sphingosine inhibitors
g) Green Chemistry & Flow Chemistry for API synthesis
h) Targeting bio films and quorumsensing.
i) Development of DNA-based therapeutics and diagnostic tools.
j) Structural bioinformatics: new drug discovery/repurposing for Infectious Diseases and Metabolic disorders.
k) Computational designing of anti-microbial agents.
l) Metabolic bio-engineering for the production of small molecules
m) Transcriptomics and Proteomic profiling of phytopharmaceuticals and Herbal formulations
n) Diabetes mediated Non-alcoholic steatohepatitis and Hepatocellularcarcinoma: Pharmacological and biochemical characterization.
o) Diabetes-associated neurological complications
p) Genome editing in immune biotechnology
q) Phytochemistry: chemicals transformation: Herbal products analysis
r) Network Pharmacology of herbal medicines in respiratory diseases.
s) Phytopharmaceuticals development
t) Standardization & fingerprinting of Natural Products
u) Metabolite Profiling, Pharmacokinetics of herbal drugs and herb-drug interactions studies
v) Method development and Validation (Analytical & Bioanalytical)

**RESEARCH INITIATIVES:**

a) NIPER Kolkata Research Council- The institute has established a Research Council with Eminent Scientists in order to provide a roadmap and facilitate the faculty research activities.
b) Centre of Excellence in Flow Chemistry and Continuous Manufacturing- Institute is in the process of establishing the CoE inflow chemistry and continuous manufacturing to undertake research and provide expertise, technical consultancy, skilled personnel, and product management technology for the small and big pharmaceutical companies in their adoption of flow chemistry and continuous manufacturing.

c) Development of anti-aging and anti-cancer agent: Urolithin A
d) Antibody development for Dengue
e) Vaccine development for Salmonella infections in poultry farms
f) Anti-obesity small molecule development
g) Organoid development

**Impact of NIPER:**

NIPER Kolkata is collaborating with various undergraduate and post-graduate institutions on various research projects. New strategies for treating infectious diseases, metabolic disorders, and neurodegenerative disorders are currently being developed by researchers at the Institute.

## 7. NIPER- Raebareli

National Institute of Pharmaceutical Education and Research (NIPER), Raebareli was established in 2008. It offers doctoral and masters programs in Medicinal Chemistry, Pharmaceutics, Pharmacology & Toxicology, Regulatory Toxicology and Biotechnology. It is currently running from its transit campus in Lucknow with a world class central Instrumentation facility within its premises and an animal house to perform pre-clinical studies.

**Achievements**

As part of the academia-industry collaboration and exchange since inception, the Institute has published 653 articles in journals of repute. Institute has filed 39 patents and 36 Memoranda of Understandings were signed. Since the inception of academic programme, 742 students have passed out from NIPER Raebareli. The Division of Pharmaceutics at NIPER-Raebareli developed new technologies for nano-based drug-delivery systems for better delivery of anti-psychotic and anti-tubercular drugs.

**Disciplines:**

1. Medicinal Chemistry
2. Pharmaceutics
3. Pharmacology and Toxicology
4. Regulatory Toxicology
5. Biotechnology

**Teacher: Student Ratio -** 1:16

**Research Areas:**

a) Neurodegenerative diseases

b) Heavy Metal Toxicity

c) Japanese Encephalitis

d) Tuberculosis

e) Development and evaluation of drugs using Nano formulations.

f) Development of green and eco-friendly synthetic methods

g) Projects: Ongoing: 21 worth ₹ 7.17 Cr.

**Impact of NIPER:**

NIPER-Raebareli has emerged as an Institution of significance both in academics and research particularly in Central India with modern laboratories, highly sophisticated instrument. The Pharma industries have shown interest in collaborating with us besides training our students for short term and long term basis. The institute initiated collaborative projects/ work with national and international academic and research institutes in the area of immediate importance like Japanese Encephalitis, Tuberculosis and neurodegenerative diseases. An online portal has been created to facilitate seamless sample analysis for drug discovery. The institutes also provides highly skilled human resources for the Indian pharmaceutical industry.

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**Director's of NIPERs**

| S.no. | NIPER | Director | Landline Number | Email | Mobile Number | Address |
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| 2. | Ahmedabad | Prof. Shailendra Saraf | +91 079 65181200 | director[at]niperahm[dot]ac[dot]in | 9826150327 | National Institute of Pharmaceutical Education & Research (NIPER), Ahmedabad, Opposite Air force Station, Palaj, Gandhinagar, Gujarat 382355 |
| 3. | Hajipur | Prof. K. Ruckmani | +91 (06224) – 277226 | director[at]niperhajipur[dot]ac[dot]in | 9842484568 | National Institute of Pharmaceutical Education & Research (NIPER), Hajipur, Export Promotion Industrial Park (EPIP) Industrial Area Hajipur, Dist: Vaishali, Bihar-844102 |
| 4. | Hyderabad | Prof. Shailendra Saraf (Additional Charge) | 040-23073741 | director[dot]niperhyd[at]gov[dot]in | 9826150327 | National Institute of Pharmaceutical Education & Research (NIPER), Hyderabad, Balanagar, Hyderabad, Telangana 500037 |
| 5. | Guwahati | Prof. USN Murty | 0361-2800401 | director[at]niperguwahati[dot]ac[dot]in | 9127060998 | National Institute of Pharmaceutical Education & Research (NIPER), Guwahati, Sila Katamur (Halugurisuk) P.O : Changsari, Dist: Kamrup, Assam, India, Pin: 781101 |
| 6. | Kolkata | Prof. USN Murty (Additional Charge) | 033-23200086 | director[at]niperkolkata[dot]edu[dot]in | 9127060998 | National Institute of Pharmaceutical Education & Research (NIPER), Kolkata Chunilal Bhawan,168, |

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| 7. | Raebareli | Prof. Shubhini A. Saraf | 0522-2975587 | director[at]niperraebareli[dot]edu[dot]in<br><br>director[at]niperrbl[dot]ac[dot]in | 9628176500 | National Institute of Pharmaceutical Education and Research, Raebareli, Bijnor-Sisendi Road, Sarojini Nagar, Near CRPF Base Camp, Lucknow (UP)- 226002 |

**Link to NIPERs**

| S.no | NIPER | Website |
|---|---|---|
| **1** | Mohali | https://niper.gov.in/ |
| **2** | Ahmedabad | https://niperahm.ac.in/ |
| **3** | Hajipur | https://www.niperhajipur.ac.in/ |
| **4** | Hyderabad | http://www.niperhyd.ac.in/ |
| **5** | Guwahati | https://niperguwahati.ac.in/ |
| **6** | Kolkata | https://www.niperkolkata.edu.in/ |
| **7** | Raebareli | https://niperraebareli.edu.in/ |