



Jan – June'23

NIPER Guwahati

NEWSLETTER

Vol. II Issue I



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- Dr. Purusottam Mohapatra - Member
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- Dr. Naveen Chella - Member
- Dr. Pramod Kumar - Member
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- Mr. Arun D - Member
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- Mr. Tapan Nath - Member Secretary

Director's Message

I extend my heartiest greetings to the faculty and staff members as well as the students of NIPER Guwahati on the New Year 2023. Throughout its existence, NIPER Guwahati has faced both challenges and triumphs, transforming from a temporary campus under the guidance of Gauhati Medical College to a permanent campus nestled amidst the picturesque hills of Changsari. With the establishment of ten crucial National Centers, funded by various ministries, and the integration of state-of-the-art instrumental facilities, NIPER Guwahati has truly embarked on an arduous yet rewarding journey, fueled by the positive energy of Assam's soil and the unwavering spirit of our NIPER family.



The last year has proven to be a momentous one for NIPER Guwahati, as it soared from the 19th position to the 13th position in the prestigious National Institutional Ranking Framework (NIRF)-2022, specifically in the Pharmacy category. This leap in rankings serves as a testament to our institution's values, potential, and dedication to excellence in teaching, learning, research, and resource utilization.

We take immense pride in the global impact of our relentless efforts, exemplified by the synthesis of four in-house Reference Materials (RMs) for the National Drug Testing Laboratory (NDTL) in New Delhi. These RMs are currently utilized in WADA-accredited laboratories worldwide, playing a crucial role in combating doping in sports. Additionally, three of our esteemed faculty members were featured in Stanford's list of the world's top 2% scientists, further solidifying our institution's foundation.

On the research front, we have made significant progress in raising the quality of our peer-reviewed publications, securing intellectual property rights, enhancing student campus placements, and improving teaching and training. Our focus remains on further improving our research output and translating it into practical solutions that can address socially relevant problems. We are also dedicated to fostering entrepreneurship by identifying potential incubates and nurturing their talents, both locally and nationally. Mutually beneficial research collaborations with esteemed organizations such as AIIMS Guwahati, Indian Institute of Science (IISc), Bengaluru, Indian Pharmacopoeia Commission, and C-DAC Pune will help achieve our visions.

Looking ahead to the new year, 2023, we are excited about completing the final phase of construction and infrastructure-related activities. This includes the creation of herbal gardens, recreation facilities, and a children's playing ground, all aimed at enhancing the satisfaction and happiness index for our NIPER-Guwahati family.

Best wishes!

Dr. USN Murty

Foreword

NIPER Guwahati encompasses eight academic divisions and nine centers of excellence articulated at varied visions. It is also commencing a new department – Department of Biopharmaceuticals. To explain the activities and pivotal role of Medical Devices Testing and Calibration Facility (MDTF), the only lab available in the entire Northeast region, the third Newsletter particularly provides an in-depth coverage for the MDTF. The kind of services such as Medical Electronics Calibration Section and Mechanical Testing Section by the MDTF will certainly provide an impetus to the healthcare providing premises located in this region, and other regions of Indian subcontinent in general to render quality medical care.



This Newsletter meticulously covers in a precise manner the so-called missed out events and activities for showcasing to the shareholders of this institute. The visitation by renowned experts, bureaucrats, and academicians along with gear up session by BioNEST Incubation Centre looks really a boosting to shape up the young minds of students and a networking opportunity for faculty members as well. It indicates the progressive growth of each division of this institute to tide over the recent advancement in their corresponding fields of interest.

We must thank all of those who have participated in preparing the Newsletter by contributing with the knowledge, work and efforts for its successful release. We hope that the variety of approaches from stakeholders to student community will become a firm stepping stone for the next issue of the Newsletter.

Prof. (Dr.) Tamilvanan Shunmugaperumal
Chairman
Committee for Publishing of Newsletter

Medical Devices Testing & Calibration Facility

In Focus

Compiled by
Mr. Arun D, Scientist/TS Gr I

Medical Devices Testing and Calibration Facility (MDTF) was established in 2022 under the mentorship of Department of Medical Devices, NIPER-G and was dedicated to the nation on 28th April 2023 by Ms. Aparna S, IAS, Hon'ble Secretary, DoP in the presence of Dr. USN Murty, Founder Director, NIPER-Guwahati.

What MDTF does?

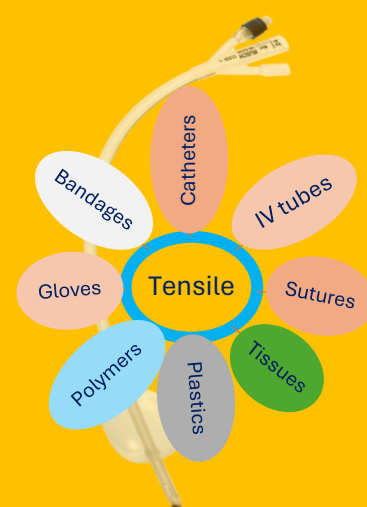
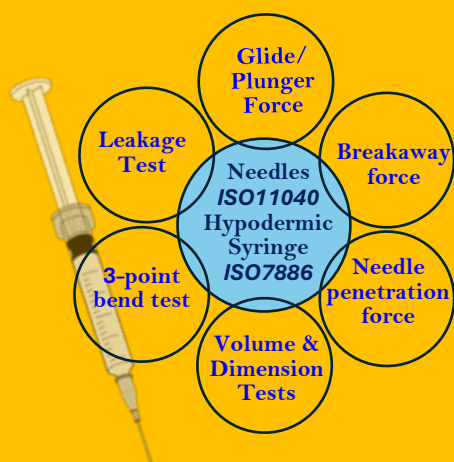
MDTF is the only dedicated Medical Devices testing and calibration lab in the entire Northeast region. MDTF follows ISO 17025:2017 LQMS, IEC 60601-1 for testing and calibration of medical devices as per MDR-2017, CDSCO, EUMDR and USFDA regulations. MDTF is verging towards being accredited by NABL for the same.

Why Testing and Calibration of Medical Devices are important?

MDTF functions with the motto **“Tested once at NIPER-G, accepted globally”** by adapting all requisites as per Indian and global regulators. This will facilitate the authenticity of a make-in-India product globally for various other Class-A and Class-B medical devices. The periodical calibration of Medical Electronic Devices in hospitals assures patient safety and least failure of devices.

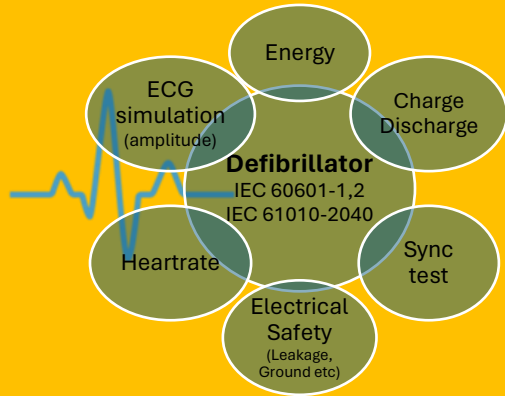
MDTF comprises two sections: Medical Electronics Calibration Section and Mechanical Testing Section

The mechanical section houses a Universal Testing Machine (250N and 5kN) with various grips and fixtures suitable for testing syringes, needles, bandages, sutures, surgical gloves, catheters etc.



The Electronics Calibration Section houses Defibrillator Analyzer, Pacemaker Analyzer, ECG simulator with variable load resistance, Electrical Safety Analyzer, Digital Storage Oscilloscope, Function Generator, Precision Multimeter and digital vernier caliper /screw gauge.

Also, the facility houses various medical devices such as Defibrillator, ECG, Patient Monitor, External Pacemaker, BP apparatus, Syringe pump, Infusion Pump, Video Laryngoscope, Lithotripter, Oxygen concentrator, hearing aid device, Glucometer etc.



MDTF welcomes MD start-ups, MSMEs to get their products tested and certified, unlocking their doors for export. As per MDR-2017, it is mandatory to test an MD at a third-party NABL standards laboratory.

To facilitate skill development, MDTF will provide Hands-on Workshops and certificate courses in Medical Devices Testing and Calibration. In this context, two hands-on workshops with 35 participants have already been organized.



Why approach MDTF?

Quality Testing

MDTF offers a high-quality technical service by adhering to QA and IMDR, EUMDR requirements.

Customer-centric

MDTF so values its customers that it commits to quality first as per IS and ISO/IEC/ASTM standards.

Technical and Regulatory Expertise

MDTF has an extensive knowledge base and diverse capabilities. It continuously improves and advances its testing and Calibration capabilities.

MDTF has special expertise in several areas:

Mechanical testing, Calibration of Medical Electronic Devices, Biomaterials testing etc. We are also expanding our testing parameters for chemical and biological requirements in near future.

Seminars & Workshops

Research Facility Training on Exposure to Advanced Scientific Research

This event was a part of SSR activity of the SERB, CRG project to Dr. Purusottam Mohapatra, DBT Ramalingaswami Fellow, NIPER Guwahati conducted on 6th January 2023. A total of 17 students from six different universities and Pharmacy institutes in Guwahati participated in the one-day training program. The students received exposure to the scientific research at NIPER Guwahati and had a detailed interaction with different faculty members on the future research scope in biomedical and pharmaceutical sciences.



One-day Workshop on *In-vitro* Models of Drug Discovery

This event was a part of SSR activity of the SERB, CRG project to Dr. Purusottam Mohapatra, DBT Ramalingaswami Fellow, NIPER Guwahati conducted on 7th January 2023. A total of 10 faculty members from five different universities and Pharmacy institutes in Guwahati participated in the workshop. The workshop aimed at providing exposure on various *in vitro* models used in drug discovery as well as various hands-on experiments.



NIPER faculty participates in Faculty Development Program at Tezpur (Central) University

Faculty members of NIPER Guwahati participated in a week-long blended Faculty Development Program on Effective Teaching Pedagogy at the Teaching & Learning Centre at Tezpur (Central) University in association with NIPER Guwahati from 18th to 24th January 2023.



Clinical Expert Prof (Dr) Subhash Khanna’s interaction with Faculty of NIPER Guwahati

Prof (Dr) Subhash Khanna, an eminent Laparoscopic Surgeon and a Robotic surgery researcher shared his views on technology development and requirements in Endoscopy and Laparoscopy during an interaction session on 3rd February 2023. The session included practical demonstration of difficulties during a surgery, and the interaction gave insight to the clinical requirements of modifications in Medical Devices.



Guest Lecture on "Bio fabrication of patient-specific tissue-engineered bone implants from natural and synthetic biomaterials"

Department of Medical Devices organized a Guest Lecture on 7th February 2023 by Dr. Uday Kiran Roopavath, Medoja Health Pvt. Ltd., Telangana. The lecture ignited the young minds to a technocrat perspective for patient-specific medication and development of bone implants using natural and synthetic biomaterials.



BIG Grant Writing Session by Bio-NEST Incubation Centre, NIPER-Guwahati

Mr. Arpan Ghosh, Program Manager, KIIT TBI, Bhubaneswar and Mr. Ray Saisoubhagya, Program Associate, KIIT TBI, Bhubaneswar delivered an online lecture during BIG Grant writing session on 9th February 2023 organized by Bio-NEST Incubation Centre, NIPER, Guwahati.



Guest Lecture on Artificial Intelligence in Medical Devices

A Guest Lecture on “Artificial Intelligence in Medical Devices” was conducted by the department of Medical Devices on 11th February 2023. Prof. Nayan M Kakoty, Co-Ordinator, Technology Enabling Centre and Professor, Department of ECE, Tezpur University delivered the lecture where he introduced the students to python programming language and executed a program to operate prosthetic limb developed by speaker’s lab “Rehabilitation Robotics”. The Lecture has opened the approach of Artificial Intelligence, programming and Robotics in Medical Devices.



Industry-Academia linkage Workshop on Medical Devices Testing and Calibration

A two-day workshop on Medical Devices Testing and Calibration was conducted on 14th & 15th February 2023. The industry-academia linkage workshop was organized by the Department of Medical Devices, NIPER Guwahati in collaboration with M/s Helix Pvt. Ltd. and Fluke Biomedical.



Advanced Drug Design & Medicinal Chemistry (ADDMC-23) Workshop

A two-day workshop on Advanced Drug Design and Medicinal Chemistry (ADDMC-23) was conducted on 9th & 10th March 2023. The workshop was organized by the Department of Medicinal Chemistry where a number of experts across the country participated.



Research Collaboration: India and Thailand; An expert interaction with Faculty

Dr. Chonakarn Jatchavala, Faculty from Prince of Songkla University, Thailand, delivered a lecture on potential collaboration and training for research and innovation in Pharmaceutical Sciences and Medical Devices sectors between the Prince of Songkla University, NIPER Guwahati as well as AIIMS Guwahati on 16th March 2023. Dr. Ramdas Ransing from AIIMS Guwahati too participated at the program. The experts also visited the facilities at NIPER Guwahati and interacted with the students.



DBT Wellcome Trust India Alliance workshop

A workshop on science communication was conducted by DBT Wellcome Trust India Alliance at NIPER Guwahati on 21st March 2023. Faculty and students from NIPER Guwahati participated in the workshop and thoroughly discussed various critical aspects of writing an effective grant proposal.



Workshop on next generation sequencing and data analysis

A workshop on next generation sequencing and data analysis was conducted at NIPER Guwahati on 31st March 2023. Experts from the field Dr. Bhabatosh Das, Associate Professor, THSTI, and Dr. Mujibur R Khan, Associate Professor, IASST, spoke elaborately on the theme of the workshop.



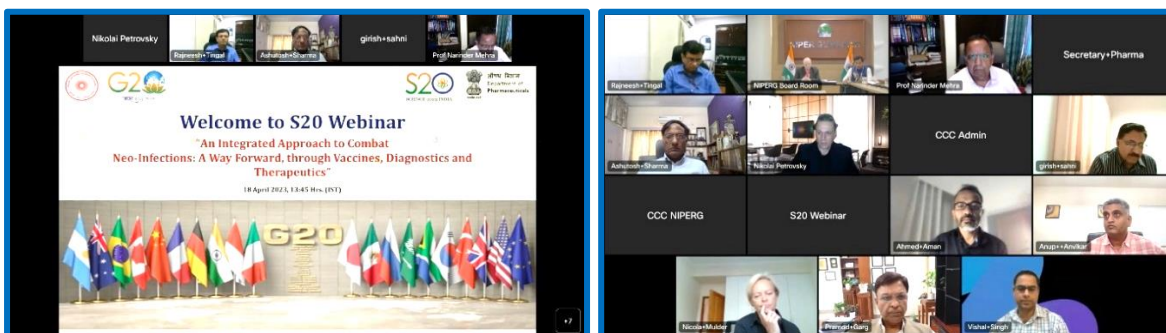
Ideathon #3 (Bio-innovation Challenge) organized by Bio-NEST Incubation Centre

Dr. Pawan Sharma, Senior Consultant, Medical Biotechnology (R&D), chaired a jury panel of the Ideathon #3 (Bio-innovation Challenge) at NIPER Guwahati on 27th March 2023. The other jury members including Dr. Yogmaya Verma (COO, Indigram Labs), Dr. Suryamani Tripathi (Legal Counsel, ICRISAT, Hyderabad) and Dr. Prabodh Bora (Professor & Head of Animal Biotechnology and Coordinator State Biotech Hub, Guwahati) evaluated the presentations of which the top three were recommended for a pre-incubation support of Rs. 1 lakh each from Bio-NEST.



S20 Webinar on “An Integrated Approach to Combat Neo-Infections: A Way Forward, through Vaccines, Diagnostics and Therapeutics”

Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Govt. of India in coordination with The Indian National Science Academy (INSA) New Delhi organized an online S20 webinar on 18th April 2023. In the S20, India aims to achieve convergence in discussions across various multilateral fora engaged in health co-operation and health working groups (HWGs) towards integrated approach.



Workshop on “Start-Ups in Knowledge Economy of Northeast Region”

This workshop was conducted on 20th April 2023. The acclaimed speakers Dr. D. Yogeswara Rao, Visiting Professor, University of Hyderabad, Former Advisor, office of Principal Scientific Advisor, Govt. of India, Former Head, TNBD, CSIR and Dr. (Prof.) Subhash Khanna, Chief Medical Director, Chief Surgical Consultant, Swagat Endo Laparoscopic Surgical Research Institute, Guwahati, Assam delivered lectures on Start-Ups and Entrepreneurship in Northeast India. More than 120 participants attended the mentoring session.



Seminar on “Safety in Pharma and Chemical Sector”

This seminar was conducted on 21st April 2023 which focussed on the safety guidelines, handling of various hazardous chemicals etc. Dr. Pintu Bhattacharya, Sr. Scientist, from the Merck group, delivered the lecture which started with the safety pledge by the students and faculty.



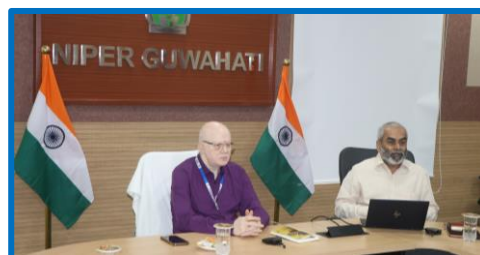
One-day seminar on Medical Devices Testing & Calibration: Current Scenario & Vision 2030

This one-day seminar was conducted on 4th May 2023 where Prof. K. Sankaran, Professor of Eminence, National Networking Consultant, NHHID, Anna University, Chennai and Prof. S. Muttan, Professor of Eminence, Department of EEE, Anna University, delivered lectures on the role and importance of testing and calibration in Medical Devices. They also spoke on inculcating industry-oriented and interdisciplinary Medical Devices research as well as integrating the vast multidisciplinary Medical Devices sector to achieve the visions of union government as depicted in National Medical Devices Policy-2023.



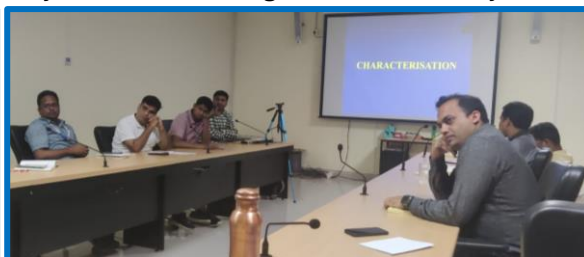
Industrial Expert Lecture on Saroglitazar

Dr. Mukul R Jain, Industrial Expert from Zydus Research Centre, delivered a talk on “Saroglitazar: Leading India in the race to address the global problem of NAFLD and NASH” on 23rd May 2023.



Training for NIPER G Faculty on GLP

GLP expert Dr. Harinarayana Rao conducted a series of training session on GLP components, role and responsibility of Study Director and Study Personnel during the month of May 2023.



Events

New Year celebrations

Dr. USN Murty, Director, NIPER Guwahati, addressed the faculty, staff and students on the New Year 2023 and extended his warm wishes to all during a celebratory meeting on 2nd January 2023. He also urged all to keep working hard and contributing to the greatness of the institute.



विश्व हिंदी दिवस

राष्ट्रीय औषधीय शिक्षा एवं अनुसंधान संस्थान (नाईपर) गुवाहाटी में दिनांक 10 जनवरी, 2023 को राजभाषा हिंदी के प्रगामी प्रयोग को बढ़ावा देने तथा राजभाषा संबंधी अधिनियमों, नियमों एवं आदेशों के अनुपालन हेतु विश्व हिंदी दिवस का आयोजन सेमिनार हॉल में किया गया। इस कार्यक्रम में 15 शिक्षकगण एवं 21 कर्मचारियों ने भाग लिया। इस अवसर पर गणमान्य अतिथि के रूप में उप निदेशक, गुवाहाटी, श्री बदरी यादव, को आमंत्रित किया गया था। इस अवसर पर संस्थान के निदेशक, प्रो. यू.एस.एन. मूर्ति, कुलसचिव, प्रो. राधाकृष्णानंद पि, शिक्षकगण एवं कर्मचारियों की गरिमामयी उपस्थिति प्रेरणादायी रही।



74th Republic Day celebration

The 74th Republic Day celebration program was held on 26th January 2023 with due fervor. Dr. USN Murty, Director, NIPER Guwahati, addressed the faculty, staff and students as the Chief Guest and recalled the contributions of the pioneers of the country who devised the constitution.



Cancer Awareness Rally

A Cancer Awareness Rally was conducted by the faculty, staff and students of NIPER Guwahati on the occasion of World Cancer Day on 4th February 2023. As part of the rally, the participants walked together in the Changsari area generating awareness on cancer.



हिंदी प्रबोध प्रशिक्षण

हिंदी शिक्षण योजना के तहत राष्ट्रीय औषधीय शिक्षा एवं अनुसंधान संस्थान (नाईपर) गुवाहाटी में जनवरी-जून 2023 के सत्र में प्रबोध प्रशिक्षण कार्यक्रम का आयोजन किया गया। जिसमें 05 शिक्षकगण एवं 6 कर्मचारी को हिंदी शिक्षण योजना, गुवाहाटी, सहायक निदेशक, श्रीमती दिव्या जी द्वारा प्रशिक्षण दिया गया। जिसमें 03 शिक्षकगण एवं 06 कर्मचारी परिक्षा में उत्तीर्ण हुए।



Inauguration of Central Animal Facility (CAF)

The new Central Animal Facility (CAF) was inaugurated on 22nd May 2023 by Dr. USN Murty, Director, NIPER Guwahati. It is established with financial support from the Ministry of DoNER and Department of Pharmaceuticals, Govt. of India on an area of ~1100 square meters with a complete infrastructure to support the needs of various investigators of NIPER-G and other organizations of our nation. The facility aims to provide and maintain specific pathogen-free (SPF) rodent research models to investigators of NIPERG, government institutions/universities and private industries required for drug discovery and development from the North Eastern and other Region of the country.



हिंदी टिप्पण लेखन कार्यशाला

राष्ट्रीय औषधीय शिक्षा एवं अनुसंधान संस्थान (नाईपर) गुवाहाटी में दिनांक 26 मई, 2023 को राजभाषा हिंदी के प्रगामी प्रयोग को बढ़ावा देने तथा राजभाषा संबंधी अधिनियमों, नियमों एवं आदेशों के अनुपालन हेतु हिंदी टिप्पण लेखन पर कार्यशाला का आयोजन सेमिनार हॉल में किया गया। इस कार्यशाला में 18 शिक्षकगण एवं 22 कर्मचारियों ने भाग लिया। इस अवसर पर गणमान्य अतिथि के रूप में सहायक निदेशक, हिंदी शिक्षण योजना गुवाहाटी, श्रीमती दिव्या, को आमंत्रित किया गया था। इस अवसर पर संस्थान के निदेशक, प्रो. यू.एस.एन. मूर्ति, कुलसचिव, प्रो. राधाकृष्णानंद पि, शिक्षकगण एवं कर्मचारियों की गरिमामयी उपस्थिति प्रेरणादायी रही।



World Environment Day observance

The World Environment Day was observed by the faculty, staff, students as well as residents of the Type III and Type IV quarters on 5th June 2023. The event was conducted by the Environment and Safety Committee where all the participants conducted cleaning of the campus.



The 6th Convocation

The 6th Convocation of NIPER Guwahati was held on 22nd June 2023 at its permanent campus at Changsari. A total of 132 students, including 120 PG students from the 2021-23 batch and 12 PhD students, were awarded degrees during the ceremony. Prof. Ashok Puranik, Executive Director, AIIMS Guwahati, graced the programme as the Chief Guest while Shri Rajneesh Tingal, Joint Secretary, Department of Pharmaceuticals (Govt. of India), attended as the Guest of Eminence.



Awards & Achievements

- **Dr. Subham Banerjee**, Associate Professor, Department of Pharmaceutics, was awarded as **Recognized Mentor for Joint Indian Science Academies Summer Research Fellowship-2023 Programme** organized in February 2023.
- **Mr. Purushottam Suryavanshi**, a PhD scholar, received Consolation Prize at 21st International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems-2023 by Control Release Society (CRS) Indian Local Chapter, Mumbai, India in February 2023.
- **Dr. Naveen Chella**, Assistant Professor, Department of Pharmaceutical Technology (Formulations), was awarded the **“Associate Fellow of the Telangana Academy of Sciences” for the year 2021** in March 2023.
- **Mr. Purushottam Suryavanshi**, a PhD scholar, bagged 3rd Prize in a Poster presentation competition organized at Dissolution Research Presentation India (DRPI)- 2023 in June 2023.
- NIPER Guwahati transferred Technology to Guwahati-based company M/s Trans Virtual Pvt. Ltd. on 5th April 2023 on **economical production process of Lutein from marigold flower**. As part of the agreement, NIPER Guwahati received Rs. 6 lakh as the initial charges from the company.



MoUs signed/Renewed

- NIPER Guwahati renewed an MoU with Assam down town University, Guwahati on 4th March 2023. The MoU focusses on clinical exposures and case studies for students as well as faculty exchange.



- An MoU was signed between NIPER Guwahati and Indian Institute of Science (IISc), Bengaluru on 16th January 2023 focusing on research collaboration between the institutions in the field of medical devices testing and calibration, student and faculty exchange as well as Tech Transfer.



- NIPER Guwahati signed an MoU with Indian Pharmacopoeia Commission (IPC) on 23rd May 2023 focussing on research collaboration in the pharmacovigilance field, student training, and exchange of personnel.



- NIPER Guwahati signed an MoU with AIIMS Guwahati on 24th May 2023 focussing on research collaboration, student and faculty exchange.



- NIPER Guwahati entered MoU with Centre for Development of Advanced Computing, Govt India on 10th February 2023 to work on Supercomputer PARAM Sidhi for various drug discovery studies. NIPER Guwahati already working on PARAM bio embryo 100 TF machine. NIPER had a CoE on Advanced centre for High Performance computing for drug discovery funded by MietY, Govt India and also a project of National Supercomputing Mission. Dr. USN Murty, Director NIPER Guwahati and Col. AK Nath, Executive Director, CDAC, signed the MoU in the presence of Dr Rendra Joshi, Sr Director and Head Bioinformatics, CDAC



- NIPER Guwahati renewed an MoU with GNRC Hospital on 12th April 2023. The MoU focusses on research collaboration, clinical exposures and case studies for students.



Campus Visits

- Shri Bhagwanth Khuba, Hon'ble Minister of State (Chemicals & Fertilizers), visited NIPER Guwahati on 13th January 2023. During his visit, Shri Khuba took note of the progress of the construction of the permanent campus and visited the laboratories and facilities. He also interacted with the faculty and students at the institute.



- Commodore Amit Rastogi (retd.), CMD, NRDC, visited NIPER Guwahati on 5th January 2023. During his visit, he held discussions with Dr. USN Murty, Director, NIPER Guwahati, visited lab facilities, and interacted with faculty members and students.



- Three members from the German Academic Exchange Service and German Research Foundation visited NIPER Guwahati on 20th March 2023. The members delivered presentations on the prospect of higher studies and research in Germany and interacted with the students.



- Prof. Dulal Panda, Director, NIPER SAS Nagar, visited NIPER Guwahati on 1st April 2023. He visited the labs and facilities, interacted with the students, and addressed the faculty, staff and students.



- Ms. S Aparna, IAS, Secretary, Department of Pharmaceuticals, Govt. of India, visited NIPER Guwahati on 28th April 2023. During her visit, Ms. Aparna surveyed the progress of the various ongoing constructions at the campus. She also visited the labs and facilities, interacted with the students, and addressed the faculty and staff.



EMR Grants

Various Extra Mural Research Grants sanctioned in the period of January to June 2023

Sl	Name of Project	Principal Investigator	Funding Agency	Amount	Duration
1	Efficient process development strategies for prevalent 'rare disease' drugs	Dr. Kapileswar Seth	DST	Rs. 50 lakh	2023-26
2	Responsive encapsulation device by 4D printing for potential drug delivery applications	Dr. Subham Banerjee	MedTech innovation Call, AMTZ, Andhra Pradesh	Rs. 10 lakh	2023-24
3	BIRAC-Biotechnology Ignition Grant (BIG)	Dr. Kalyan Sethi	BIRAC	Rs. 50 lakh	2023-25
4	Process Technology for separating and purifying individual actives in curcumin extracts	Dr. Pramod Kumar	DST-TIFAC	Rs. 10 lakh	2023-24
5	Light-activating engineered herbal gel for minimally invasive tumor therapy	Dr. Deepak Bharadwaj PVP	DST-TIFAC	Rs. 10 lakh	2023-24
6	Targeting Branched-chain amino acids metabolism to overcome resistance to therapy in breast cancer	Dr. Sudhagar S	ICMR	Rs. 30 lakh	2023-26
7	Thermoresponsive in-situ gel bearing pregabalin loaded nanoparticles for management of Glaucoma	Dr. Arvind Gulbake	SERB	Rs. 30 lakh	2023-26

Publications

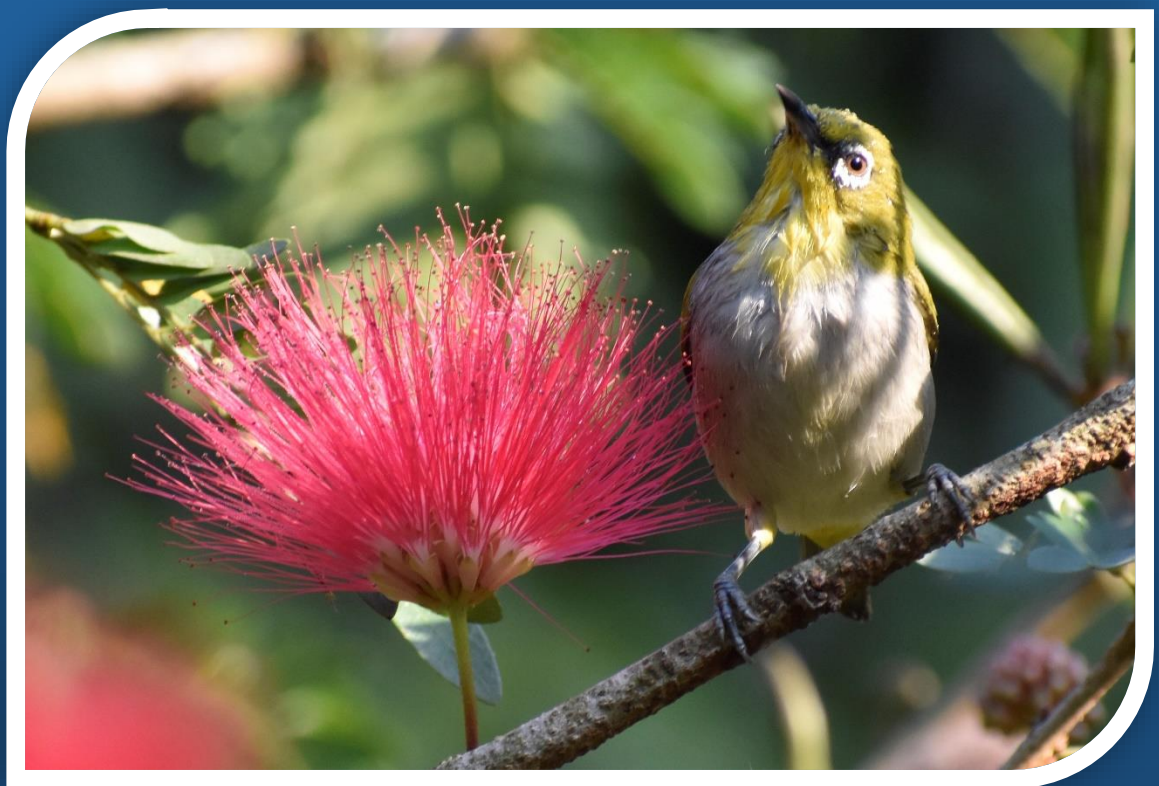
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A 'Scaly-breasted Munia': Picture clicked near Type-IV quarters at NIPERG campus



An 'Indian White-Eye': Picture clicked at Manas National Park, Assam

Photographer
Dr. Purusottam Mohapatra
RLS Fellow



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