

RELATIONS

An Annual Newsletter 2023 for Friends of CE Dept. NIT Agartala



Director's Message



Prof. S. K. Patra

Dear Friends,
I am happy to present the January 2024 Issue of the Civil Engineering Department newsletter 'Relations' to you. The newsletter, 'Relations' provides updates and information regarding various activities, events and achievements of the Civil Engg. Department of NIT Agartala. I am confident that, the Department will expand to the new heights of distinction in the years to come with the arduous efforts of all the stakeholders. In this regard, the newsletter 'Relations' will play a pivotal role to strengthen the relations with all stakeholders.

HOD's Message



Dr. Rajib Saha

Dear All,
First of all, I wish Happy New Year 2024 and wish that the year may usher new hope. The Department of Civil Engineering has continued to excel in its activities in various domains. It gives me immense pleasure to present before you the activities of the department from January to Dec 2023. This year our department has become DST-FIST sponsored department and also got accreditation of NBA for another 3 years for our B Tech. Program.
I hope that you will find this newsletter informative, and it will provide us the opportunity to know more about the department. It is a humble attempt to stay connected with you.

Vision, Mission of CE Department

Civil Engineering Department is one of the largest and oldest department of NIT Agartala which was started in the year of 1965 with the inception of Tripura Engineering College. Civil Engineering Department is committed to contribute excellence in research, scientific and technical education to the nation. Department's mission is to impart quality education for fundamental knowledge in engineering science and technology with social responsibilities. Moreover to develop the engineering background of students towards employability, entrepreneurship and higher learning. Also to undertake collaborative projects to create opportunities for long-term industry-academia interactions.



Department Key Highlights

Major achievements

• FIST Project

Based on the recommendation of the Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions Advisory Board (FISTAB), Civil Engineering Department, NIT Agartala was recommended in the 'level B' category during October 2023. The total amount sanctioned under this project is ₹88 Lakhs for a period of 5 years. The sanctioned amount will be utilized for modernization of laboratories in the department.

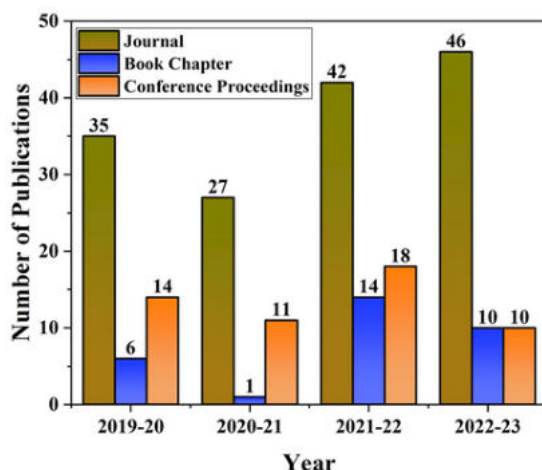


• NBA Accreditation

The undergraduate program of Civil Engineering Department of NIT Agartala was accredited by National Board of Accreditation in Tier- I for academic years 2023 - 2024 to 2025 - 2026 i.e. upto 30-06-2026. This accreditation was a further 3 years accreditation from previous version of accreditation based on the assessment and data verification by an expert team which was conducted on 25th March 2023.



Publication Details



SUMMARY	JOURNAL	BOOK CHAPTER	CONFERENCE PROCEEDINGS
2019-20	35	6	14
2020-21	27	01	11
2021-22	42	14	18
2022-23	46	10	10








Departmental cumulative h-index: 222 and cumulative i10-index: 267

Invited lectures

- **Dr. Animesh Debnath** delivered a lecture as a special speaker in the program organized by the Institute of Engineers (India), Tripura State Centre for **World Water Day on 22nd March 2023**. The theme of the lecture was **"Accelerating Change for Sustainable Development"**. The program was organized by **IEI Tripura State Centre, Pandit Nehru Complex, Agartala in association with the Public Works Department (DWS), Govt. of Tripura**.
- **Dr. Animesh Debnath** delivered a lecture in the **DST-sponsored 5-day STUTI program** on Challenges and opportunities in Water, Sanitation and Hygiene (WASH-2023). The event was organized by the Department of BioEngineering, NIT Agartala, Tripura, India on 27th January 2023 and the topic of the lecture was **"Role of nanotechnology towards the removal of recalcitrant"**
- **Dr. Rajib Saha** delivered a lecture as a special speaker in the program organized by the Institute of Engineers (India), Tripura State Centre for **World Earth Day on 22nd April 2023** with the theme of **Invest in Our Planet**.
- **Dr. Rajib Saha** delivered a lecture on **Earthquake Preparedness and Risk Management on 22nd September 2023** organised by **Black Tiger Cement Ltd.**
- **Dr. Rajib Saha** has delivered lectures in virtual mode at **Punjab University and ICFAI University Tripura**
- **Dr. Sagarika Panigrahi** was invited as a resource person in the Department of Civil Engineering, KL University, Hyderabad on World Ozone Day.



List of PhD Awardee in the year 2023 from CE Dept

NAME OF PHD AWARDEE	SUPERVISOR (S)	TITLE OF THESIS
 Dr. Santanu Mallik	Prof. Umesh Mishra	Hydrochemical characteristics and vulnerability assessment for sustainable management of groundwater resources employing geospatial computing approach
 Dr. Dibyendu Paul	Prof. Manish Pal	Study on the performance of Bituminous mixes for road construction using Non-conventional Materials
 Dr. Payel Das	Dr. Animesh Debnath	Synthesis and characterisation of magnetic ferrite nanoparticles and their polyaniline composites for the sequestration of dye-contaminated wastewater
 Dr. Satyabrata Saha	Dr. Mrinmoy Majumder	Application of Metaheuristic in Performance, Reliability and Uncertainty Analysis of Wave Energy Converter
 Dr. Rajat Debnath	Dr. Rajib Saha	Static and Dynamic characterisation of subsoil deposits of Tripura followed by seismic local site response analysis
 Dr. Riya Majumder	Prof. Umesh Mishra & Dr. Biswanath Bhunia	Preparation, characterization of nanocellulose from Imperata cylindrica and its application as biocomposite
 Dr. Kasinikota Pardhasaradhi	Dr. Deb Dulal Tripura	An Experimental Investigation on Unreinforced and Reinforced Compressed Stabilized Earth Blocks and Walls

National / International Collaboration

- **Dr. Rajib Saha** is having research collaboration with Professor Deepankar Choudhury, Department of Civil Engineering, IIT Bombay. Dr. Saha also acted as a PMRF reviewer coordinated by IIT Bombay in December 2023.
- **Dr. Animesh Debnath** is having research collaboration with Dr. Dipaloy Datta, Assistant Professor, Chemical Engineering, Malaviya National Institute of Technology (MNIT), Jaipur, India.
- **Dr. Dharendra Kumar Pandey**, collaborated with Dr. Trishna Choudhury, Civil Engineering Department, Thapar Institute of Engineering and Technology to conduct research in seismic vibration control and application of smart materials in Civil Engineering construction. Two research projects are implemented jointly at a total cost of around 39 lacs.



Student Achievements

Yuva Sangam program at IIT Madras

Our B. Tech. students **Palash Das (20UCE031)** and **Dipanjan Deb Sarkar (22UCE069)** visited IIT Madras under Ek Bharat Shreshtha Bharat Yuva Sangam program from 1st to 4th March 2023. During their visits, the students had a multi-dimensional exposure under five broad areas - Paryatan (Tourism), Parampara (Traditions), Pragati (Development), Prodyogik (Technology), and Paraspar Sampark (People-to-people connect).



Smart India Hackathon Finals Selection

Team Name: Pavaan
Leader: Krisanu Nath
Members: Sreyashi Adhikary, Udayan Banik, Nipobithi Bagchi, Bishmoy Kumar Das, Bishuddhananda Adhikari



Distinguished Academicians visited Civil Engineering Department of NIT Agartala in 2023

 Prof. D. N. Singh; Department of Civil Engineering; Indian Institute of Technology Bombay (IITB)	 Prof. D. Nagesh Kumar; Department of Civil Engineering; Indian Institute of Science Bangalore (IISc Bangalore)	 Prof. Dilip Kumar Baidya; Department of Civil Engineering; Indian Institute of Technology Kharagpur (IITKGP)	 Prof. V.C. Srivastava; Department of Chemical Engineering; Indian Institute of Technology Roorkee (IITR)
 Prof. Dipanjan Basu; Department of Civil and Environmental Engineering University of Waterloo (UW), Ontario, Canada	 Prof. Makarand Madhao Ghangrekar; Department of Civil Engineering; Indian Institute of Technology Kharagpur (IITKGP)	 Prof. Bimlesh Kumar; Department of Civil Engineering; Indian Institute of Technology Guwahati (IITG)	 Prof. Partha Ghosh; Department of Construction Engineering; Jadavpur University

Recently published Patents

TITLE OF THE PATENT	AUTHORS	COUNTRY	DESIGN NO.	DATE OF GRANT
Intelligent Road Mock-up	Dr. Manish Pal, Dr. Kaberi Majumdar, Mr. Debashish Karmakar, Dr. Dipankar Sarkar, Dr. Joyanta Pal, Dr. Pankaj Kumar Roy	INDIA	202311033395	23RD JUNE 2023
Stabilized Wooden Stone Sub base for Flexible Pavement with Cement and Nanomaterial	Mr. Amit Sain, Dr. Arun Gaur, Dr. Dipankar Sarkar, Mr. Ghanshyam Balotiya	INDIA	202311052475	17TH AUGUST 2023
Utilization of River Stones in Flexible Pavement	Mr. Amit Sain, Dr. Arun Gaur, Dr. Dipankar Sarkar, Mr. Jitendra Singh Khichad	INDIA	202311063724	13TH OCTOBER 2023

Sponsored Research Projects

TITLE OF THE PROJECT	PERIOD	FUNDING AGENCY	AMOUNT (IN LAKHS)	CO-ORDINATORS
A Low-Cost Seismic Vibration Control Mechanism for RC Buildings using Compliant Tuned Liquid Dampers	2022-2025	Science and Engineering Research Board (SERB), DST, Govt. of India	25.58	Dr. D K Pandey
Investigation on the Self-centering and Energy Dissipation Capacity of SMA Fiber-Based Concrete Structures	2022-2025	TIET-VT Centre of Excellence in Emerging materials	13.00	Dr. D K Pandey
Vulnerability study of Borcherra Hostel complex and adjoining buildings due to rainfall induced landslides	2023-2024	Department of Rural Development, Govt. of Tripura	2.00	Dr. S Ghosh, Dr. L Halder and Dr. R. Saha

Consultancy & Testing Works

WORK	2019-2020	2020-2021	2021-2022	2022-2023
Consultancy Works (Lakhs):	53.81	25.61	108.15	251.66
Testing Works (Lakhs):	8.89	5.22	8.80	8.26



Salient Consultancy works undertaken by Civil Engineering Department of NIT Agartala in 2023

NAME OF THE WORK	CLIENT DETAILS	TOTAL AMOUNT (LAKHS)	STATUS
Knowledge partner and quality monitoring institution for TUDA	Tripura Urban Planning & Development Authority (TUDA)	81 LAKHS	ONGOING
Third party quality assurance work of Ekolabya Model schools in Tripura	Tripura Housing Board and Manipur Industrial corporation Ltd.	70 LAKHS (APPROX.)	ONGOING
Third party inspection of Township flat (B+G+14) at New capital Complex Agartala	Tripura Housing Board	50 LAKHS (APPROX.)	ONGOING
Structural Integrity assessment of KV ONGC and Quarter complex	ONGC Limited	14.0 LAKHS (APPROX.)	ONGOING
Modernization of the existing water treatment plant of Agartala gas based power project, Ramchandranagar, NEEPCO Ltd	NEEPCO Limited	11.8 LAKHS	ONGOING
Performance monitoring of zydex nano technology soil stabilization pilot project of NH 208 (Kailasahar to Khowai section)	Jhandu construction India Ltd.	8.85 LAKHS	ONGOING

Placement highlights of 2022-23

- Out of 92 students of B. Tech (2019-2023) batch, 76 students have placed in several companies.
- Priyam Pathak (19UCE086) , Aditya Sharma (19UCE103), Ayush Raj(19UCE078) and Sushant Kumar (19UCE087) have received highest package of Rs. 18.95 lakhs from Bharat Petroleum Corporation Limited (BPCL), an Indian public sector undertaking (PSU) under the ownership of the Ministry of Petroleum and Natural Gas, Govt. of India.
- Till date the recruiters of the current academic year are Mu-Sigma; Argusoft; O9 Solutions; EXL Service; Quantiphi; ABCI Infra; Saint Gobain; ITC Infotech; Nation with Namu; Deloitte; Axis My India; Dassault Systemes; Wipro;PWC; L&T ECC; WNS; KEC International; QSpiders; Pradan; Ashiana Housing Ltd; InMovidu Technology; HDFC Life; InMovidu Technology; Drishti Group and Bharat Petroleum Corporation Limited (BPCL)



Mrs. Brihalata Debbarma's Superannuation 2023



Awards & Achievements

- Dr. Sima Ghosh Associate Professor of Civil Engineering Department, NIT Agartala has been selected as one of the 75 women professionals of India working in the field of Geotechnical Engineering by the Indian Geotechnical Society (IGS) for inclusion in the book "Daughters of Indian Soil". The book was published by IGS during their 75th year of celebration during IGC 2023 (14-16 Dec 2023) at IIT Roorkee..
- An app entitled "AppMAN V 0.1" was developed by Dr. Mrinmoy Majumder and Prof. Manish Pal (Mentor: Dr. Tanumi Kumar) for storing the data of resources of Agartala Municipality Corporation (AMC) like education facilities, medical and health facilities, transport system and connectivity, power and energy, water resource and structure in the jurisdiction of AMC.

Events organized by Civil Engineering Club

- **Plantation programme** in front of Civil Engg department on the occasion of **Independence Day 2023**



- On the occasion of **56th Engineer's Day** Celebration on September 15, 2023, Civil Engineering Club of NIT Agartala organised a **Virtual Alumni Interaction Program**.

Student Industrial Visits

- **Bordowali Surface Water Treatment Plant Visit**

On the occasion of World Water Day, a trip to Bordowali Surface Water Treatment plant was organized by Civil Engg. Department NIT Agartala on 22nd March 2023. A total of 53 students participated in the trip comprising of M.Tech Scholars of Environmental Engineering specialization and B.Tech students of Civil Engineering department, under the supervision of Dr. Animesh Debnath.

- **NEEPCO Water Treatment Plant Visit**

A Team of M.Tech Scholars of Environmental Engineering Specialization of Civil Engineering Department had visited NEEPCO Water Treatment plant on 9th November 2023.



Roadmap: Empowering Futures, Shaping Leaders, Nurturing Excellence for Viksit Bharat 2047

We are cultivating a transformative educational journey that empowers students to become architects of change, actively contributing to the vision of Viksit Bharat 2047—a future where holistic development, innovation, and inclusive progress are actively nurtured.



Workshop/Short Term Courses

- One Day National workshop was held on "**Emerging Techniques in Pavement Stabilization**" on 10th March-2023 by Civil Engineering Department of NIT Agartala
- A Technical Talk was delivered by Prof. Dipanjan Basu, Professor, University of Waterloo, Canada on the topic "**Sustainability and its Assessment in Geotechnical Engineering**". The program organized by Civil Engineering, NIT Agartala in association with IGS Agartala Chapter on 21st July-2023.
- A two-days' workshop on **Field Inspection of Civil Works** and **Quality Control** by Setting up of Low-cost Material Testing Laboratory was organized by Department of Civil Engineering, NIT Agartala on 15th and 16th June, 2023. The workshop was conducted in association with The District Magistrate & Collector, Sepahijala District Government of Tripura. The workshop was organized with the novel idea to make a connection between Academia experts with Societal stake holders with the aim to fulfill the mission of our country "**Unnat Bharat**"! Honorable Minister Shri Tinku Roy, Youth Affairs and sports, Govt. of Tripura was the Chief Guest of the inauguration session of the workshop on 15th June 2023. Nearly 50 participants including state government engineers, field supervisors, panchayat Pradhans and members had participated in the said workshop.
- One Day Technical Talk on **Advancement in Geotechnical Engineering** was organized by IGS Agartala chapter in association with Civil Engineering Department of NIT Agartala on 6th December, 2023
- Five Days Workshop on **Energy Efficient & Green Buildings** was organized by Civil Engineering Department of NIT Agartala from 4th to 8th december, 2023. The workshop was meant to build capacity on **Tripura Energy Conservation Building (TRECBC and EcoNiwas Samhita (ENS) concepts**, implementation and compliance in the State. Bureau of Energy Efficiency (BEE) master trainers has conducted the sessions on various aspects of design and construction material requirements of a TRECBC compliant building project.

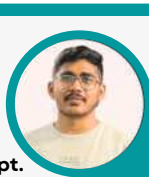
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- **Vishwakarma Puja & Saraswati Puja** Celebration in Civil Engineering Department of NIT Agartala on 17th September and 26th January 2023 respectively



- **Teacher's Day** Celebration in Civil Engineering Department of NIT Agartala on 5th Sept. 2023



- **Panchamukh Ground Water Treatment Plant Visit**

Another water treatment plant visit was also organized on the occasion of World Water Day to Panchamukh Ground Water treatment plant, by Civil Engg. Department NIT Agartala on 22nd March 2023. There the B.Tech and M.Tech students of Civil Engg. Department had explored the various ground water treatment techniques.



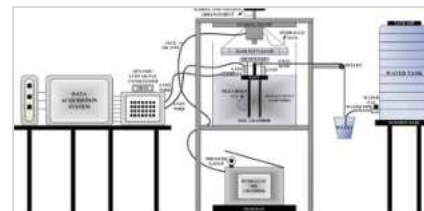
Salient Laboratory Facilities Developed



Anaerobic Digestion Setup



T Bar penetrometer



Combined V-M-H loading Test set up



Diagonal shear test setup for masonry wall

