



Annual Report 2023-24

NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA

ANNUAL REPORT 2023-24



NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA

BIJNI COMPLEX, LAITUMKHRAH, SHILLONG 793003

PERMANENT ADDRESS: SOHRA, EAST KHASI HILLS DISTRICT,
MEGHALAYA-793108



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THE VISION:

A Centre of Excellence vibrant with academic activities and bubbling with youthful creative energy, making significant contribution to the World of Knowledge and Technology and to the Development of the State, the Region and the Nation.



THE MISSION:

- To impart quality education in the fields of Engineering, Science and Technology at Undergraduate as well as Postgraduate levels with special attention to encourage innovation and creativity in these fields.
- To engage in creation of knowledge and development of technologies through effective research programs.



“ Master Plan of the Permanent Campus, NIT Meghalaya

THE GUIDING PRINCIPLES:

- Every entity deserves respect; responsiveness, fairness and transparency are keys to it.
- Role of an academic institution is to enable unhindered exchange of knowledge.
- True education promotes of the spirit of enquiry.
- Nurturing of talent and promotion of creativity must for achieving excellence.
- Learning is a lifelong process.
- Examination and evaluation processes are tools to enable better learning, not the ends.
- Every effort should be made to take the benefit of science and technology to the poor and underprivileged.
- Rural development is must for balanced development of the nation.
- Protection of the environment must get priority.



THE CODE OF ETHICS:

The Institute follows the IEEE code of ethics for research:

- To accept responsibility in making engineering decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment.
- To avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist.
- To be honest and realistic in stating claims or estimates based on available data.
- To reject bribery in all of its forms.
- To improve understanding of technology, its appropriate application, and potential consequences.
- To maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations.
- To seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others.
- To treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin.
- To avoid injuring others, their property, reputation, or employment by false or malicious action.
- To assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

THE INSTITUTE:

Permanent Campus Location: Sohra, East Khasi Hills District, Meghalaya-793108

Present Location: Bijni Complex, Laitumkhrah, Shillong 793003, Meghalaya

Website: <http://nitm.ac.in/>



THE AUTHORITIES:

Visitor: Smt.Droupadi Murmu, The Hon'ble President of India
(w.e.f. 25.07.2022 onwards)

BOARD OF GOVERNORS:

- Shri Sajjan Bhajanka - Chairman (upto 24.08.2023)
- Shri Sunil Alagh, Chairman & Managing Director, SKA Advisor Pvt. Ltd., Mumbai - Chairman (w.e.f 25.08.2023)
- Prof. G. Panda, Director i/c, NIT Meghalaya, Member (from 01.02.2023 to 30.06.2023)
- Prof. P. Mahanta, Director, NIT Meghalaya, Member (w.e.f 07.08.2023)
- Ms. Saumya Gupta, Joint Secretary (NITs), Department Higher Education, Ministry of Education, New Delhi - Member
- Shri Govind Jaiswal, Joint Secretary (TEL), Dept. of Higher Education, Ministry of Education, New Delhi – Member (Temporary charge from 29th January 2024, to 5th April, 2024)
- Shri Sanjog Kapoor, JA & FA, Department of Higher Education (TE), Ministry of Education, New Delhi – Member
- Director, IIT Guwahati- Member
- Shri Wallamphang Roy, MD, Meghalaya Power Carriers (India) Pvt. Ltd- Member
- Shri Medrickson Tiarang, Retired Chief Engineer, PWD (Roads), Meghalaya - Member
- Prof. Harish Chandra Das, Department of Mechanical Engineering, Member (upto 28.09.2023)
- Prof. Ayon Bhattacharjee, Dept. of Physics, NIT Meghalaya – Member (w.e.f 29.09.2023)
- Dr. Gitish Kishore Dutta, Associate Professor, Department of Chemical and Biologicals Science, NIT Meghalaya- Member (upto 28.09.2023)
- Prof. Deba Kumar Sarma, Dept. of Mechanical Engineering, NIT Meghalaya – Member (w.e.f 29.09.2023)
- Dr. R. N. Mahapatra, Registrar i/c, NIT Meghalaya - Member Secretary (upto 31.12.2023)
- Dr. B. Chakravarty, Registrar, NIT Meghalaya - Member Secretary (w.e.f. 01.01.2024)

SENATE:

- Prof. Gayadhar Panda, Director (i/c) – Chairman (from 01.02.2023 to 30.06.2023)
- Prof. P. Mahanta, Director, NIT Meghalaya - Chairman (from 07.08.2023 onwards)
- Prof. M. G. Banerjee, Director, EFLU - Member
- Prof. S. Basu, Dept of Physics, IIT Guwahati - Member
- Prof. M. Panda, NIT Rourkela - Member
- Prof. G. Panda, EE Dept., NIT Meghalaya - Member (From 07.08.2023 onwards)
- Prof. A. Bhattacharjee, PH Dept., NIT Meghalaya - Member
- Prof. H.C. Das, ME Dept., NIT Meghalaya - Member
- Prof. D. K. Sarma, Dean (P&D), NIT Meghalaya - Member (From 19.12.2023 onwards)
- Prof. D. S. Roy, Dean (R&C), NIT Meghalaya - Member (From 26.12.2023 onwards)
- Prof. C. Marthong, CE Dept., NIT Meghalaya - Member (From 19.12.2023 onwards)
- Prof. Anup Dandpat, Dean (AA), NIT Meghalaya - Member (23.02.2024 onwards)
- Prof. P.S. Mangang, Dean (SW)& HoD (HS), NIT Meghalaya - Member (23.02.2024 onwards)
- Dr. R.N. Mahapatra, Registrar (i/c), NIT Meghalaya- Member Secretary (From 08.01.2023 to 31.12.2023)
- Dr. B. Chakravarty, Registrar, NIT Meghalaya- Member Secretary (01.01.2024 onwards)

FINANCE COMMITTEE:

- Shri Sajjan Bhajanka, Chairman, Board of Governors (upto 24.08.2023)
- Shri Sunil Alagh, Chairman & Managing Director, SKA Advisor Pvt. Ltd., Mumbai- Chairman, Board of Governors (w.e.f 25.08.2023)
- Prof. G. Panda, Director i/c, NIT Meghalaya- Member (from 01.02.2023 to 30.06.2023)
- Prof. P. Mahanta, Director, NIT Meghalaya - Member (w.e.f 07.08.2023)

- Shri Wallamphang Roy, Managing Director, Meghalaya Power Carriers Pvt. Ltd. – Member
- Ms. Saumya Gupta, Joint Secretary (NITs), Department Higher Education, Ministry of Education, New Delhi - Member
- Sh. Govind Jaiswal, Joint Secretary (TEL), Dept. of Higher Education, Ministry of Education, New Delhi - Member
- Shri Sanjog Kapoor, JS & FA, Dept. of Higher Education, Ministry of Education, New Delhi- Member
- Prof. Harish Chandra Das, Department of Mechanical Engineering, Member (upto 28.09.2023)
- Prof. Ayon Bhattacharjee, Dept. of Physics, NIT Meghalaya – Member (w.e.f 29.09.2023)
- Director, IIT Guwahati, Guwahati - Member
- Dr. R. N. Mahapatra, Registrar i/c, NIT Meghalaya - Member Secretary (upto 31.12.2023)
- Dr. B. Chakravarty, Registrar, NIT Meghalaya - Member Secretary (w.e.f 01.01.2024)

BUILDING & WORKS COMMITTEE:

- Prof. Gayadhar Panda, Director (i/c) – Chairman (from 01.02.2023 to 30.06.2023)
- Prof. P. Mahanta, Director, NIT Meghalaya - Chairman (from 07.08.2023 onwards)
- Shri. James N S Lakiang, Superintending Engineer, PWD (Buildings), Meghalaya, Shillong - Member
- Shri. Anil Kumar, Director (Finance), Ministry of Education, New Delhi - Member
- Shri. N S Bisht, Deputy Secretary (NITs-II), Department of Higher Education, Ministry of Education, New Delhi - Member
- Prof. Deba Kumar Sarma, Professor & Dean (P&D), ME Dept., NIT Meghalaya - Member
- Shri. R S Nongbri, Addl. Chief Engineer, PHE, Zone-I, O/o The Chief Engineer, PHE, Meghalaya, Shillong - Member
- Shri T. R. Pdah, Retd. Chief Engineer MePDCL, Shillong - Member
- Dr. R. N. Mahapatra, Registrar i/c, NIT Meghalaya - Member Secretary (upto 31.12.2023)
- Dr. B. Chakravarty, Registrar, NIT Meghalaya - Member Secretary (w.e.f 01.01.2024)

ADMINISTRATION:

Director

Prof. G. Panda (upto 07.08.2023)

Prof. P. Mahanta (w.e.f. 08.08.2023 onwards)

Deans:

Dean (Academic Affairs)	Dr. A. Banerjee (upto 31.08.2023 onwards) Dr. S. Mukherjee (w.e.f 01.09.2023 to 03.03.2024) Prof. A. Dandapat (w.e.f 04.03.2024 onwards)
Dean (Research & Consultancy)	Prof. D. S. Roy
Dean (Student Welfare)	Dr.P.S. Mangang
Dean (Planning & Development)	Dr. D. Kr. Sarma
Dean (Faculty Welfare)	Prof. A. Bhattacharjee

Professors Incharge:

Computer Centre	Dr. A. P.Singh, CS
Centre of International Relations	Dr. M. Saha, MA
Centre for Career Development	Dr. R. S. Das, ME
Centre for Technology Enabled Learning	Dr. A. P.Singh, CS
Centre for Robotics & Mechatronics	Dr. B. K. Sarkar, ME
Centre for Innovation Incubation & Entrepreneurship	Dr. N K. Nath, CBS
Academic Affairs – Postgraduates & Research	Dr. Surmila Thokchom (till 30 th June 2023)
Academic Affairs – Undergraduates	Dr. Rakesh Roy (till 30 th June 2023)

Heads of Departments:

Computer Science & Engineering (CS)	Dr. Surmila Thokchom (w.e.f. 08.08.2022 onwards)
Electronics and Communication Engineering (EC)	Dr. Prabir Kumar Saha (w.e.f. 29.07.2022 onwards)
Electrical Engineering (EE)	Dr. S. Debbarma (upto 30.06.2023) Dr. Shaik Affijulla (w.e.f 01.07.2023)
Mechanical Engineering (ME)	Dr. K. Debnath
Civil Engineering (CE)	Dr. H. M. Kalita
Physics (PH)	Dr. K. Senthilkumar (upto 30.06.2023) Dr. T. Bora (w.e.f 01.07.2023)
Chemistry (CY) /Chemical and Biological Sciences (CBS)	Dr. A. Kr. Paul
Mathematics (MA)	Dr. B. Kumbhakar (upto 30.06.2023) Dr. A. Kr. Jena (w.e.f 01.07.2023)
Humanities and Social Sciences (HSS)	Dr. P. S. Mangang

Students Activity Centre (SAC):

President	Dr. A. K. Paul, CY/CBS (upto 30.06.2023) Dr. A. S. Roy, CY/ CBS (w.e.f 01.07.2023)
Vice President (Cultural)	Dr. B. K. Debnath, ME (upto 30.06.2023) Dr. S. Sharna, CE (w.e.f 01.07.2023)
Vice President (Technical)	Dr. B. K. Balabantaray, CS
Vice President (Sports & Games)	Dr. Ksh. M. Singh, EE (upto 30.06.2023) Dr. P. Kr. Rathore, EC (w.e.f 01.07.2023)
Faculty i/c of Robotics Club	Dr. B. Kr. Sarkar, ME
Faculty i/c of Coding Club	Dr. Deepak Kumar, CS Dr. (Mrs) Salam S. Devi, EC

Faculty i/c of Astronomy Club	Dr.A.Ch. Nayak, PH
Faculty i/c of Indoor Sports Club	Dr. Ganesh Ch. Dhal, CE
Faculty i/c of Outdoor Sports Club	Dr. Piyush P. Singh, EE
Faculty i/c of Dance & Drama Club	Dr. Shravan Kumar Bandari, EC
Faculty i/c of Music Club	Dr. (Mrs) Smrutirekha Sahoo, CE
Faculty i/c of Literary Club	Dr. Alekha Ch. Nayak, PH
Faculty i/c of Photography & Fine Arts Club	Dr. D. Podder, CE
Faculty i/c of EBSB Club	Dr. A. P. Singh, CS
Faculty i/c of Central Workshop	Dr. K. Das, ME

Hostel administration:

Chief Warden	Dr. A. S. Roy, CY/CBS (upto 30.06.2023) Dr P.S. Mangang, HS (w.e.f 01.07.2023 to 31.08.2023) Dr. S. Debbarma, EE (w.e.f 01.09.2023)
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Wardens:

Polo Boys Hostel	Dr. T. Karmakar, MA (upto 30.06.2023) Dr. B. Kumbhakar, MA (w.e.f 01.07.2023)
Kench's Trace Boys Hostel	Dr. Deepak Kumar, CS (upto 30.06.2023) Dr. Pradeep Kumar Rathore (w.e.f 01.07.2023)
Umpling Boys Hostel	Dr. A. C. Nayak, PH
Lapalang I Boys Hostel	Dr. P. K. Gautam, CE
Lapalang II Boys Hostel	Dr. S. K. Bandari, EC
Lapalang III Boys Hostel	Dr. M. Rahang, ME
Lapalang IV Boys Hostel	Dr. P. K. Saha, EC (upto 30.06.2023) Dr. N. K.Nath, CY/CBS (w.e.f 01.07.2023)
Lapalang V Boys Hostel	Dr. D. Podder, CE (upto 30.06.2023) Dr. G. Ch. Dhal (w.e.f 01.07.2023)
Lower New Colony Boys Hostel	Dr. A. K. Jena, MA (upto 30.06.2023) Dr. P.P. Singh, EE (w.e.f 01.07.2023)
Lapalang Girls Hostel -I	Dr. (Mrs.) P. Devi, EC
Nongthymmai Girls Hostel	Dr. (Mrs) S. S. Devi, EC
Motinagar Girls Hostel	Dr. (Mrs.) N. Kotoky, CE (upto 25.02.2024) Dr. M. Tewary, ME (w.e.f 26.02.2024)

Registrar's Office:

Registrar	Dr. R. N. Mahapatra (upto 30.06.2023) Dr. B. Chakravarty (w.e.f 01.01.2024)
Asst. Registrar (Establishment)	Shri B. Blahwar (upto 08.10.2023). Mrs. Ambika Rai (w.e.f 09.10.2023)
Asst. Registrar (Academic Affairs)	Mrs. Ambika Rai (upto 08.10.2023). Shri H. Yadav (w.e.f 09.10.2023)
Asst. Registrar (Finance & Accounts)	Shri B. Das (upto 08.10.2023). Shri B. Blahwar (w.e.f 09.10.2023)

Engineering Section:

Executive Engineer	Shri R. L. Kharpran
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Library:

Asst. Librarian	Dr. R. Kharbihkhiew
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THE DIRECTOR'S REPORT

The National Institute of Technology Meghalaya is currently operating from its temporary campus at Bijni Complex, Laitumkhrah, Shillong. The Institute has completed thirteen years since its establishment in the

year 2010. During the year 2023-24, the Institute has made many significant strides.

I) ACADEMIC SECTION:

The functioning of Academic Section is headed by Dean (Academic Affairs) and assisted by Assistant Registrar (Academic Affairs), Superintendent, and Junior Assistants. The Section performs all the functions related to Academics of the Institute. It also provides administrative support to the Senate, which is the highest academic body of the Institute.

People under Academic Section

Dr. Atanu Banerjee, Dean (Academic Affairs) till 31.08.2023
Dr. Saikat Mukherjee, Dean (Academic Affairs) from 01.09.2023 to 03.03.2024
Prof. Anup Dandapat, Dean (Academic Affairs) from 04.03.2024 onwards
Mrs. Ambika Rai, Assistant Registrar (Academic Affairs) upto 08.10.2023.
Mr. Himanshu Yadav, Assistant Registrar (Academic Affairs) w.e.f 09.10.2023 onwards
Mr. Damut Janai Shakhar, Superintendent (Academic Affairs) w.e.f. 12.8.2022 upto 27.04.2023

Ms. Shampa Purkayastha, Personal Assistant w.e.f. 28.04.2023 upto 08.08.2023
Mr. Damut Janai Shakhar, Superintendent (Academic Affairs) w.e.f. 09.08.2023 onwards
Mrs. Jiedriti M. Nongkynrih, Junior Assistant w.e.f. 01.04.2023
Mr. Banshailang Myrthong, Junior Assistant
Mr. Julius Iawphniaw, Junior Assistant
Mr. Bankerlang Lyngdoh, Junior Assistant

II) PROGRAMMES OFFERED BY THE INSTITUTE:

1) Under Graduate Programme:

The Institute offers B.Tech (Bachelors of Technology) Programme in the following five disciplines:

- Civil Engineering (CE)
- Computer Science and Engineering (CSE)
- Electronics and Communication Engineering (ECE)
- Electrical Engineering (EE)
- Mechanical Engineering (ME)

2) Post Graduate Programmes:

The Institute offers Master of Technology (M.Tech) and Master of Science (M.Sc) as PG Programmes in the following disciplines:

a) *Master of Technology (M.Tech) Programme (Regular/ Sponsored Full Time & Part Time)*

- Civil Engineering (Structural Engineering) [CE]
- Computer Science and Engineering [CSE]
- Electronics and Communication Engineering (VLSI & Embedded system) [ECE]
- Electrical Engineering (Power and Energy Systems) [EE]
- Mechanical Engineering (Fluids and Thermal Engineering) [ME]

b) *Master of Science (M.Sc.) Programme:*

- Physics (PH)
- Chemistry (CY)
- Mathematics (MA)



3) Doctor of Philosophy (Ph.D) Programme:

This is offered with an objective to undertake quality researches for innovations and new technological developments. The Institute is currently offering Ph.D Programme in the following disciplines under both Full Time and Sponsored (Part-Time) Categories.

- Engineering
- Basic Sciences
- Humanities & Social Sciences (HSS)

4) Post-Doctoral Fellowship Scheme:

The Post-Doctoral Fellowship Programme aims to identify and motivate young researchers and provide them support for research in frontier areas of science and engineering. The Institute is currently offering Institute Post-doctoral Fellows (IPDFs) and Sponsored Post-doctoral Fellows (SPDFs) under the following disciplines.

- Engineering
- Basic Sciences
- Humanities & Social Sciences (HSS)

III) ADMISSIONS TO THE VARIOUS PROGRAMMES DURING 2023-24

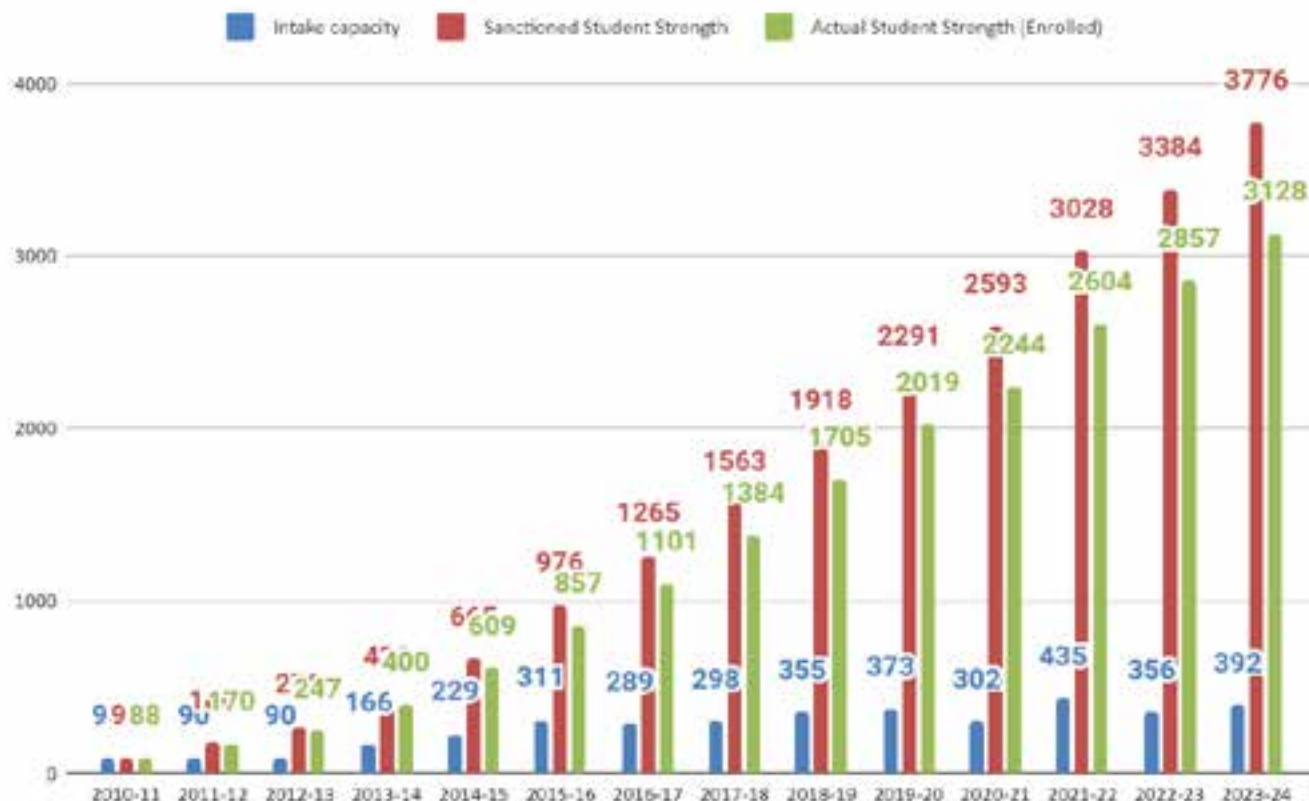
- Admission to the Bachelor of Technology Programme (B.Tech) was conducted on the basis of valid JEE Main scores and through the joint seat allocations made by Joint Seat allocation Authority (JoSSA)/CSAB.
- Admission to the Master of Technology (M. Tech) Programme in the Institute was conducted on the basis of valid GATE scores and through the counseling conducted by the Centralized Counseling for M. Tech. / M. Arch. / M. Plan (CCMT). However, vacant seats after CCMT counseling were offered for admission to Sponsored (Full Time / Part Time) and GATE qualified candidates through Institute entrance examination.
- Admission to Master of Science (M.Sc.) Programme was conducted on the basis of valid JAM scores and through Centralized Counselling CCMN. However, vacant seats after CCMN counseling were offered for admission through Institute entrance examination.
- Admission to the Ph.D Programme was conducted based on the written examination, viva-voce or presentations. The advertisement for the same was published during April 2023 for Autumn 2023 session and in November 2023 for Spring 2024 session.

Admissions to various Programmes during the year were successfully conducted.

IV) STUDENT'S DATA UPTO 2023-24

Admitted in 2023-24								
Programme	Discipline	Intake Capacity	Male	Female	SC	ST	OBC	Total
B.Tech	CE	33	14	14	3	14	5	28
	CS	33	27	9	4	12	8	36
	EC	33	27	6	2	13	7	33
	EE	33	26	7	3	12	5	33
	ME	33	27	7	4	14	3	34
	Sub Total	165	121	43	16	65	28	164
M.Tech	CE	20	5	1	0	5	0	6
	CSE	20	5	6	1	5	1	11
	ECE	20	0	2	0	1	0	2
	EE	20	2	1	0	3	0	3
	ME	20	3	0	0	2	0	3
	Sub Total	100	15	10	1	16	1	25
M.Sc.	PH	16	5	6	10	5	1	11
	CY	16	8	9	1	3	6	17
	MA	16	9	3	1	2	3	12
	Sub Total	48	22	18	12	10	10	40
Ph.D.	CE	NA	1	2	0	1	1	3
	CSE	NA	4	2	0	2	0	6
	ECE	NA	8	1	1	4	0	9
	EE	NA	7	0	0	3	1	7
	ME	NA	3	1	0	1	1	4
	PH	NA	2	1	0	1	0	3
	CY	NA	1	5	0	1	1	6
	MA	NA	4	0	0	1	0	4
	HSS	NA	0	0	0	0	0	0
	Sub Total	NA	30	12	1	14	4	42
Total			188	83	30	105	43	271

Student Strength



A total of 271 students were admitted during the Academic Year 2023-24, including the Ph. D scholars

V) MAJOR EVENTS

1) Tenth Convocation:

The Tenth Convocation of the Institute was held on 18th November, 2023. Dr. Arun Kumar Sarma, Director General NECTAR graced the occasion as the Chief Guest. Shri Sunil Alagh, Chairman, Board of Governors of the Institute, was the Chairman of the Convocation. The **tenth** batch of B. Tech, **eighth** batch of M. Tech, **seventh** batch of M.Sc and Ph.D scholars of the Institute graduated in June, 2023. The students who graduated under the different programmes are presented below: -

Sl. No.	Name of the programme	Number of the students graduated
1	B.Tech	147
2	M.Tech	26
3	M.Sc	31
4	Ph.D	34
Total		238

Most of the qualified students were placed in reputed companies through campus placement.

10TH CONVOCATION: DATED 18/11/2023



2) Research Conclave:

The Research Conclave 2024 held at NIT Meghalaya on **February 28-29, 2024** marked a significant milestone in the pursuit of academic excellence and innovation. This esteemed event, organized by our institute, brought together scholars, researchers, industry experts, and students from diverse fields to engage in fruitful discussions, share insights, and showcase cutting-edge research.

Event Highlights:

- **Inauguration Session:** The conclave kicked off with an inspiring inauguration session, graced by esteemed dignitaries and key stakeholders, setting the tone for the event. Chief Guest, Dr. Mridul Hazarika, Vice-Chancellor, Mahapurusha Srimanta Sankaradeva Viswavidyalaya, Assam and Guest of Honor, Prof. T. Radha Krishna, Professor Emeritus, All India Council for Technical Education, graced the occasion. The conclave also featured a vibrant cultural program, showcasing the rich diversity and talent within our community, creating memorable moments of celebration and camaraderie.
- **Technical Presentations:** A series of technical presentations provided a platform for participants to share their research findings, innovations, and ideas across various disciplines. There has been total of **22** technical presentations across various disciplines.
- **Panel Discussions:** Engaging panel discussions delved into critical topics such as entrepreneurship, sustainability, and the future of technology, offering valuable insights and perspectives.
- **Poster Presentations:** Poster sessions provided an interactive forum for researchers to visually present their work and engage in one-on-one discussions with peers and experts. There has been total of **88** poster presentations across various disciplines.
- **2-Min Thesis presentation:** This session is mainly targeted for the fresh researchers, who has just initiated their research

career. With a limited presentation time, total 17 entries are obtained in this category.

- **Quiz:** An exciting interactive session with our budding 1st year UG students and School students from various parts of the state of Meghalaya are organised in the form of classic Quiz. The energetic session has really become a focus of the entire event with total of 22 participants.
- All the above events are organised keeping in mind of North-East oriented innovation and research. There has been special category in every event to honour such distinguished effort.

Key Outcomes:

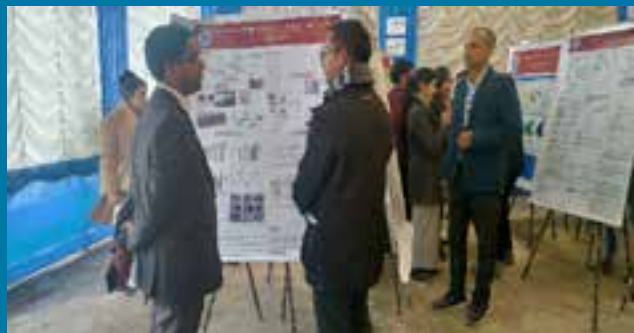
- **Knowledge Exchange:** The conclave facilitated the exchange of knowledge, ideas, and best practices, fostering interdisciplinary collaborations and partnerships.
- **Networking Opportunities:** Participants had the chance to network with industry leaders, academia, and fellow researchers, paving the way for future collaborations and professional growth.
- With an aim to strengthen the research, innovation and industrial exposure following MoU has been signed
 - MoU between National Institute of technology Meghalaya Edulife India, Guwahati, Assam, India.
 - MoU between National Institute of technology Meghalaya IG Drones, Ahmedabad, Gujarat, India
 - MoU between National Institute of technology Meghalaya IAspire Mind Foundation, Gurgaon, Haryana India.
 - MoU between Skills Development Network Wadhwani Foundation, Bengaluru National Institute of technology Meghalaya
- **Inspiration and Innovation:** The event served as a source of inspiration, igniting a passion for innovation and pushing the boundaries of research and development.



LIST OF AWARDEES

Event	Prize	Group I	Group II	Group III
		PY/Chem/MA/HS	CE/ME	EE/ECE/CSE
Poster Presentation	1 st Prize	Paper ID: RC_P5 Poster Name: Phothermally driven motion of hydrazone PVDF of composite materials Presenter: Mr. Pulkesh Gogi NIT Meghalaya	Paper ID: RC_CE 9 Paper Name: YST-240 STEEL TUBES' MECHANICAL PROPERTIES POST-FIRE Presenter: Ms. Anjali Kumari Pravin Kumar Pandey NIT Meghalaya	Paper ID : RC_CSE2 Poster Name: Automatic Image Registration using SIFT and AKAZE: An Application for Preservation of Cultural Heritag Presenter: Mr. Lumlang Sawkmie NIT Meghalaya
	2 nd Prize	Paper ID: RC_MA1 Paper Name: Probability that the product of two elements in a finite ring is nilpoten Presenter: Mr. Dibyasman Sarma NIT Meghalaya	Paper ID: RC_CE 10 Paper Name: Identification and characterization of microbes and its application as bio-cement Presenter: Mr. Sahil Pritam Swain NIT Meghalaya	Paper ID: RC_CSE 4 Paper Name: Artificial Intelligence Based Prediction of Neurological Adverse Drug Reactions from 17 MD Presenter: Anushka Chaurasia NIT Meghalaya
Technical Paper Presentation	1 st Prize	Paper Id: TP_M10 Paper Name: Numerical Simulation to Study the Influence of Nb-Doped MoS2 Layer in CZTS Based Solar Cell: Calibration and Modelling Presenter: Mr. Santu Mazumder NIT Meghalaya	Paper Id: TP_A3 Paper Name: Degradation and Recycling Behaviour of the Bamboo Fiber Reinforced Green Composite Fabricated by Injection Molding Presenter: Mr. Gorrepotu Surya Rao, NIT Meghalaya	Paper Id : TP_M15 Paper Name: Nine Level Switched-Capacitor Multilevel Inverter Fed Induction Heated Autoclave System For Healthcare Industries Presenter: Mr. Manish Kurre NIT Meghalaya
	2 nd Prize	Paper Id: TP_M11 Paper Name: Deposition of manganese oxide nanoparticles via laser-induced microstreaming Presenter: Sanchia Mae Kharphanbuh NIT Meghalaya	Paper ID: TP_A1 Paper Name: Landslide Susceptibility Mapping in East Jaintia Hills, Meghalaya Region Presenter: Mr. Naveen Badavath NIT Meghalaya	Paper Id: TP_M13 Paper Name: Associative Memory for In-Processor Computing Presenter: Mr. Shyamosree Goswami NIT Meghalaya
2-Minute Thesis Presentation	1 st Prize	Paper Id: P_7 Paper Name: Nanofluids And Hybrid Nanofluid Presenter: Dixita Sonowal NIT Meghalaya	Paper Id: P_13 Paper Name: Enhancement of Bio-methanation Process Presenter : Jyoti Moni Devi, NIT Meghalaya	Paper id: P_3 Paper Name: Nonlinear Load Frequency Control Techniques Of Multi-Area Power System Presenter: Dip Kumar Biswas NIT Meghalaya
	2 nd Prize	Paper Id: P_4 Paper name: Constraints On Dark Matter and Effect On 21cm Observation Presenter: Hriditi Howlader NIT Meghalaya	Paper Id: P_16 Paper Name: Performance analysis of the novel cross flow hydro turbine through blade profile design Presenter: Jyotipriyam Baruah, NIT Meghalaya	Paper Id: P_11 Paper Name: Hardware implementation of physical layer waveform design for next-generation wireless Communication systems Presenter: Mr. Risham Doley NIT Meghalaya
Research Relevant to North East Region		Poster Id: RC_P11 Poster Name: Artificial neural network-driven optimization for quality enhancement in thermosonicated underutilized fruit juice from North East India Presenter: Ms. Puja Das CIT Kokrajhar	Paper Id: RC_CE 10 Poster Name: Identification and characterization of microbes and its application as bio-cement Presenter: Mr. Sahil Pritam Swain NIT Meghalaya	Poster Id: RC_P37 Poster Name: Name: IoT Enabled Unified Predictive Modeling of Air Pollution for SMART City Presenter: Mr. Jintu Borah NIT Meghalaya

PHOTOS RELATED TO THE EVENT:



4TH RESEARCH CONCLAVE: DATED 28/2/2023 & 01/3/2023 IN PICTURES



VI) NOTABLE ACHIEVEMENTS OF THE INSTITUTE:

1. NIT Meghalaya has been placed at 72nd rank in the NIRF rankings for 2023.
2. NIT Meghalaya has been ranked 16th among the top 25 Govt. engineering colleges by Outlook ICARE ranking 2023.
3. NIT Meghalaya ranking by Indian Institutional Ranking Framework (IIRF) is 85 out of 170 colleges in India in 2023.
4. The Mechanical Engineering and the Electrical & Electronics Engineering Programmes of the Institute has been accredited

by NBA for the Academic Years 2021-2022 to 2022-2024, i.e., up to 30-06-2024

VII) INITIATIVES IMPLEMENTED UNDER NEP 2020:

i. Inter Disciplinary Project:

Interdisciplinary projects are offered to the students.

ii. Long Term UG Internship:

Six months of internship is allowed to the UG students during their 7th or 8th Semester, if the internship is superior

in nature and is in continuation or relevant with the research undertaken by the student.

iii. Major/Minor Degree (w.e.f. 2021 UG Batch):

Major Degree will be awarded after completion of the undergraduate programme to students who successfully complete the programme within the minimum stipulated period. Eligible students with a CGPA of 8.5 and above will be declared to have passed the degree in first class with honors.

A student will be allowed to register for a minor degree in a particular specialization offered by another department from 3rd semester onwards provided he/she has a CGPA of 7.5 and above at the end of 2nd semester.

VIII) FINANCIAL ASSISTANCE TO THE STUDENTS

The Institute provides full exemption of tuition fees to all the students belonging to SC, ST & PH categories. As per MoE guidelines, from 2016 onwards, *full tuition fee remittance*

is also provided to students whose annual family income is less than *one lakh* and *2/3rd fee remittance* is provided to the students with annual family income of one lakh upto *five lakhs*.

All the eligible Ph.D/M.Tech/M.Sc/UG students are receiving either Institute scholarships as per norms or from various funding agencies and scholarship sources. McM Scholarship is also awarded to the M.Sc. students with annual family income of upto Rs. 5,000/- per annum and with consistent academic CGPA of 8.5 and above.

The Outstanding Research Fellowship Scheme (ORFS) provides an opportunity for the scholars to carry out extensive research in a particular domain and also motivates them for completing the Ph.D work in time and with substantial research publications. In 2022-23, two (2) Ph.D scholars were selected under this scheme. The fellowship amount offered is Rs. 50,000/- per month

The Institute Post-Doctoral Fellows (IPDF) admitted to the Postdoctoral Programme of NIT Meghalaya through the procedures adopted by Institute is offered a fellowship of Rs. 55,000/- per month.

STUDENTS' PLACEMENT

Placement activities are an integral part of National Institute of Technology Meghalaya and the activities were carried out during the year by the Centre for Career Development. The Centre has all the state-of-the-art facilities to facilitate the campus hiring activities of the companies. The objective of the Centre is to make each and every student of NIT Meghalaya a success story and to impart legendary leadership qualities to all the students. It not only ensures that the graduation outcome of the student

is a fruitful and upright one, but also helps that the students to develop into a complete human being with the perfect combination of professional and business ethics while still maintaining the values within themselves. Just like the previous years, the placement of the students was taken up with high priority. The details of the recruiting organizations along with their job offers and packages are given below:

FOR B.TECH

Sl. No.	Name	No. of Offers	Package Offered (₹ in lakh per annum)
1	Amazon (off Campus)	2	46.3
2	Alstom	3	6.8
3	Deloitte	3	7.6
4	Winjit	3	12
5	L&T	5	6.5
6	Shadowfax	3	4
7	HCL	1	10
8	E Ring	1	10
9	Axiphyl Pvt Ltd	3	3
10	Mu Sigma	1	5
11	12BBST	1	6
12	Narayana	5	6
13	TCS	2	9.5
14	Switch Mobility	2	5
15	KEC	8	6.5
16	Vedanta	3	11.45
17	High-Technext Engineering & Telecom Pvt Ltd	9	3.6
18	Wayspire	19	5.4
19	Sagacious IP	4	7.5
20	Mahindra & Mahindra	4	8
21	Edustation	3	7
22	MAQ Software	1	10
23	LWS(Off Campus)	1	10
24	Tutor Bin	1	6.36
25	Tata Power	1	6.97

₹ (in lakh per annum)

Highest
Package **46.3**

Lowest
Package **3**

Average
Package **8.10**

FOR M.TECH

Sl. No.	Name	No. of Offers	Package Offered (₹ in lakh per annum)
1	PP Savani University	3	5.4
2	Kalvium	1	5
3	Parul University	2	7.2

₹ (in lakh per annum)

Highest
Package **7.2**

Lowest
Package **5**

Average
Package **6.6**

STUDENTS ACTIVITIES

STUDENT ACTIVITY CENTER

The Student Activity Center NIT Meghalaya lies at the heart of the Institute for channelizing students' activities. The SAC engages the students with various extracurricular activities in Sports, Technical, and Cultural activities.

Through Sports, the SAC organized Intra NIT Tournaments in many sports disciplines such as Badminton, Table Tennis, Carrom & Chess, Football, Cricket, etc and also participated in Inter Institute events.

Coming to the Technical activities, the robotics and coding clubs have conducted several alumni talks, regular workshops/sessions, webinars, and industrial talks throughout the year for the benefit of the students.

Lastly, through the Cultural section, the various clubs under it have actively conducted programs such as annual music, dance, painting, essay writing, and quiz & debate competitions to nurture the hidden talents of the students. The students have also taken part in various Inter Institute events in all sections of SAC and have achieved positions and received awards.

ABOUT SHISHIR, CULTURAL FESTIVAL

SHISHIR, the Tenth Annual Cultural Fest of the National Institute of Technology, Meghalaya, unfolded from 4th to 6th April captured the essence of diversity and cultural exchange in its 2024 edition. Inspired by David Binder's words on the significance of festivals, SHISHIR aimed at fostering dialogue, creativity, and community engagement through a vibrant celebration of cultures.

EVENT HIGHLIGHTS:

- **Footfall:** SHISHIR 2024 witnessed an impressive footfall of over 1.8K attendees, including students, faculty, and visitors from across the region.
- **Club Events:** The fest featured over 28 events organized by various clubs and committee, ranging from traditional dance performances to literary debates, providing a platform for students to showcase their talents.
- **National and International Artists:** A highlight of SHISHIR 2024 was the participation of national and international artists, who mesmerized the audience with their performances, adding to the cultural richness of the event.
- **College Ambassadors:** The fest boasted a team of 150+ college ambassadors who played a crucial role in promoting and organizing various activities, ensuring the smooth conduct of the event.
- **Cultural Convergence:** SHISHIR 2024 exemplified cultural convergence, with every culture finding expression on a single stage. Attendees were treated to a diverse array of performances, ranging from traditional dances to contemporary music, showcasing the rich tapestry of cultures present at the event.
- **Community Engagement:** The fest served as a platform for meaningful dialogue and interaction among attendees, fostering a sense of community and understanding. Through workshops, discussions, and cultural activities.

The tenth Cultural Festival of NIT Meghalaya was conducted for three days of April, highlighting the following days:

- On 4th April 2024 (Day 1), the opening ceremony welcomed esteemed dignitaries, including Ambrose Ch. Marak, IAS, as the Chief Guest and Jahnu Barua, Indian Filmmaker, as the Guest of Honor. The musical extravaganza featured Spic Macay performances by 2024 Grammy award winner Rakesh Charausia, accompanied with Pt. Anutosh Degharia. The day ended with a fleeting performance of the local artists namely DJ Quills X Aedrian which sets a vibrant tone for the fest with cultural performances and engaging activities.



- Similarly on 5th April 2024 (Day 2), The Model United Nations (MUN) opening ceremony marked the day, featuring engaging discussions and deliberations. Attendees witnessed intellectual exchanges and diplomatic simulations, contributing to the fest's theme of fostering dialogue and understanding. Musical performances by Vivek Singh & Band added to the day's charm, further fueling creativity and cultural exchange.



- On the last day, 6th April 2024 (Day 3), the closing ceremony, graced by Director of General Police Shillong, marked the culmination of SHISHIR 2024 with grandeur and enthusiasm. The fest bid farewell with a performance by renowned international DJ Julia Bliss, captivating the audience with her music and energy. The day encapsulated the essence of diversity and unity, leaving attendees with cherished memories.



Events:

The festival embraces a collection of 28 events, from different sets of fine arts and culture, such as:

1. PANACHE:

Panache, a runway showdown hosted on 6th April 2024 with its pulsating energy and fierce competition displayed students from diverse backgrounds strut with confidence, each vying to captivate the audience and judges with their unique style and charisma. Adorned in meticulously crafted ensembles, they unleash a symphony of fashion, showcasing a kaleidoscope of themes from classic elegance to avant-garde innovation. From vibrant streetwear to elegant ensembles, the runway becomes a canvas for self-expression and exploration.



2. SHIMMER:

Freshers ignite the stage, on 5th April 2024, with youthful exuberance and boundless creativity to the scene and eagerly showcase their individuality and style, stepping onto the ramp with nervous excitement and anticipation. Dressed to impress in a kaleidoscope of trendy outfits, they exude confidence and charm, each determined to leave a lasting impression.



3. KRIGG:

Krigg, a category of exciting events which includes Dumb Charades, Snakes & Ladder, Musical Chair, Rangoli and Tug of war infuses the campus with joyous energy and spirited camaraderie. From themed games to friendly competitions, these gatherings offer a playful escape from academic rigors. Students revel in laughter and merriment as they participate in activities like game nights, and musical, fostering bonds that transcend classroom boundaries.

4. FUN EVENTS:

Fun events like gun shooting, dart shooting, and buzz wire, open for all 3-days of the festival, challenged participants with thrilling and competitive experiences. These activities not only provide entertainment but also foster teamwork, concentration, and friendly rivalry, creating unforgettable moments of excitement and camaraderie.



5. GAMING:

The event held from 4th to 5th April 2024, transform the atmosphere into a thrilling arena of strategy, skill, and adrenaline-fueled excitement and immerse yourself in a world of virtual challenges, where quick reflexes and tactical prowess reign supreme. From intense esports battles to friendly multiplayer showdowns, students from different schools and colleges engage in fierce competition across a variety of gaming genres and platforms

6. LITERARY CLUB EVENTS:

- Open Mic: The event embarked on a re-telling session of prose, poem, storytelling, stand-up comedy, jokes, quotes,

their life journey, experiences, etc, along with the crowd for light-hearted atmosphere.

- Extempore Speech: The event highlighted as challengers up to the take deliver impromptu speeches on randomized drawn topics within a limited timeframe & swiftly organize their thoughts, employing improvisational skills, coherence, and persuasion.
- Treasure Hunt: Let's hunt! Observe as teams decipher clues, solve puzzles, and navigate through various locations to find hidden treasures or objects by employing strategy, teamwork, and problem-solving skills to outwit opponents and locate the ultimate prize.

7. EBSB CLUB EVENTS

- Cultural Exhibition: The exhibition was hosted for three-days from 4th to 6th April 2024 which explore the richness of heritage and diversity through a vibrant

journey of food, art, traditions, and history of different states of India.

- Food Fest: The food festival was held on 5th April 2024 and explored the richness of heritage and diversity through food, and traditions.



8. DANCE AND DRAMA EVENTS

- **Flash Mob:** On 3rd April 2024, a lively public square filled with students coming together for an impromptu flashmob extravaganza, showcasing their talent through choreographed performances, all to kick off the most epic cultural fest of the year.
- **Step Up Dance Competition:** The 5th of April 2024 highlights the ultimate showdown of talent from NITs across the board & regional colleges. Dancers can showcase their skills in solo, duo, trio, and group categories, covering everything from traditional to contemporary styles.
- **Prom Night:** Prom Night, hosted on 6th April 2024, involves a classy affair where students come together in stylish themed attire for an evening of elegance and celebration. From dancing to socializing, with live music, themed decorations, and exciting entertainment, this prom promised to be a night to remember for all our college students.
- **Dramatics:** NIT Meghalaya students bring to life captivating stories filled with emotions, conflicts, and relationships. The drama bring about their remarkable acting skills unfold on stage as they engage the audience with thought-provoking insights into the human experience and reflection on important social issues.



9. MUSIC CLUB EVENTS

- **Symphony:** The 5th of April 2024, swept away the audience by the melodies at Symphony, the ultimate music competition. Categories from Vocal, Instrumental and Choir blaze the stage, each bringing their unique flair to the stage.



- **Spic Macay:** On 4th April 2024, Grammy Award 2024 Indian Flutist, Rakesh Chaurasia accompanied by Pt. Anutosh Degharia, an Indian Tabla Percussionist led to the discover the rich heritage of Indian classical music and culture with SPIC MACAY. Founded to promote these timeless traditions among youth, SPIC MACAY brings history to life with its captivating concept and philosophy. Through classical performances tailored for modern-day students, it bridges the gap between ancient art forms and contemporary life, fostering a deep appreciation for our cultural roots.



- **Battle of the Bands:** On 5th April 2024 afternoon, the stage showcases the ultimate clash of musical talent at the Battle of the Bands. College students from far and wide converge on the stage, armed with guitars, drums, and boundless energy. Each band unleashed their unique sound, blending genres and igniting the audience's excitement. It's a high-energy showdown where passion meets performance, promising an unforgettable experience for all.



10. PHOTOGRAPHY & FINE ARTS EVENTS:

- Photowalk: A one-day visit to Sohbar Village, Meghalaya on 23rd March highlighted the event where students explore the locations to capture creative images of the village, providing them with a chance to appreciate surroundings, experiment with photography techniques, and share experiences with fellow enthusiasts.
- 3D Live Drawing: The event, on 5th April 2024 displayed NIT Meghalaya's students artistic skills as they sketched 3D displayed objects.
- Art and Craft: The event, on 5th April 2024 dived into creativity and innovation of NIT Meghalaya's students as their artistic talent turn craft materials into captivating masterpieces
- Face Painting: Student in neon face painting on 5th April 2024 adds a glow to the festivities. Participants sport vibrant designs, creating a lively atmosphere of creativity and fun.



11. MODEL UNITED NATIONS (NITMMUN)

The event highlighted the ultimate diplomatic showdown at NIT Meghalaya's second edition of NITM MUN with Meghalaya MUN on 5th to 6th April. The two-days brimmed with electrifying debates, global solutions, and meaningful connections. With vibrant enthusiasm, the delegates bridge diplomacy and collaboration, simulating UN committees and tackling global issues head-on.

SAC SPORTS REPORT

CELEBRATION OF FIT INDIA WEEK 2023

1) CHESS, CARROM & TABLE TENNIS TOURNAMENT

The events of Chess, Carrom, Table Tennis and Yoga was held successfully on the 10th & 11th of November 2023 in celebration of FIT India Week 2023. Participants were coming from students, staff and faculties, which led to a successful tournament. Few photos are shown in the table below.



2) YOGA EVENT

1. Name of the Event: **Yoga Day Event (FIT India Week 2023)**
2. Organizing Section: Outdoor Sports Club, Student Activity Centre, NIT Meghalaya
3. Date of Event: 12/12/2023
4. Venue of the Event: Mini-Auditorium, National Institute of Technology Meghalaya
5. No. of Participants: 50 (Approx.)
6. Details of Experts: Dr. Anamika Upadhaya, Department of Environmental Studies, North-Eastern Hill University, Ayush Certified Yoga and Wellness Instructor
7. Brief outcome of the event:

The Outdoor Sports Club, NIT Meghalaya conducted Yoga Day Event to celebrate FIT India Week 2023 on 12.12.2023. As a part of this celebration, Dr. Anamika Upadhaya, Department of Environmental Studies, North-Eastern Hill University, Ayush Certified Yoga and Wellness Instructor delivered a Yoga Session. The faculties and students from the institute participated the event and the Yoga Session. T-shirts were distributed to celebrate the same. During the session the invited Yoga instructor delivered the importance to Yoga to reunite body and mind and how it's been practiced in India since ancient times.

Selective Relevant Images:



3) Intra-NIT Basketball Tournament was held on 16th September 2023 (Saturday) from 9:00 am to 2:30 pm and 17th September 2023.



International Day of Yoga was held and celebrated on the 21st of June 2023



4) Intra NIT Meghalaya Cricket tournament was held on 2nd and 3rd March (Saturday and Sunday) in NEHU Outdoor Sports Ground

RANK	TEAM NAME	CAPITAN NAME	VICE CAPITAN
WINNER	Final year 11	Utkarsh Ranjan	Balram sharma
RUNNER	Faculty Hit and Run Club	Saikat Mukherjee	Sanjoy Debbarma



5) Intra NIT Meghalaya Football tournament was held on 2nd and 3rd March (Saturday and Sunday) in POLO Sports Ground

RANK	TEAM NAME	CAPITAN NAME	VICE CAPITAN
WINNER	IATYLLI FC	Freshmi Shylla	Marbhahki Laloo
RUNNER	Back to the 90's	Charelangmi I Shylla	Brandon Kupar Shullai



The Grand Finale



Winners



Runners-Up

NIT Meghalaya performed exceptionally well during the Inter NIT Sports meet in NIT Durgapur, securing the **runners-up position** in football and achieving the **2nd position** in weight-lifting (Category: 66kg, Name: Subhadeep Sinha, Roll No: B21EC004) and Anthony N Sangma (Roll No: B20ME006), was recognized as the Best Football Player.



TECHNICAL FESTIVAL (COGNITIA):

SAC organized the Annual Technical Festival **Cognitia 2023** from the 2nd to 4th November 2023. There were many competitive events and In addition, there were several invited talks, and workshops also organized during the event.



Cognitia Inauguration



Coding Club Events



Astronomy Club Events





Photography Club Events



Gaming Events



Tech Quiz



Robotic Events



Departmental Events



Podcast with an entrepreneur during Cognitia

Celebration of Swachhata Abhiyan

NIT Meghalaya is organizing Swachhata Abhiyan during the month of October 2023. In this event Cleanliness Drive is being organized in the Lapalang Ground (Near L-4 Boys Hostel). The event sees active participation by all the students, faculty members, staff, and local authorities.



Swachhata Rally

As part of Swachhata Abhiyan Campaign, NIT Meghalaya is organizing a Swachhata Rally on 2nd October 2023.



Swachhata Abhiyan Rally

Meri Maati Mera Desh:

Meri Maati Mera Desh, Mitti ko Naman, Veeron ka Vandan. This campaign was organized in phase one dated 30th August 2023 and phase two dated 14th November 2023, where local icons were felicitated on their contribution towards the society, the state and to the nation namely Mr. Lamphang Syiemlieh (Music), Mrs Trinity Saioo (Agriculture), Mr Eugeneson Lyndoh (Sports Person), Bethany Hospital & to the Headman of Mawlynnong Village (Cleanest Village in Asia).



Celebration of Bhartiya Bhasha Utsav 2023:

NIT Meghalaya celebrated Bharatiya Bhasha Utsav 2023 [focusing on multilingualism] with the theme, भाषाएँ अनेक, भाव एक on 11/12/2023. As a part of this celebration, an expert talk was organised and the theme of the talk was “Linguistic Plurality and Cultural Diversity of India”. A lot of discussions held on the topic among the audience followed by the expert talk. The whole lot of audience participated actively in the discussion held with the invited speaker to gain knowledge and to dive into the importance of multilingualism of India. Few competitions on the promotion of multilingualism such as singing, storytelling, poem recitation, etc. in various regional languages of India were also held. Each of the participants in various events were given with a gift as a token of appreciation and a certificate of participation.



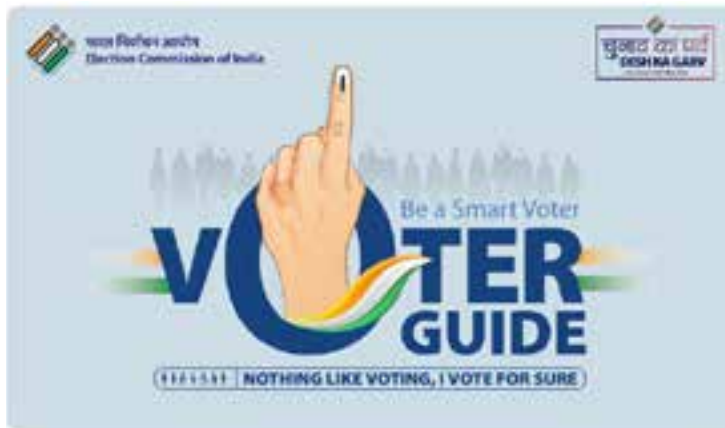
National Youth Day 2024:

National Youth Day was held on 23rd January 2024 where speeches on the youth were delivered by Swami Anuragananda and Sunil Mohanty.



National Voters Day:

National Voters Day was organized in the Institute on the 25th of January 2024.



SPIC MACAY MEET

Dr. Kiran Seth the founder of Spic Macay visited NIT Meghalaya on the 1st of March 2024, where he shared his life journey on SPIC Macay and about his Cycling Yatra over several states in India and also delivered lectures to students, staff and faculties.



CELEBRATION OF UNITY DAY

Unity Day was celebrated on the 31st October 2023 where students participated in drawing and painting events.



JANJATIYA GAURAV DIWAS

SAC conducted events from 15th to 26th November 2023 in celebration of Janjatiya Gaurav Diwas where students participated in essay and painting competitions and also paid tribute to local heroes.



RANGOLI AND ILLUMINATION COMPETITION 2023 was conducted on 10th & 13th November 2023



KHADI MAHOTSAV was conducted from 2nd to 31st October 2023.



OPEN MIC was conducted on 7th October 2023 at NITM Sohra Campus.



CULTURAL EVENING (SWACHCHATA)



PATRIOTIC POEM READING COMPETITION on 14th August 2023



INTRA NIT SPEECH COMPETITION was held on 15th September 2023



List of SAC Notable Students Achievements 2023-24

Sl. No.	Name of Awardee	Roll No	Department	Award /Recog. Name Event Name	Awarded By	Date/Year of the Event
1	Manisha Kumari	B22ME020	ME	Technical Awards Cycle Assembler Electrorisc	Cognitia 2023(Tech-Fest)	2 nd to 4 th November 2023
2	Sonali Samal	P21CS002	CS	Raman-charpak fellowship	Department of Science and Technology (DST), Government of India. & French Embassy, India	1st February, 2024
3	Trishna Rajbongshi	S22PH014	PH	1.Winner (1st position in Step-up dance, Shishir 2023), 2.3rd position in singing competition (International Women's day celebration 2024)	1. Shishir (Cultural fest 2023), 2. International Women's Day Celebration 2024	1 st April 2023 2.March 2024
4	Hriti Chakraborty	B22CE023	CE	Ms. Shimmer 2023	Shimmer Contest NIT Meghalaya	2nd April 2023
5	Pardhu Mattupalli	B20CS020	CS	Mr. Panache 2023	Panache contest NIT Meghalaya	2nd April 2023
6	Manisha Kumari	B22ME020	ME	Sports and Games	Arm Wrestling (below 55 kg) Shishir 2023 NIT Meghalaya	2-4 April 2023 (Cultural Festival)
7	Anthony N Sangma	B20ME006	ME	Football	Best player Inter NIT NIT Durgapur	October 2023
8	Likha Memin	B21CE014	CE	Best Sportsperson(Female)	Institute Day 2024 NIT Meghalaya	--
9	Subhadeep Sinha	B21EC004	ECE	2nd Position	State Powerlifting Championship Powerlifting India, Meghalaya Powerlifting Association	September 2023
10	Subhadeep Sinha	B21EC004	ECE	2nd Position	Inter NIT Powerlifting Championship NIT Durgapur	November 2023
11	Subhadeep Sinha	B21EC004	ECE	Best Sportsperson (Male)	Institute Day 2024 NIT Meghalaya	1 st April 2024
12	Anjani Kumar, Arnab Paul, Harsh Kumar	IEEE GCON Vegathon (National Level Hardware Hackathon)	Semi-Finalist	IIT Guwahati	IEEE India Council and C-DAC Trivandrum	June 14 - 15, 2023

NSS ACTIVITIES

"Mera Phela Vote Desh Ke Liye" Campaign (28th February 2024-14th March 2024)

To strengthen the spirit of democracy and encourage first time voters to exercise their right to vote, Ministry of Education and Ministry of Youth Affairs launched a campaign "Mera Phela Vote Desh Ke Liye" from 28.02.2024 to 14.03.2024. Several events were organized at NIT Meghalaya to ensure the first time voters realize the importance of voting. The details are as follows:

1. Selfie Point:

To promote Electrical literacy, Various Selfie Points were placed across the Institute's temporary campus at Shillong and permanent campus at Sohra.





Figure 1: Images of NIT Meghalaya Students

2. Voter's Pledge:

Offline pledge was administered during the campaign and students were encouraged to administer pledge online at mygov.in website (<https://www.mygov.in/mera-pehla-vote/?target=webview&type=campaign&nid=0>). Instruction videos were also prepared for demonstration purpose as to how to pledge online.



Figure 2: Online voter's pledge and snapshot of video demonstrating how to administer pledge online

3. Reels Competition:

Inspiring reel making competition was also organized to encourage young voters to promote voting. Students participated enthusiastically in this event, motivating first time voters to vote and encouraging all eligible citizen to exercise their right to vote.



Figure 3: Reels submission by participants of NIT Meghalaya

4. Drawing and Poetry Competition

A drawing and poetry competition was organized on the theme of “Chunav ka Parv” and “Chunav: Mera Desh ka Garv” respectively.

5. Sharing of Educational Documents, Election Guide Book and Guidance Lecture

During the course of campaign, educational documents were shared via mail with students of NIT Meghalaya, Short lectures were organized for the students to discuss with them how to use the guide and encouraged to download voter help line app.



Figure 4: Submission by Participants



Figure 5: Snapshots of guidance lecture and sharing of hard copies of Voter's Guide to Class Representative, soft copies distributed by mail.

Overall, the students participated enthusiastically in the campaign and pledge to cast vote in upcoming elections, also, promised that they will ensure to motivate their relatives and friend to exercise their voting right and contribute toward a developed India.

CENTRAL LIBRARY

The Institute's Central Library has grown substantially. The Library houses a large collection of well-known works in engineering, technology, science, humanities, social sciences, and management. Its goal is to equip students and teachers with the required knowledge and skills to improve their learning and research. The library has a collection of more than 15,500 text and reference books. The Library also provides access to a wide range of electronic books, databases, and periodicals. Furthermore, there are book bank facilities exclusively for SC/ST students. The Library subscribes to a number of comprehensive databases, including ScienceDirect, Springer-Link, ACM Digital Library, IEL (GP), ASCE, ASME, and MathSciNet, which is an electronic bibliographic database. The Library has approximately 9674 electronic books from major publishers such as Pearson, Wiley, Elsevier, Springer Nature and other publishers to fulfill students' growing information needs.

The Library uses Library Management software, notably Koha, to automate its operations. This involves total automation of the circulation process within the program. The OPAC (Online Public Get Catalogue) allows users/patrons to obtain information on library resources. The Library has purchased subscriptions to Turnitin, an anti-plagiarism program, Grammarly, and QuillBot software tools to assist researchers and academic members with grammar and paraphrase. Users can access the online databases by connecting to the institute's network. The Web OPAC (Online Public Access Catalog) allows users to access and search the library's collection.

BUDGETARY & EXPENDITURE DETAILS

The Central Library's budget for FY 2023-24 is Rs. 1.5 crore. Based on the requirements, an additional money of Rs. 9156356/- has been awarded to the Central Library, bringing the total budget to Rs. 24156356/-. The chart below shows the detailed expenses incurred on books, periodicals, newspapers, binding, and so on.



Year	Ebooks	Printed Books	Online Databases/ e-Journals	Newspapers & Magazine etc.
2023-24	8003436.00	12369.00	16115551.00	25000.00

LIBRARY COLLECTIONS:

The central library's collections include books, electronic resources, theses, reports, and other reading materials in science, engineering and technology, humanities, social sciences, and management. The library's overall collection as of March 31, 2024, is as follows.:

Sl.No.	Name of Resources	Colections as on 31st March 2024
1	Printed Books	15510
2	E-Books	9674
3	E-Databases/E-Journals	13(6005)
4	Book Bank (SC/ST)	1462
5	Theses	109
6	Magazines	4
7	Newspaper	8
8	Reports/Annual Reports/Audit Reports	43

AREA AND SEATING CAPACITY

Total Area of the Libraries is : 170 Sq. Meter

Seating capacity : 50



LIBRARY HOURS:

The Institute library remains functional on all the working days except for few national and gazette holidays and remains open for 10 hours a day i.e. 9 AM to 7 PM.



HUMAN RESOURCES:

The library has a small but talented and dedicated staff that carry out their tasks and responsibilities with respect and honesty. The Central Library personnel details are as follows:

Sl.No.	Name of the Staff	Designation	Quaifications
1	Dr. Rokester Kharbihkhie	Assistant Librarian	Ph.D., MLISc (with NET & JRF), B.Sc. Computer Science, PGDCA
2	Dr. Khawbok Nongrang	Technical Assistant (LB)	Ph.D., MLISc (with NET), B.Sc. Computer Science, PGDCA
3	Mr. Donny Bryan Thabah	Junior Assistant (LB)	MLISc, B.A. (Geography)
4	Mr. Rahul Kharbangar	MTS (LB)	B.A., C-Lib
5	Marvellisa K. Kharukhi	Junior Assistant (LB) (Outsource)	MLISc (with NET), B.A.(Pol. Sc.)

PERMANENT CAMPUS

The construction activities in the permanent campus of the Institute have been making good progress till 2017-18 under the overall

supervision of RITES Ltd, the Project Management Consultant (PMC) for the Phase-I constructions of the permanent campus of the Institute at Sohra (Cherrapunjee). As per RCE approved by the Cabinet and circulated vide Ministry letter F No.33-1/2012.TS-III dated New Delhi, 4th March 2020 an amount of Rs.429.70 crores has been earmarked for Civil Works. As per RCE approval, only the following buildings are to be completed in order of their priority, viz; Administrative Building, Academic Building (4 blocks), Hostel Buildings (Boys and Girls), Faculty & Staff Quarters type A,D&E, Library cum Computer Centre, Workshop Building, Lecture Hall, Director Bungalow, Sports complex, ESS-1 & ESS-2. The other works/buildings, viz; Auditorium Building, Guest House, Medical Centre, ESS-3 & ESS-4 etc. have been foreclosed.

Out of the above RCE approved buildings, the construction of these buildings have been completed and handover to the Institute by the PMC (RITES Ltd) viz; Administrative Building, Academic Building (4 blocks), Library cum Computer Centre, Workshop Building, Sub Station (ESS) Building (2 Nos). However, due to requirement for energizing the Hostels blocks the ESS-3 buildings have also been taken up and completed from IRG of the Institute.

The left over balanced work of the RCE approved works viz Hostels, Residences & Sports complex is being taken up on

Priority basis as follows:

Priority 1: Boys Hostel 3-seater, Girls Hostel & Director Bungalow

Priority 2: Boys Hostel 1-seater B-Block, Residential Qtrs Type A,D,E & Sports Complex.

The re-tendering of the buildings under Priority-1 have been completed and awarded to the contractor and the work is now in progress. On the other hand, the buildings under Priority-2 is under tendering by RITES Ltd. The overall physical progress of works undertaken by RITES Ltd. (PMC) is about 72%.

The construction of water storage reservoir inside the campus is completed. Also the construction of other works viz Internal Road works, sewage system (septic tank), 33KV Power supply under MePDCL & MePTCL, External electrical works under CPWD are in progress and nearly completion. The work for Water Supply System at permanent campus has been recently awarded and started. Also the works for temporary conversion of Academic-B Building to Girls Hostel is also in progress. The Institute re-scheduled shifting to the permanent campus by August 2024.

Attached herewith few photographs of completed & ongoing works in the permanent campus.



Academic Building - A



Academic Building - B



Academic Building - C



Academic Building - D



Administrative Building



Library Building



Boys Hostel (3-Seater)



Boys Hostel B Block



Girls Hostel



Workshop Building



QTRS TYPE- A



QTRS TYPE- D



QTRS TYPE- E



ESS-1



ESS-2



ESS-3



LECTURE HALL

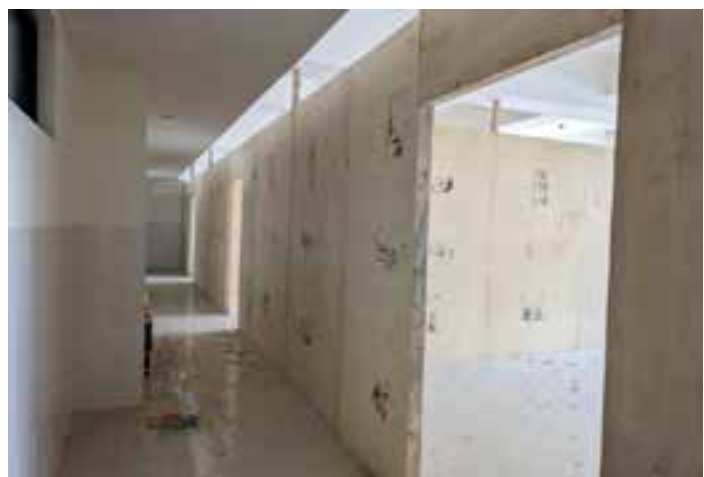


SPORTS COMPLEX



WATER STORAGE RESERVOIR



*INTERNAL ROAD**TEMPORARY CONVERSION OF ACADEMIC B-BLOCK TO GIRLS HOSTEL**33 KV POWER SUPPLY TO THE CAMPUS (MeECL)**EXTERNAL ELECTRICAL WORKS IN THE CAMPUS (CPWD)*

IMPLEMENTATION OF THE RIGHT TO INFORMATION ACT, 2005:

In accordance with the provision of Section 5(2) of the Right to Information Act, 2005, NIT Meghalaya has appointed Shri Bantehsonglang Blahwar, Asst. Registrar (Establishment) {upto 11.01.2024} and Smt. Ambika Rai, Asst. Registrar (Establishment) {w.e.f 12.01.2024} as the Public Information Officer for the Institute. The Director is the designated First Appellate Authority of the Institute. The details of both have been clearly displayed on the Institute website under the RTI link.

As mandated under Section 4 (1) a) of the RTI Act, 2005, the Institute is moving towards complete digitization and computerization of information for easy access and quick response to RTI queries. The Institute is complying with the provisions of Section 4 (1) b) and Section 4 (2) and has provided *suo motu* all required information and documents on the Institute website. Annual Report and Statement of Annual Accounts are displayed

as soon as they are approved by the parliament. Other documents like Minutes of Board of Governors and Senate meetings are uploaded as soon as they are confirmed.

The Institute has been very prompt in replying to RTI queries, both received directly or forwarded from the Ministry. The Institute has been registered with RTI Request & Appeal Management Information System (RTI-MIS) portal and almost all RTI queries are received, replied and closed through the portal. The Institute is regularly submitting quarterly reports as required on the RTI-MIS portal. Quarterly reports of RTI queries received and closed are also uploaded regularly on the portal of the Central Information Commission, Govt. of India (dsscic.nic.in).

A summary of the quarterly reports submitted on the RTI-MIS portal for the Financial Year 2023-24 is shown in the table below:

Progress during 1 st Quarter (01.04.2023 – 30.06.2023)						
	Opening Balance as on beginning of Quarter 1	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/appeals rejected	Decisions where request/appeals accepted (Request dispose of and request return to applicant)
Requests	01	00	06	00	00	07
First Appeals	00	00	00	00	00	00
Progress during 2 nd Quarter (01.07.2023 – 30.09.2023)						
	Opening Balance as on beginning of Quarter 2	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/appeals rejected	Decisions where request/appeals accepted (Request dispose of and request return to applicant)
Requests	00	00	06	00	00	06
First Appeals	00	00	00	00	00	00
Progress during 3 rd Quarter (01.10.2023 – 31.12.2023)						
	Opening Balance as on beginning of Quarter 3	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/appeals rejected	Decisions where request/appeals accepted (Request dispose of and request return to applicant)
Requests	00	00	09	00	00	04
First Appeals	00	00	01	00	00	01

Progress during 4th Quarter (01.01.2024 – 31.03.2024)

	Opening Balance as on beginning of Quarter 4	No. of applications received as transfer from other PAs u/s 6(3)	Received during the Quarter (including cases transferred to other PAs)	No. of cases transferred to other PAs u/s 6(3)	Decisions where request/appeals rejected	Decisions where request/appeals accepted (Request dispose of and request return to applicant)
Requests	05	00	25	00	00	30
First Appeals	00	00	00	00	00	00

STATUS OF FILLING UP OF BACKLOG VACANCIES DURING THE YEAR 2023-24 ON MISSION MODE:

The Economic Advisor (HE), Ministry of Education (MoE) had issued instructions to all Central Higher Education Institutions (CHEIs) regarding the Special Drive to fill backlog vacancies on Mission Mode vide Office Memorandum F.No.33-2/2021-TS.III (Pt-1) dated 25.08.2021 by enclosing a Letter No. D.O No. 33-2/2021-TS-111(Pt.I) dated 24.08.2021 from the Secretary, MoE to the different Bureau Heads. Through the said letter, the Secretary (HE) has informed that in order to fill the backlog vacancies for the faculty positions that are lying vacant, especially in the Scheduled Castes, Scheduled Tribes, Other Backward Classes and EWS categories in the CHEIs functioning under the administrative control of the MoE, it has been decided that all CHEIs should fill these vacancies in a Mission Mode within a period of one year starting from 05.09.2021 to 04.09.2022 and to report about the action taken and progress made in this regard through the following mechanism :-

- By including a separate chapter in their Annual Report (starting from 2021-22) depicting the status of filling up of backlog vacancies in tabular format during the year.
 - By including an agenda Item in every Finance Committee / Board of Governors / Board of Management meeting, giving status of filling up of backlog vacancies.
 - The Heads of all CHEIs will send a monthly report to Secretary (HE) (starting from September 2021) appraising the status of action taken.
- (A) To comply with the above-mentioned instructions of MoE, this chapter has been added to the Annual Report 2023-24.
- (B) To comply with the above-mentioned instructions of MoE, this matter was also discussed in the BoG held during the Fy 2023-24 as per the following details:

Sl. No.	BOG Resolution No	Dated
1.	BoG-XXXIII(2023)-R5	27.06.2023
2.	BoG-XXXVIII(2024)-R12	16.02.2024

- (C) The Institute has been regularly sending the monthly report to the Department of Higher Education (HE), Ministry of Education, appraising the status of action taken in filling up the faculty vacancies on Mission Mode. The letter number and date of submission of the monthly reports in the financial year 2023-24 are presented below:

Sl. No.	Report for the month of	Letter No.	Dated
1.	April 2023	NITMGH/ES/MoEd-RPT/BV/2023-24/260	09.05.2023
2.	May 2023	NITMGH/ES/MoEd-RPT/BV/2023-24/485	05.06.2023
3.	June 2023	NITMGH/ES/MoEd-RPT/BV/2023-24/756	05.07.2023
4.	July 2023	NITMGH/ES/MoEd-RPT/BV/Vol.II/2023-2424/1055	03.08.2023
5.	August 2023	NITMGH/ES/MoEd-RPT/BV/Vol.II/2023-2424/1655	06.10.2023
6.	September 2023		
7.	October 2023	NITMGH/ES/MoEd-RPT/BV/Vol.II/2023-2424/2005	03.11.2023
8.	November 2023	NITMGH/ES/MoEd-RPT/BV/Vol.II/2023-2424/2472	22.12.2023
9.	December 2023	NITMGH/ES/MoEd-RPT/BV/Vol.II/2023-2424/2752	24.01.2024
10.	January 2024	NITMGH/ES/MoEd-RPT/BV/Vol.II/2023-2424/2891	14.02.2024
11.	February 2024	NITMGH/ES/MoEd-RPT/BV/Vol.II/2023-2424/3211	11.03.2024
12.	March 2024	NITMGH/ES/MoEd-RPT/BV/Vol.II/2024-25/109	16.04.2024

STATUS OF PUBLIC GRIEVANCES RECEIVED DURING THE YEAR 2023-24:

As per mandate of the Government, NIT Meghalaya has appointed the following officer as the Public Grievance Officer to be the nodal point for redress of grievances received by the Institute in the form of letters or through the Centralised Public Grievance Redress and Monitoring System (CPGRAMS) portal:

1) Shri Bantehsonglang Blahwar, Asst. Registrar (Establishment) {upto 11.01.2024} and

2) Smt. Ambika Rai, Assistant Registrar (Establishment) {w.e.f 12.01.2024}

The Institute is registered with the CPGRAMS portal since the year 2015. The Institute has been prompt in replying to all grievances received till date. The details of the public grievances received, replied and closed in the year 2021-22 are shown in the table below:

Registration Number	Name	Received Date	Dairy Date	Current Status	Pending with	Grievance Redress Time (in days)	Dept./ Organisation Redress Time (in days)	Mode Of Transfer
DSEHE/E/2023/0006257	Badri Rai and Company	2023-10-04	2023-09-14	Final Closure	Grievance is closed.	56	36	NA
DSEHE/E/2023/0008293	Asis Kumar Tripathy	2023-12-11	2023-12-01	Final Closure	Grievance is closed.	39	29	NA
PMOPG/E/2024/0032221	आशीष यादव	2024-02-23	2024-02-09	Final Closure	Grievance is closed.	32	18	NA

ACADEMIC DEPARTMENTS AND CENTRES



DEPARTMENT OF CIVIL ENGINEERING

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

NIT Meghalaya's Civil Engineering department commenced its session in July 2012. The Department, which has an intake capacity of 30 students, offers a 4-year (eight semesters) B. Tech program in Civil Engineering. Since 2014, the Department has launched the Ph.D. program. Additionally, the department initiated an M.Tech program in Structural Engineering in July 2018 with an intake capacity for 20 students, of which 15 students have enrolled.

The academic endeavors of the Department emphasize a profound understanding of the fundamental principles of Civil Engineering, the development of creative ability to address the challenges of Civil Engineering, and the analytical capability to solve interdisciplinary problems. The Department also encourages its students to engage in extracurricular and co-curricular activities, essential for their personal development, fostering team spirit, and developing organizational skills. The faculty members of the Department are engaged in high-quality research and continue to explore new frontiers of groundbreaking technical knowledge, recent inventions, and discoveries. The findings from this research are imparted to the students to ensure they are familiar with the latest trends in the evolving engineering world. The Department actively promotes curriculum development activities by updating existing courses, creating new courses, and preparing updated resource material for teaching. The Department also aims to contribute to the interdisciplinary academic and research activities of NIT Meghalaya.

Moreover, the department encourages students, faculty members, and all other stakeholders to contribute to the development of Meghalaya, the North East region, and the nation as a whole.

Vision:

A Centre of Excellence with a global reputation in Civil Engineering education, research, and consultancy, dedicated to producing high-quality professionals, generating innovative knowledge and technologies in these fields, and contributing to the economic development of the region through various outreach activities

Mission:

- To impart quality education in the fields of Civil Engineering and allied areas through academic programs at both UG and PG levels.
- To carryout research for advancement of knowledge and development of technologies in the fields of Civil Engineering and allied areas for the benefit of the society.
- To participate in extension activities for the socio-economic development of the region.

2. PROGRAMMES OFFERED:

- Four year (Eight semester) B.Tech Degree with 30 intake capacity per year.
- Two year (Four semester) M.Tech Degree in Structural Engineering with 20 intake capacity.
- Ph.D. programme with the specialization of Structural, Geotechnical, Water Resources, Environmental and Transportation Engineering.

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. Guidance
Dr. Comingstarful Marthong	Professor	Ph.D	Structural Engineering	January 10, 2013	2 ongoing
Dr.M. Longshithung Patton	Associate Professor	Ph.D	Structural Engineering	October 06, 2013	2 ongoing
Dr. Hriday Mani Kalita	Assistant Professor	Ph.D	Water Resources Engineering	August 12, 2014	2 ongoing
Dr. Smrutirekha Sahoo	Assistant Professor	Ph.D	Geotechnical Engineering	November 02, 2015	3 ongoing
Dr. Susmita Sharma	Assistant Professor	Ph.D	Geotechnical Engineering	May 10, 2016	2 ongoing
Dr. Debabrata Podder	Assistant professor	Ph.D	Structural Engineering	June 23, 2016	1 ongoing
Dr. Dibyendu Adak	Assistant Professor	Ph.D	Structural Engineering	January 03, 2018	3 ongoing
Dr. Ganesh Chandra Dhal	Assistant Professor	Ph.D	Environmental Engineering	September 24, 2019	2 ongoing
Dr. Pradeep Gautam	Assistant Professor	Ph.D	Transportation Engineering	October 14, 2019	1 ongoing
Dr. Needhi Kotoky	Assistant Professor	Ph.D	Structural Engineering	8TH SEP 2020	2 ongoing
Dr. Rubi Chakraborty	Assistant Professor	Ph.D	Geotechnical Engineering	July 21, 2014	1 ongoing

4. STAFF PROFILE

Name	Designation	Qualification	Date of Joining	Nature of Job
Mr. KhlorisingKharmih	Technical Assistant	Diploma in Engineering	July 14, 2014	Permanent
Mr. Gaddiel M Kharbithai	Technical Assistant	Diploma in Engineering	December 15, 2021	Permanent
Mr.Melbournekid.syiemiiong	Technical Assistant	Bachelor of Technology	September 27, 2023	Permanent
Mr. Purnadip Roy	Technician	Diploma in Engineering	March 03, 2016	Permanent
Mr. Samuel Bennett	Technician	Diploma in Engineering & A.M.I.E	September 01, 2016	Permanent
Ms. Rita Mary Lyngdoh Marshilong	Technician	Diploma in Engineering & Bachelor of Technology	December 17, 2021	Permanent
Ms. Mary Bennett	Technician	Diploma in Engineering	December 21, 2021	Permanent
Ms. Dunakiwan I Lapasam	Laboratory Attendant	Bachelor of Technology	December 24, 2021	Permanent
Mr. DonboklangSohkhia	Technician (outsourced)	Bachelor of Technology	November 22. 2022	On Contract

5. LIST OF PUBLICATIONS:

a. Journals (Year 2023):

- Richard Badonbok Lyngkhohi, Teiborlang Warjri, Comingstarful Marthong (2023). "Shear performance of AAC masonry triplets strengthened by reinforcing steel wire mesh in the bed and bed-head joint", Earthquake and Structures, Techno press, 25 (3), 149-160..
- Wanraplang Warlarpah and Comingstarful Marthong (2023). "Shear behaviour of AAC masonry walls with and without openings strengthened with welded wire mesh", Structural Engineering and Mechanics, Techno Press, 87 (5), 487-498,
- Richard Badonbok Lyngkhohi, Teiborlang Warjri, Wanraplang Warlarpah and Comingstarful Marthong (2023). "Effectiveness of steel wire mesh as a strengthening material for masonry walls: A review", Structural Monitoring and Maintenance, Techno Press, 10(2), 117-132,
- Richard Badonbok Lyngkhohi, Teiborlang Warjri, Comingstarful Marthong (2023). "Experimental investigation of AAC masonry walls reinforced with steel wire mesh embedded in bed and bed-head joint under axial compressive loading", Construction and Building Materials, Elsevier, 392,132035,
- Richard Badonbok Lyngkhohi, Teiborlang Warjri, Samuel Bennett, Comingstarful Marthong (2023). "Effect of moisture content on the mechanical behaviour of AAC masonry systems", Materials Today: Proceedings, Elsevier, 1-7,
- Richard Badonbok Lyngkhohi, Teiborlang Warjri, Comingstarful Marthong (2023). "Use of steel wire mesh for compressive strength enhancement of AAC masonry wall", Materials Today: Proceedings, Elsevier, 1-8,
- ML Patton, SBF Warsi, D Adak. Experimental and Numerical study on the Structural behaviour of HST, RCC and CFST stub columns under pure axial compression, Innovative Infrastructure Solutions, Springer, Vol.-8, 74, 2023..
- D. Adak; A. Chand; M.L. Patton; S. Dutta; H. Bisht. Experimental investigation on the structural performance of nano-Silica blended square and circular CFST stub columns, Practice Periodical on Structural Design and Construction, ASCE, 2023. DOI: 10.1061/PPSCFX.SCENG-1203.
- ML Patton. Structural Behaviour of HST and RCC Stub Columns under Axial Compression, Materials Today: Proceedings, Elsevier, 2023.
- KH Lepcha, ML Patton. Structural behaviour of LDSS tubular beams with web perforation under three-point bending, Structures, Elsevier, 2023.
- H. M. Kalita, An efficient hybrid numerical model for bed morphology calculations in alluvial channels, Iranian Journal of Science and Technology, Transactions of Civil Engineering, Vol. 47, Issue No. 2, Page Nos. 1189-1196, 2023
- Samal, R., and Sahoo, S. (2023). "Importance of PET Geogrid in the Enhancement of Hill Slope's Safety Factor: A Finite Element Approach." Engineering Research Express. Volume 5, Number 2. DOI 10.1088/2631-8695/acd049 (Scopus)
- J. S. Gidon, J. Borah, S. Sahoo, S. Majumdar and M. Fujita (2023). "Bi-Directional LSTM Model for Accurate and Real-Time Landslide Detection: A Case Study in Mawiongirim, Meghalaya, India." IEEE Internet of Things Journal, DOI: 10.1109/JIOT.2023.3326203. (SCIE) Q1
- Samal, R., Sahoo, S., Badavath, N. (2023). "Static Stability Analysis of Bamboo Grid-Reinforced Slopes." Engineering Proceedings; 56(1):112. <https://doi.org/10.3390/ASEC2023-15887>. (Scopus)
- Pathak, P., Sharma, S., Ramkrishna, S., "Circular transformation in plastic management lessen the carbon footprint of the plastic industry", Materials Today Sustainability, Volume- 22, DOI- 10.1016/j.mtsust.2023.100365 2

16. Baruah, P., Phukan, A., Sharma, S., Nath, A. "Laser Induced Breakdown Spectroscopy For Strength Assessment In Ca Binded Soils", *Spectrochimica Acta Part B: Atomic Spectroscopy*, Volume- 206, 2023, 106726
17. Baruah, P., Sharma, S., "Chemico-mechanical activation of EICP-modified soil: role of urease enzyme" *Environmental Earth Sciences* Volume- 82:563, 2023
18. Bora, A., and Podder, D. (2023). Residual Stress Reduction Through Thermomechanical Tensioning for an Orthotropic Steel Bridge Deck. *Journal of Materials Engineering and Performance*
19. D. F. Marbaniang, A. Kar, D. Adak, K. K. Ramagiri, D. Srinivas, and I. Ray, Optimization of Activator Concentration for Graphene Oxide-Based Alkali-Activated Binder, *ACI Materials Journal*, 2023, 20(3), 57–72.
20. D. Adak; A. Chand; M.L. Patton; S. Dutta; H. Bisht. Experimental investigation on the structural performance of nano-Silica blended square and circular CFST stub columns, *Practice Periodical on Structural Design and Construction*, ASCE, 2023. DOI: 10.1061/PPSCFX.SCENG-1203.
21. ML Patton, SBF Warsi, D Adak. Experimental and Numerical study on the Structural behaviour of HST, RCC and CFST stub columns under pure axial compression, *Innovative Infrastructure Solutions*, Springer, 2023, 8(74).
- Based-Accuracy-Assessment?redirectedFrom=fulltext. (SCIE)
6. Gidon, J.S., Sahoo, S.(2024). "Monitoring of Hydrological Properties of Soil and Slope Instability." *International Journal of Geotechnical Engineering*. (Accepted) (Scopus)
7. Samal, R., Sahoo, S. and Naveen, B. (2024). "Static and seismic stability investigation of a bamboo grid reinforced slope with different stepped reinforcing arrangements". *Engineering Research Express*. Volume 6, Number 1. DOI 10.1088/2631-8695/ad32b1 (Scopus)
8. Badavath, N., Sahoo, S. & Samal, R. Assessing soil erosion risk in Meghalaya, India: integrating geospatial data with RUSLE model. *Environ Dev Sustain* (2024). <https://doi.org/10.1007/s10668-024-04855-4>. (SCIE) Q1
9. Salim Barbhuiya, Bibhuti Bhusan Das, Tanvir Qureshi, Dibyendu Adak, Cement-based solidification of nuclear waste: Mechanisms, formulations and regulatory considerations, *Journal of Environmental Management*, 2024, 356, 120712
10. Salim Barbhuiya, Bibhuti Bhusan Das, Dibyendu Adak, Roadmap to a net-zero carbon cement sector: Strategies, innovations and policy imperatives, *Journal of Environmental Management*, 2024, 356, 121052.
11. Salim Barbhuiya, Bibhuti Bhusan Das, Dibyendu Adak, Advancements and perspectives in engineered cementitious composites (ECC): a comprehensive review, *Magazine of Concrete Research*, 2024, 1-46.
12. S.M. Amartya Paul, Gaurav Bhargava, Pradeep Kumar Gautam, Non-Destructive Evaluation of Strength and Porosity of Bituminous Mixes Using Log Periodic, *IEEE Trans. Instrum. Meas.* (2024) 10
13. Probabilistic Assessment of Seismic Response of Toe-Excavated Partially Saturated Hillslopes. Chakraborty R, Dey A, *Indian Geotechnical Journal*, 2024.

Year 2024:

1. Richard Badonbok Lyngkhai, Teiborlang Warji, Comingstarful Marthong (2024). "Shear behaviour of AAC masonry reinforced by incorporating steel wire mesh within the masonry bed and bed-head joint", *Earthquake and Structures*, Techno press, 26(5), 363-382,.
2. Teiborlang Warji, Richard Badonbok Lyngkhai, Comingstarful Marthong (2024). "Impact of moisture content on the compressive and shear behavior of an autoclaved aerated concrete masonry" *Journal of Materials in Civil Engineering*, ASCE, 36(6), 04024127-1 to 13, ASCE, ISSN 0899-1561
3. A Goswami, H M Kalita, Numerical Model for Simulating Two Dimensional Unsteady Flows in Irregular Flow Domain, *Iranian Journal of Science and Technology, Transactions of Civil Engineering*,
4. Naveen , B., Sahoo, S. , Samal, R. (2024). "Landslide Susceptibility Mapping for West-Jaintia Hills District, Meghalaya." *Sadhana*; 49, 52. <https://doi.org/10.1007/s12046-023-02404-9> (SCIE) Q2.
5. Badavath Naveen, Smrutirekha Sahoo; Remote Sensing and GIS-Based Accuracy Assessment of LULC Map and Landslide Susceptibility Prediction for Meghalaya, India. *Jour. Geol. Soc. India* 2024;; 100 (5): 622–638. doi: <https://pubs.geoscienceworld.org/jour-geosocindia/article-abstract/100/5/622/638722/Remote-Sensing-and-GIS->

b. Book chapters:

Year 2023:

1. Dr. Susmita Sharma "Baruah,P., Sharma, S., Calculation of Strength Gain by Carbonate Precipitation in Crushed Granite Fines of Meghalaya, [International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering](#), Lecture Notes in Civil Engineering (LNCE,volume 370), Sustainable Earth and Beyond, 2023, Springer"
2. Dr. Ganesh Chandra Dhal "Centralized Approach for The Agricultural Waste-Based Industry", Springer Nature 2023. Page: 377-405, ISBN: 978-981-99-4472-9"
3. Dr. Ganesh Chandra Dhal "Global Status of Agricultural Waste-Based Industries, Challenges and Future Prospects Springer Nature 2023. Page 21-45, ISBN:978-981-99-4472-9."

Year 2024:

1. Dr. Smrutirekha Sahoo "Samal, R. and Sahoo, S. (2024). Seismic stability analysis of a small scaled hill slope reinforced with geogrid. In: Sethi S., Mahamad M., Sethi R. and Pradhan S. K. (eds.) Industry 4.0 with Modern Technology (1st Edition, February 2024, 310 pages), Taylor & Francis Ltd, CRC Press. ISBN 9781032586472.
2. Dr. Ganesh Chandra Dhal "Assessment Of Source Effects and Action Plan Or Controlling Air Pollution In Non-Attainment Areas Of Ribhoi District, Meghalaya: A Traffic Survey Report Has Been Accepted By Springer, 2024"

c. Conferences:**Year 2023:**

1. Dr. Hriday Mani Kalita "Goswami A, Kalita HM (2023) Appropriate Modelling for Dam break flow Simulation. International Conference on Recent Advances in Fluid Mechanics and Nanoelectronics (ICRAFMN-2023), 12th-14th July 2023, MIT Bengaluru, India 2. Goswami A, Kalita HM (2023) Two Dimensional Depth Averaged Boundary Fitted Numerical Model for Open Channel Flow Simulation. 28th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (HYDRO-2023), 21st-23rd December 2023, NIT Warangal, India, 3. Pratit Sunder Dev Roy, Koushik Das, Hriday Mani Kalita, Performance Enhancement of Cylindrical Heat Pipe using Tapered Wick, 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference – IHMTC 2023, December 12-13, 2023, IIT Patna"
2. Dr. Smrutirekha Sahoo "Sahoo, S., and Naveen, B. (2023). "Seismic Response of a Buried Pipeline in Sandy Soil Layer: Numerical Approach". 10th European Conference on Numerical Methods in Geotechnical Engineering, Imperial College London, 26 - 28 June."
3. Dr. Smrutirekha Sahoo "Gidon, J. Sharailin and Sahoo, Smrutirekha (2023). "Numerical Analysis of Soil Slope Subjected to Rainfall Infiltration". 11th International Conference On Recent Challenges In Engineering And Technology (ICRCET-2023), Jakarta, Indonesia, 16th & 17th June."
4. Dr. Smrutirekha Sahoo "Samal, Rasmiranjan, Naveen, Badavath and Sahoo, Smrutirekha (2023). " Seismic stability study of a bamboo grid reinforced sloping ground ". International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE-2023), Malaviya National Institute of Technology, Jaipur, INDIA, 11 -12 AUGUST 2023."
5. Dr. Smrutirekha Sahoo "J Sharailin Gidon and Smrutirekha Sahoo (2023). "Detailed site investigation and installation of real time monitoring system for studying Landslides at a local scale". Indian Geotechnical Conference, Delhi, India, December 14-16."
6. Dr. Smrutirekha Sahoo "Naveen, Badavath, Sahoo, Smrutirekha (2023). "Mapping Landslide Susceptibility for Sustainable Development: A Case Study of Meghalaya's Southwest Khasi Hills". Indian Geotechnical Conference, Delhi, India, December 14-16."
7. Dr. Smrutirekha Sahoo "Samal, Rasmiranjan and Sahoo, Smrutirekha (2023). "Internal Stability Analysis of Bamboo Grid Reinforced Slopes Subjected to Seismic Loading based on Non-linear Time History Analysis". Indian Geotechnical Conference, Delhi, India, December 14-16."
8. Dr. Susmita Sharma "Manju, A., Baruah, P., Sharma, S., "The potential of low-cost absorbent for treatment of Potassium-contaminated water: an attempt to use a waste-to-resource concept" International Conference on Environmental Sustainability and Climate Change 21st to 22nd Dec 2023, NIT Meghalaya."
9. Dr. Susmita Sharma "Singhania K., Darnei L., Kharwanlang B., Baruah P. and Sharma S., "Use of Bentonite and Natural Fiber in Soil Stabilization", International Conference on Environmental Sustainability and Climate Change, 21st to 22nd Dec 2023, NIT Meghalaya."
10. Dr. Ganesh Chandra Dhal "ENVIRONMENTAL SUSTAINABILITY THROUGH COAL MINE WASTE VALORIZATION USING BIOMASS ACID SLUDGE: A LIFE CYCLE ASSESSMENT- 4th International Conference on Waste Management, RECYCLE 2023- 18 -19th May 2023"
11. Dr. Ganesh Chandra Dhal "Assessment of solid waste management practices in Shillong, Meghalaya- International Conference on Environmental Sustainability and Climate Change 2023 (ICESCC 2023)- 21 -22 December 2023"
12. Dr. Ganesh Chandra Dhal "Assessment of source effects and action plan for controlling air pollution in non-attainment areas of Ribhoi District, Meghalaya- A Traffic Survey Report. IICAQM 2023, Dec 4-6, 2023"
13. Dr. Ganesh Chandra Dhal "CALINE4 and AERMOD modeling for roadway vehicle-related air pollution: A Recent Review, International Conference on Environmental Sustainability and Climate Change 2023 (ICESCC 2023)- 21 -22 December, 2023"
14. Dr. Needhi Kotoky "Assessment of solid waste management practices in Shillong, Meghalaya- International Conference on Environmental Sustainability and Climate Change 2023 (ICESCC 2023)- 21 -22 December, 2023"

Year 2024:

1. Dr. Hriday Mani Kalita "Goswami A, Kalita HM (2024) A Semi Coupled Numerical Model for 1D Morphodynamic Flow Simulation. International Water Conference for Sustainable Development Goals (IWCSGD-2024), 22nd - 23rd March 2024, NIT Bhopal, India, 2. Pratit Sunder Dev Roy, Koushik Das, Hriday Mani Kalita, Performance

analysis of a cylindrical heat pipe with corrugated wick, The 2nd International Conference on Fluid, Thermal and Energy Systems”

2. Dr. Susmita Sharma “Sharma, S., Baruah, P., Gurung, S., Kumar, A., Sanadhya, A., Gopal, P., “Experimental study on Characteristics and Behaviour of Local Soils reinforced by recycled plastic fibre strips” International Conference on

“Natural Disaster: Risk Analysis, Management and Mitigation 23rd -24th March, 2024, NIT Silchar.”

3. Dr. Susmita Sharma “Baruah, P., Sharma, S., “Experimental study of Enzyme induced calcite precipitation on soil” International Conference on Geomatics in Civil Engineering 11th -12th March, 2024, IIT Roorkee.”

6. PATENTS

Year 2024:

1. Dr. Pradeep Kumar Gautam “A. Jain, T.K. Rasikbhai, P.K. Gautam, V. Agrawal, R. Gupta, SOLAR POWERED PORTABLE SMALL STONE CRUSHING MACHINE, 156572, 2024.”

7. CONFERENCE/ WORKSHOP/ SEMINAR ORGANIZED:

Year 2023:

1. Dr. Ganesh Chandra Dhal and Dr. Smrutirekha Sahoo coordinated for the conference, “International Conference on Environmental Sustainability and Climate Change 2023 (ICESCC 2023), organized by the Department of Civil Engineering, at NIT Meghalaya, Shillong held from 21/12/2023 to 22/12/2023”. SERB, Government of India, proudly sponsored the conference.”

2. Dr. Pradeep Kumar Gautam coordinated for “Short term

course on “RECENT ADVANCES IN CIVIL INFRASTRUCTURE DESIGN AND CONSTRUCTION” held during August (7-11), 2023”

Year 2024:

1. Dr. Rubi Chakraborty “Convener of One Week Short Term Course On Automated Computer Aided Design (CAD) and Computer Numerical Control (CNC) at National Institute of Technology Meghalaya in association with NIELIT, Shillong (June 03-07, 2024)”

8. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED BY FACULTY MEMBERS:

Year 2023:

1. Dr. Smrutirekha Sahoo “Participated in the Workshop on “Geosynthetics for Sustainable Civil Infrastructure” at School of Infrastructure, Indian Institute of Technology Bhubaneswar from 16-17 June 2023.”
2. Dr. Smrutirekha Sahoo “Attended the 10th European Conference on Numerical Methods in Geotechnical Engineering (NUMGE 2023) in London on 26th – 28th June 2023.”
3. Dr. Smrutirekha Sahoo “Participated and chaired a technical session at the International seminar on “Recent advancement in Geographical studies: A multidimensional outlook” on September 1-2, 2023 at Rampurhat College, West Bengal India.”
4. Dr. Ganesh Chandra Dhal “8th Indian International Conference of Air Quality Management (IICAQM 2023):

Measurement, Modelling, Health Risk and Public Policy” during 4th - 6th December 2023 at IISc Bangalore.”

5. Dr. Ganesh Chandra Dhal “1st INDIAN INTERNATIONAL CONFERENCE ON WATER QUALITY MANAGEMENT IICWQM-2023 during 6th - 8th December 2023 at IISc Bangalore.”
6. Dr. Rubi Chakraborty “8th Indian International Conference of Air Quality Management (IICAQM 2023): Measurement, Modelling, Health Risk and Public Policy” during 4th - 6th December 2023 at IISc Bangalore.”
7. Dr. Rubi Chakraborty “1st INDIAN INTERNATIONAL CONFERENCE ON WATER QUALITY MANAGEMENT IICWQM-2023 during 6th - 8th December 2023 at IISc Bangalore.”
8. Dr. Rubi Chakraborty “Workshop on: Earthquakes and other Ground Movements: Hazard Assessment, Mitigation

and Management, June 16-17, 2023, at the Lemon Tree Premier Hotel, New Town, Kolkata, organized by the ISMAA-Kolkata Chapter.”

Year 2024:

1. Dr. M. Longshithung Patton “Steel Construction Summit, 16-17 April 2024, Mumbai”
2. Dr. Hriday Mani Kalita “2 days workshop on, “Space technology application in disaster risk management”, NESAC, Umiam, Meghalaya on 27/05/2024-28/05/2024”
3. Dr. Ganesh Chandra Dhal “Circular Economy Integration: Optimizing Solid Waste Management in Meghalaya, India” at the Solid Waste and Circular Economy Conclave for the

States of India's Northeast, organized by the Centre of Science and Environment, SE, AAETI, Rajasthan, from 3rd to 5th April 2024.”

4. Dr. Ganesh Chandra Dhal “A 15 days Training Programme on “Fundamentals of Remote Sensing and GIS” at NESAC from 22nd January 2024 to 02nd February 2024.”
5. Dr. Needhi Kotoky “A 15 days Training Programme on “Fundamentals of Remote Sensing and GIS” at NESAC from 22nd January 2024 to 02nd February 2024.”
6. Dr. Rubi Chakraborty “Geodata Processing using Python, January 15-19, 2024, Organised by Indian Institute of Remote Sensing, Indian Space Research Organisation, Department of Space, Govt. of India Dehradun.”

9. INVITED TALKS DELIVERED:

Name of the Faculty	Year	Period (DD/MM/YYY)	Details of the Talk delivered	National / International	Location
Dr. S. Sahoo	2024	April 22 to 27 2024	Delivered a talk on “Real Time-Monitoring of rainfall-Induced Slope Instability: A case study” on 25-04-2024 via online mode in the One-Week online Faculty Development Program (FDP) on ‘Emerging Trends in Geotechnical Engineering’ during 22nd to 27th of April, 2024 organized by Department of Civil Engineering, Vardhaman College of Engineering, Hyderabad.	National	Hyderabad, Telengana India
Dr.S Sharma	2023	May 26 2023	Delivered the Talk on the Topic “ Environmental Geotechnics (TC215)” under International Society for Soil Mechanics and Geotechnical Engineering under Interactive Technical Talk Episode 4, aired on 26th May 2023.	National	
Dr.S Sharma	2024	March 16 2024	Delivered the Talk on the Topic “Relooking Anthropogenic Sediment under the UN Sustainable Development Goal 6.2” on 14th March in the 1st International Conference on Advances in Environmental Sustainability, Energy and Earth Sciences [AESEE-2024], 14th -16th March 2024, Organised by Department Of Environmental Science And Engineering, SRM University - AP, Andhra Pradesh, India	International	Andhra Pradesh India
Dr G. C Dhal	2024	april 3 rd to 5th, 2024	Invited Speaker titled “Circular Economy Integration: Optimizing Solid Waste Management in Meghalaya, India” at the Solid Waste and Circular Economy Conclave for the States of India's Northeast, organized by the Centre of Science and Environment, SE, AAETI, Rajasthan, from 3rd to 5th April 2024. 2) Keynote Speaker on “Swachhta Pakhwada 2024” program on 9/02/2024, focusing on Solid Waste Management, emphasizing Municipal Solid Waste Management, organized by NESAC, Space Department, Government of India.	National	Rajasthan, India
Dr. P.K. Gautam	2023	October 10, 2023	Invited Talk on “ Advance material testing for hot mix asphalt” at NIT Jaipur (online mode) on 10.10.2023	National	Jaipur, India
Dr. R. Chakraborty	2024	March 18 th to 20 th 2024	Invited talk on “Ground Truth: Unveiling Probabilities for Enhanced Slope Stability Assessment” in International Congress And Expo On Infrastructure And Construction (Barcelona Spain, March 18-20, 2024).	International	Barcelona Spain

10. PROJECTS:

a. Sponsored Project:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Gainful Utilization of Overburden Mining Waste Generated During Limestone Mining in Meghalaya Region as Flexible Pavement Material	Dr. P.K. Gautam	SERB	38,25,800	3 years	On going
2,	Investigating Self-Healing Capability And Performance of HMAMixes Containing Steel Slag As Aggregates.	Dr. P.K. Gautam	SERB	4162400	3 years	On going
3	Structural integrity assessment considering residual/reactive stresses due to different welding configurations for high strength steel.	D. Podder	NMRL, DRDO	1,000,000	18 months	On going
4	LIFE AND SERVICEABILITY ESTIMATION OF STEEL BRIDGES	D. Podder	BRO	27,00000	-	On going

b. Consultancy:

Sl no	Title of the project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount
1	Consultancy services (Structural assessment) on the lawmusiang market for Jaintia Hills District Autonomous District Council 2.(JHADC) Jowai, funded by Ministry of DONER, GOI	Dr. C Marthong	Ministry of DONER, GOI	-
2	Consultancy service for Design/checking of proposed building of Smt. Madreena Ho Mukhim at Lower New Colony, Laitumkhrah, Shillong	Dr. C Marthong	-	-
3	Vetting of structural design drawings of proposed building of KJP Synod Pdeng at Umphyrnai Dymmiew, Shillong	Dr. C Marthong	-	-
4	Testing of cement concrete cubes for construction of Technology Park	Dr. C Marthong	-	-
5	Vetting of DPR for "Redevelopment of Nohkalikai Falls (View point) Meghalaya", Directorate of Tourism, Govt. of Meghalaya	Dr. C Marthong	Directorate of Tourism, Govt. of Meghalaya	-
6	Vetting of structural design drawings of proposed residential building for Smt. Davinia Kaycee Massar & Miss Adella Florette Massar at Lama Villa, Shillong"	Dr. C Marthong	-	-
7	. Vetting of structural design drawings of the proposed G+5 building at Bishnupur, Laban Shillong for Shri. Shanbor Shullai"	Dr. C Marthong	-	-
8	Material testing and mix design of the work construction of Eklavya Model Residential School (EMRS) Gasuapara, Meghalaya"	Dr. C Marthong	-	-
9	Review & vetting of DPR under Meghalaya State Watershed Development Agency (A State level nodal agency), Govt. of Meghalaya	Dr. C Marthong	Govt. of Meghalaya	-
10	Consultancy fee in regards to conducting NDT on Revamping of Conventional Center at Orchid Lake Resort Umiam, Directorate of Tourism Dept. (Ref. No: MD-Tour 31/2022/41 Dt: 5th June 2023)	Dr. C Marthong	Directorate of Tourism Dept	-
11	Conducting design Mix M25 grade concrete required for RCC for location of Madan Kurkalang Meghalaya, Nipani Infra. Pvt. Ltd. (Ref: NIIP/2023-24/1101 Date: 14-06-2023)	Dr. C Marthong	-	-
12	Vetting of Architectural and Structural drawings of buildings items (Trep) of the proposed MLCU permanent campus at Umphyrnai, Martin Luther Christian University, Meghalaya (Ref. No: III/7/(2)/LD&C Umphyrnai/923/2021-8481 Dated: June 23,2023)	Dr. C Marthong	-	-
13	Conducting Design Mix for M30 & M25 concrete for Porel Dass Water & Treatment Control Pvt. Ltd, Porel Das water & effluent Control Pvt. Ltd. (Ref. No: PLD/STP-Shillong/001M Dated 24.07.2023)	Dr. C Marthong	-	-
14	Vetting of DPR "Development of Hotel Block at Nongmahir New site, Ri Bhoi District" Meghalaya, Directorate of Tourism Dept. (Ref. No.: M/D Tour 83/2022/34 dated 19th July 2023)	Dr. C Marthong	Directorate of Tourism Dept	-

SI no	Title of the project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount
15	Vetting of DPR for “Development of Mawrah Village” Meghalaya, Directorate of Tourism Dept. (M/D-Tour/MAL/203/2022/4 Dated 20th July 2023	Dr. C Marthong	Directorate of Tourism Dept	-
16	Vetting of the structural drawings & structural roof trusses of the project for construction of Multi-purpose Indoor Sports Hall at Lawsotun, Shillong. (Ref. No: SSCM/CE/TB-29/2022-23/43 Dated: 16th August 2023)	Dr. C Marthong	-	-
17	Mix design of the work construction of Eklavya Model Residential school (EMRS), Betasing, Meghalaya (No. MANIDCO/IDC/EMRS/MLY/2022-23/07 Date 31st August 2023)”	Dr. C Marthong	-	-
18	Vetting of steel frame system for the proposed roofing at the visitor’s plaza, and revised footing for the main entrance arch structures for State Zoo Umtrew, Meghalaya	Dr. C Marthong	-	-
19	Vetting of DPR (Under PM-Divine) for PHED projects (a) Williamnagar Water supply project Phase II @ Rs.120.00 Cr (b) Baghmara WSS Phase II @ Rs. 171.22 Cr (c) Infrastructure Development for Resubelpara Urban Water Supply Project @Rs. 350 Cr (No. CE/PHE/TB:57/2023-24/02 Dated the 6th September 2023)”	Dr. C Marthong	-	-
20	. Vetting of structural design/drawings of Apartment of mr. Dpnald Langstieh at Pynthorumkhrah, Shillong	Dr. C Marthong	-	-
21	Vetting of structural design for LS, Gos & UB Quarters of Meghalaya Police department	Dr. C Marthong	-	-
22	Mix design for PWD (Roads), EE, Jowai Central Division, Jowai	Dr. C Marthong	-	-
23	Vetting of DPR for PHED Dept. “New Shillong Water Supply Scheme”, PHED Shillong “	Dr. C Marthong	PHED Shillong	-
24	Geotechnical Investigation On Collected Soil Samples From Shillong, Meghalaya sponsored by The BCC Buildtech Pvt. Ltd. Sco 99, Sector-17, Huda, Jagadhri Distt., Yamunanagar at the cost of Rs.100000/-	Dr. S. Sahoo	The BCC Buildtech Pvt. Ltd. Sco 99, Sector-17, Huda, Jagadhri Distt., Yamunanagar	1,00,000
25	Review work for a view tower from M/S Tanor Engineering sponsored by M/S Tanor Engineering at the cost of Rs.70000/-	Dr. S. Sahoo	M/S Tanor Engineering	70,000
26	Conducting of soil tests to confirm the quality and type of soil for Construction of External Infrastructure work of Ph-II & III of IIM Shillong at the permanenet campus of IIM Shillong at Umsawli, Meghalaya sponsored by M/s SOM Project Pvt. Ltd. Under RITES at the cost of Rs.17128/-	Dr. S. Sahoo	IIM Shillong	17,128
27	Investigation of the structural design and drawings of CSR work for the proposed extension of Lew Mawngap (3.17 Lakhs)	Dr. D Podder	-	3,17,000
28	Design Mix of M25 & M30 Grade Concrete (Pave Infrastructure Pvt. Ltd., M/s Porel Dass Water and Effluent Control Pvt. Ltd., Rites Limited, 1.14 Lakhs).	Dr. D Podder	M/s Porel Dass Water and Effluent Control Pvt. Ltd., Rites Limited	1,14,000
29	Investigation of the structural design and drawings for the Construction of View Point at Ch. Km. 51+360 (LHS) (NH40) in the State of Meghalaya (M/S Tanor Engineering, 70k).	Dr. D Podder	M/S Tanor Engineering	70,000

11. AWARDS WON/ RECOGNITION RECEIVED AT THE NATIONAL AND INTERNATIONAL LEVEL:

1. Dr. Smrutirekha Sahoo “Listed as one of the top 75 Indian women leaders in the field of Geotechnical Engineering by the SC 15 committee (IGS Women Forum) of the Indian Geotechnical Society. My personal and professional journey till date are included in a book titled “Daughters of Indian Soil”, to recognize 75 women leaders of Indian origin in Geotechnical Engineering, in line with the 75th year celebrations of IGS published during IGC 2023 (14-16 Dec 2023) at IIT Roorkee”

2. Dr. Susmita Sharma “Included amongst the 75 Influential Indian Women in Geotechnical Engineering in the Book ““Daughters of Indian Soil.” which is a literary celebration highlights remarkable women in Geotechnical Engineering, Published during 14th -16th Dec 2023, by Indian Geotechnical Society, at IIT Roorkee”

12. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. C. Marthong	CVO	On going
2	Dr. M.L Patton	Associate Dean (P&D)	On going
3	Dr.H.M. Kalita	HOD of CE	On going
4	Dr.S. Sahoo	Faculty-in-Charge of Music-Club under Student Activity Center, NIT Meghalaya	On going
5	Dr.S. Sharma	Vice President, Culutral	On going
6	Dr. D Podder	1) Faculty-in-Charge of Photography and Fine Arts Club under Student Activity Center, NIT Meghalaya	On going
		2) Convenor of Time Table Committee	On going
		3) Hostel Warden of Lapalang V	Upto 30/06/2023
7	Dr. G.C Dhal	1. Warden at Lapalang V Hostel NIT Meghalaya	On going
		2. Worked as FIC in the plantation, landscaping, and beautification activities at NITM Sohra campus from December 15, 2023,	On going
		3. Co-Faculty in Charge, Indore Sports Club Since	On going
8	Dr. R Chakraborty	1) Faculty in Charge of Civil Engineering Society (CES) of NIT Meghalaya & 2) Departmental NBA Coordinator	On going

13. MEMBERSHIP OF PROFESSIONAL BODIES:

Sl. No.	Name of Faculty	Member of
1	Dr..Smrutirekha Sahoo	Affiliate Member, American Society of Civil Engineers (ASCE): ID: 12377792 for 15th March, 2023 to 31st December, 2024
2	Dr. S. Sharma	1.IGS I Indian Geotechnical Society Life Member
		2. International Society for ISSMGE Member for Year 2022-2025
3	Dr. Debabrata Podder	Associate Member (ID: AM186488-5), The Institute of Engineers (India).
4	Dr. GC Dhal	1) Member, Asia-Pacific Chemical, Biological & Environmental Engineering Society (Member NO: 201514)
		2) Life Associate Member, Indian Public Health Engineers, India (LAM-785)
		3) Life Associate Member, Indian Institute of Chemical Engineers (IICHE) Membership (I.D. LAM-62288).
		4) Life membership in the Indian Meteorological Society. (LM-3579)
6	Dr. N Kotoky	Life Associate Member, Indian Public Health Engineers, India (LAM-785)
7	Dr. R Chakraborty	Life Associate Member, Indian Institute of Chemical Engineers (IICHE) Membership (I.D. LAM-62288).
		4) Life membership in the Indian Meteorological Society. (LM-3579)

14. ANY OTHER NOTABLE INFORMATION:

1. Dr. G.C Dhal as manager, led NIT Meghalaya to the runners-up position in football and 2nd place in the 66kg weightlifting category at the 2023 inter-NIT tournament in NIT Durgapur.”

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

The Department of CSE at NITM has adequate facilities to support each activities needed for a batch of 30 students (per semester). It has a well-qualified and experienced faculty team consisting of 9 faculty members. The Computer Science & Engineering department makes all efforts in imparting high quality education to its motivated students. One of the aims of this department is

to play its role of producing Computer Engineers ready to satisfy the needs of the Computer and IT world. The Department is also actively involved in various research activities.

2. PROGRAMMES OFFERED:

The Department of Computer Science & Engineering offers the B.Tech programme, the full-time M.Tech. programme and the Ph.D. programme (full-time and part-time).

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance
Prof. Diptendu Sinha Roy	Associate Professor	Ph.D.	Distributed, Grid and Cloud Computing	01-07-2016	4- Full time 8- Part time
Dr. Akhilendra Pratap Singh	Assistant Professor	Ph.D.	Service Oriented Network Architecture, Wireless Sensor Network, BlockChain Technology	03-09-2013	2- Full time 5- Part time
Dr.Surmila Thokchom	Assistant Professor	Ph.D.	Cloud Computing, cryptography	26-09-2012	2- Full time 3- Part time
Dr.Deepak Kumar	Assistant Professor	Ph.D.	Computational Arithmetic, Machine Learning	20-12-2012	2- Full time 4- Part time
Dr. Soumen Moulik	Assistant Professor	Ph.D.	Wireless Body Area Networks, Wireless Sensor Networks, Internet of Things	15-12-2017	2- Full time 1- Part time
Dr. Bunil Kumar Balabantaray	Assistant Professor	Ph.D.	Computer Vision, Biomedical Image Processing	14-12-2017	6- Full time 5- Part time
Dr. Ningthoujam Johny Singh	Assistant Professor	Ph.D.	Computer Vision, Machine Learning, Deep Learning,	29-12-2023	Nil
Dr.Yogita	Assistant Professor	Ph.D.	Data Mining	08-01-2018	2- Full time 2- Part time

4. LIST OF PUBLICATIONS:

1) Journals:

1. V Tiwari, C Pandey, A Dahal, DS Roy, U Fiore, A Knapsack-based Metaheuristic for Edge Server Placement in 5G networks with heterogeneous edge capacities, *Future Generation Computer Systems*, 153, 222-233, 2024
2. V Tiwari, C Pandey, D Sinha Roy, A forecasting-based approach for optimal deployment of edge servers in 5G networks, *Cluster Computing*, , Jan-19, 2024
3. NN Devi, S Thokchom, G Srivastava, RH Jhaveri, DS Roy, decentralized multi-criteria ranked prosumers energy trading using distributed ledger technology, *Peer-to-Peer Networking and Applications*, 17.1, 549-565, 2024
4. CY Chang, YL Liang, SJ Wu, DS Roy, a text-to-SQL transformation mechanism based on BERT models for slot filling, value extraction, and verification, *Multimedia Systems*, 30.1, Jan-17, 2024
5. CY Chang, AS Santra, IH Chang, SJ Wu, DS Roy, Q Zhang, Design and implementation of a real-time face recognition system based on artificial intelligence techniques, *Multimedia Systems*, 30.2, , 2024

6. CY Chang, SJ Jhang, SJ Wu, DS Roy, Joint coarse-and fine-grained similarity comparison for plagiarism detection based on NLP, *The Journal of Supercomputing*, 80.1, 363-394, 2024
7. KHK Reddy, RS Goswami, DS Roy, A deep learning-based smart service model for context-aware intelligent transportation system, *The Journal of Supercomputing*, 80.4, 4477-4499, 2024
8. Anil Kumar Swain, Aleena Swetapadma, Jitendra Kumar Rout, Bunil Kumar Balabantaray, Classification of non-small cell lung cancer types using sparse deep neural network features, *Biomedical Signal Processing and Control*, 87, 105485, 2024
9. Pallabi Sharma, Deepak Ranjan Nayak, Bunil Kumar Balabantaray, M Tanveer, Rajashree Nayak, A survey on cancer detection via convolutional neural networks: Current challenges and future directions., *Neural Networks*, 169, 637-659, 2024
10. NN Devi, S Thokchom, G Srivastava, RH Jhaveri, DS Roy, Demcrp-et: decentralized multi-criteria ranked prosumers energy trading using distributed ledger technology, *Peer-to-Peer Networking and Applications*, 17 (1), 549-565, 2024
11. NG Ambekar, NN Devi, S Thokchom, TabLSTMNet: enhancing android malware classification through integrated attention and explainable AI, *Microsystem Technologies*, , Jan-19, 2024
12. Yadav, Dharendra Prasad, Deepak Kumar, Anand Singh Jalal, Bhisham Sharma, Julian L. Webber, and Abolfazl Mehbodniya, Advancing Hyperspectral Image Analysis with CTNet: An Approach with the Fusion of Spatial and Spectral Features, *Sensors*, 24(6), 2024
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26. Z Hu, CY Chang, R Shen, CH Kuo, DS Roy, A Recharging Mechanism for Improving Data Quality and Maintaining Sustainable Lifetime in WRSNs, *IEEE SensorsJournal*, , 2023
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50. NR Pradhan, R Mahule, PK Wamuyu, PK Rathore, AP Singh, A blockchain and AI based vaccination tracking framework for coronavirus (COVID-19) epidemics, *IETE Journal of Research*, 69 (11), , 7803-7815, 2023

5. CONFERENCE /WORKSHOP/SEMINAR ORGANIZED:

Sl. No.	Name of Faculty	Name of the Program	Duration
1	Dr. Bunil Kumar Balabantaray, Publicity Chair	IEEE International Conference on Information Technology, held at NIT Raipur	12-14 December 2023
2.	Dr. Deepak Kumar	IEEE International Conference on Networks, Multimedia, and Information Technology (NMITCON-2024)	1 -2 Spetember 2023

6. SPONSORED PROJECTS:

Sl No.	Title of the Project	Investigators (PI/Co.-PI)	Funding Agency	Funding Amount	Duration	Status
1	Deep Learning Approach for Preservation of Cultural Heritage	P.I., Dr. Bunil Kumar Balabantaray	SERB, Department of Science and Technology (DST), Government of India	23L	3 years	ongoing
2	GAN based Medical Image Dataset Synthesis for disease prediction	P.I., Dr. Bunil Kumar Balabantaray	NVIDIA (India)	10L	2 years	ongoing

7. CONSULTANCY PROJECTS:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount (INR)	Duration	Status
1	An artificial intelligence approach to solve waste management challenges	Dr. Bunil Kumar Balabantaray	Ficha, France	80 Lakhs	September 2022 to 31.03.2024	Ongoing. The project funding is dynamic i.e., it depends on the number of AI engineers working. 2022-2025

8. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl.No.	Name of Faculty	Responsibilities	Duration
1	Dr. Deepak Kumar	Chairman, Standing Condemnation/Disposal Committee	30/01/2024 to till date
2	Dr. Bunil Kumar Balabantaray	All regulation related to PG and Research Student	04-11-2022 to till date
3	Dr. Bunil Kumar Balabantaray	Vice President (Technical), SAC, All technical events under student activity center	01-07-2022 to till date
4	Dr. Bunil Kumar Balabantaray	CCMT/CCMN/Institute Level admission related works	21-04-2022 to till date
5	Dr. Deepak Kumar	Member , DRC	16-01-2023 to till date
6	Dr. Deepak Kumar	Liaison Officer for OBC	15-01-2022 to till date
7	Dr. Deepak Kumar	Chairman, Website Maintenance Committee	06-06-2024 to till date

9. MEMBERSHIP OF PROFESSIONAL BODIES:

Sl.No.	Name of Faculty	Member of
1	Dr. Diptendu Sinha Roy	Senior Member (IEEE), CSI (Life Member), ISTE (Life Member), Member ACM
2	Dr. Deepak Kumar	IEEE
3	Dr. Akhilendra Pratap Singh	CSI(LifeMember), ISTE(LifeMember), IEEE
4	Dr.Yogita	Senior Member IEEE
5	Dr. Soumen Moulik	IEEE
6	Dr. Bunil Kumar Balabantaray	ISTE(LM),SoftComputingResearchSociety,India.,Associate Member (UACEE), Institute of Research Engineers and Doctors,(Membership No:AM10100057923), Member: IEEE and IEEE EMBS Society Member , IEEE CS
7	Dr. Surmila Thokchom	ACM, IEEE

10. ANY OTHER NOTABLE INFORMATION:

Dr. Bunil Kumar Balabantaray acted as Chairman, Technical Expert Committee For Setting Up Cyber Forensics Lab, CERTIn, MEITY, Govt. Of India.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

The Department of Electrical Engineering started since the inception of NIT Meghalaya. Presently the department offers B.Tech, M.Tech and PhD program. The B. Tech program started in 2010 with an intake of 30 students and since 2014 onward M.Tech program has been started with an intake of 20 students offering specialization in Power & Energy Systems. Presently there are full time and part time research scholars, registered for PhD program.

The Department aims to impart high quality education to the students and carry out fundamental and industry-oriented research work. The research interest of faculties encompasses various areas of electrical engineering such as Deregulated power system, Soft computing application in power system control, Voltage stability alleviation under Deregulated Environment, Power Electronics & Drives, Control System and Instrumentation, Mechatronics, Embedded System, Non-conventional Energy system, High Voltage Engineering etc.

The department have well-equipped laboratory facilities to the students such as Electro Technique Lab, Electrical Machine Lab, Network and Systems lab, Digital Electronics Lab, Power System Simulation Lab, Control & Instrumentation Lab, Power Electronics & Drives Lab, Microprocessor Lab, Microcontroller & Embedded Systems Lab. Specialized simulation software's like Power Factory 14.1 (DIgSILENT), PSIM (Power Simulator), PSSE (Power System Simulator for Engineers) are available with the department to develop the computing efficiency of the students and also to carry out research activities.

2. PROGRAMMES OFFERED:

Currently, the department is offering

- B.Tech in EEE
- M.Tech in Power & Energy Systems (Full-Time as well as Sponsored Part-Time)
- Ph.D. in various Specializations (Full-Time as well as Part-Time)

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. Guiding (Ongoing)	Guided/ Thesis Submitted
Dr. S. Debbarma	Associate Professor	B.E, M.Tech, Ph.D	Power Systems	19 June 2012	04	--
Dr. P. P. Singh	Assistant Professor	B.Tech, M.Tech, Ph.D	Control Systems	31 May, 2016	04	01
Dr. Rakesh Roy	Assistant Professor	B.E, M.Tech, PhD	Power Electronics & Electric Machine Drives	03 January 2013	03	01
Dr. Shaik Affijulla	Associate Professor	B.Tech, M.Tech, Ph.D	Power Systems	03 January 2013	02	01
Dr. Ksh Milan Singh	Assistant Professor	B.Tech, M.Tech, PhD	Instrumentation and Signal Processing	24 May 2016	03	01
Dr. Gayadhar Panda	Professor	Ph.D	Power Electronics	29 January 2013	06	01

4. STAFF PROFILE:

Name	Designation	Qualification	Date of Joining	Nature of Job
Mr. Sushanta Nath	Technical Assistant	B.E (NIT Agartala) M.Tech (NIT Meghalaya)	13/08/2012	Regular
Mr. Bankitbok Laloo	Technical Assistant	Diploma	16/12/2021	Regular
Dr. Ankur Rai	Technical Assistant	Ph.D (NIT Nagaland)	22/12/2021	Regular
Mr. Felix Albert Nongneng	Technician	M.Tech (IIT Madras)	14/12/2021	Regular

Name	Designation	Qualification	Date of Joining	Nature of Job
Mr. Rishandonborlang Mawrie	Technician	B.Tech	16/12/2021	Regular
Mr. Nangskhem Khongwir	Technician	B.Tech	20/12/2021	Regular
Ms. Julene Seka H Thabah	Technician	M.Tech	13/12/2021	Regular
Mr. Vicky Staryson Wahlang	Lab Attendant	B.Tech	23/12/2021	Regular

5. LIST OF PUBLICATIONS:

A. Journals:

- Liza Debbarma, **Sanjoy Debbarma**, Kingshuk Roy, Siddhartha Deb Roy, **P. P. Singh**, "Joint Contribution of RTEM and AGC System for Frequency Stabilization in Renewable Energy Integrated Power System", *IET Energy Systems Integration*, February 2024
- Siddhartha Deb Roy, Ankush Sharma, Saikat Chakrabarti, **Sanjoy Debbarma**, "Securing Power System Data in Motion by Timestamped Digital Text Watermarking", *IEEE Transactions on Smart Grid*, February 2024
- Siddhartha Deb Roy, **Sanjoy Debbarma**, "Enhancing Cyber-Resilience of Power Systems' AGC Sensor Data by Time Series to Image Domain Encoding", *IEEE Transactions on Smart Grid*, January 2024
- P. C. Gupta, and **P. P. Singh**, Multistability, coexisting behaviours and control of fractional order dissipative small scale grid with disturbances and noise, *Pramana - J. Phys.*, vol. 97, DOI: 10.1140/epjs/s11734-023-00927-0
- Prakash Chandra Gupta, and **Piyush Pratap Singh**. "Chaos control of RESs integrated power system model using adaptive higher order PID SMC and comparison of different adaptive SMC techniques." *International Journal of Automation and Control*, vol. 18, no. 2, pp. 232-261, 2024.
- P. P. Singh**, M. Borah, A. Datta, S. Jafari and B. K. Roy, "Integer cum fractional ordered active-adaptive synchronization to control vasospasm in chaotic blood vessels to reduce risk of COVID-19 infections", *International Journal of Computer Mathematics*, DOI:10.1080/00207160.2022.2163167
- Gandhi, **Roy, R.**, Sankararao, E., Mishra, P. *et al.* A Novel Technique to Correct the Unwanted Zero Position Signal of Faulty Encoder for Accurate Speed and Position Estimation of PMSM Drive. *Iran J Sci Technol Trans Electr Eng* **48**, 289–301 (2024).
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- Chauhan, A., & Singh, K. M. (2024). Doppler Parameters Estimation Using Digital PLL Based on SWIFT & SWIFT Structures. *IETE Journal of Research*, 1–12. <https://doi.org/10.1080/03772063.2024.2306244>.
- Chauhan, A., **Singh, K.M.** Single and Multi-frequency Parameter Estimation by SWIFT-DPLL Through Optimized MOPSO Algorithm. *J. Vib. Eng. Technol.* **12**, 5985–5998 (2024).
- Gupta, P.C., **Singh, P.P.** Multistability, coexisting behaviours and control of fractional order dissipative small scale grid with disturbances and noise. *Eur. Phys. J. Spec. Top.* **232**, 2415–2436 (2023).
- S. Puppala, D. Potnuru and **P. P. Singh**, "Study of Multiple-Input Multiple-Output DC-DC Converter for DC Microgrid Applications", Trends in Electrical Engineering (TEE), vol. 13, no. 1, pp. 16-23, 2023.
- S. K. Prince, **S. Affijulla** and **G. Panda**, "Protection of DC Microgrids Based on Complex Power During Faults in On/Off-Grid Scenarios," in *IEEE Transactions on Industry Applications*, vol. 59, no. 1, pp. 244-254, Jan.-Feb. 2023, doi: 10.1109/TIA.2022.3206171.
- S. K. Dalai, K. P. Panda, Y. P. Siwakoti and **G. Panda**, "Three-Phase Switched-Capacitor Boost Self-Balanced Multilevel Inverter for Photovoltaic Applications," in *IEEE Transactions on Energy Conversion*, doi: 10.1109/TEC.2024.3367733.
- Prince Satyavart, Kumar Deepak, **G Panda**, **Shaik Affijulla**, (2023). Dominant/Lower Order Harmonic Injection Based Electric Fault Detection for DC Microgrids in Grid Coupled/Decoupled Scenarios. *IEEE Transactions on Industry Applications*. PP. 10.1109/TIA.2023.3332314.
- Sao, Jitendra Kumar, **Panda, Gayadhar**, Ray, Pravat Kumar, Patidar, Ram Dayal and Swain, Sushree Diptimayee. "Parameter optimization of PV integrated Shunt Active power filter with Taguchi SNR" *International Journal of Emerging Electric Power Systems*, vol. 24, no. 3, 2023, pp. 377-387. <https://doi.org/10.1515/ijeeps-2021-0427>.
- Shadangi, Pushpanjali & Swain, Sushree & Ray, Pravat & **Panda, Gayadhar** & Dalai, Sumant. (2023). Experimental validation of non-dual adaptive controller based DSTATCOM for power quality enhancement. *International Journal of Emerging Electric Power Systems*. 10.1515/ijeeps-2023-0138.

19. Devi, Nongmaithem & **Panda, Gayadhar** & Th, Surmila. (2023). Optimal ranking-based charging station selection for electric vehicles. **International Journal of Emerging Electric Power Systems**. 10.1515/ijeeps-2023-0124.
20. Choudhury, Anasuya Roy, Nayak, Pravati, Mallick, Ranjan Kumar, Agrawal, Ramachandra, Mishra, Sairam and **Panda, Gayadhar**. "Islanding detection and power quality disturbance classification in multi DG based microgrid using down sampling empirical mode decomposition and multilayer neural network" **International Journal of Emerging Electric Power Systems**, 2023. <https://doi.org/10.1515/ijeeps-2023-0135>.
21. Mishra, Sairam, Nayak, Pravati, Mallick, Ranjan Kumar, Gadanayak, Debadatta A. and **Panda, Gayadhar**. "PQ event identification in PV-wind based distribution network with variational mode decomposition and novel feature enabled random forest classifier" **International Journal of Emerging Electric Power Systems**, 2023. <https://doi.org/10.1515/ijeeps-2023-0123>.
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23. K. P. Panda, R. T. Naayagi, P. K. Ray and **G. Panda**, "Single-source Switched-capacitor Boost Nine-level Inverter with Reduced Components," in **CSEE Journal of Power and Energy Systems**, vol. 9, no. 5, pp. 1688-1697, September 2023, doi: 10.17775/CSEJEPES.2022.06520.
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25. Sahoo, Nirjharini, **Gayadhar Panda**, & B.D Subudhi. "A Fuzzy Logic approach to Shunt Active Power Filter and Hybrid Active Power Filter." **Journal of Power Technologies [Online]**, 103.4 (2023): 209--217. Web. 7 Jun. 2024.
26. Kumar, M.; Panda, K.P.; Naayagi, R.T.; Thakur, R.; **Panda, G.** Comprehensive Review of Electric Vehicle Technology and Its Impacts: Detailed Investigation of Charging Infrastructure, Power Management, and Control Techniques. **Appl. Sci.** **2023**, *13*, 8919.
27. Devi, Nongmaithem & Th, Surmila & Singh, Thoudam Doren & **Panda, Gayadhar** & Naayagi, Ramasamy. (2023). Multi-Stage Bargaining of Smart Grid Energy Trading Based on Cooperative Game Theory. **Energies**. 16. 4278. 10.3390/en16114278.
28. Acharya, Debasis, **Ankur Rai**, and Dushmanta Kumar Das. "Optimal rule based fuzzy-PI controller for core power control of nuclear reactor." **Annals of Nuclear Energy** 194 (2023): 110118.

B. Book chapters:

1. Gupta, P.C., **Singh, P.P.** (2023). Nonlinear Behaviour of Rotor Angle Dynamics in Three-Machine Infinite Bus Power System. In: **Panda, G.**, Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_14.
2. Puppala, S., Potnuru, D., **Singh, P.P.** (2023). Design of Solar PV System with Single-Input Multi-Output (SIMO) DC-DC Converter for Remote Area Applications. In: **Panda, G.**, Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_34.
3. Gupta, P.C., **Singh, P.P.** (2024). Chaos and Multistability in Fractional Order Power System: Dynamic Analysis and Implications. In: Shaw, R.N., Siano, P., Makhilef, S., Ghosh, A., Shimi, S.L. (eds) Innovations in Electrical and Electronic Engineering. ICEEE 2023. Lecture Notes in Electrical Engineering, vol 1109. Springer, Singapore. https://doi.org/10.1007/978-981-99-8289-9_4.
4. Rekha, P.S., Kumar, M., **Panda, G.**, Vijayakumar, T. (2023). Switched Reluctance Motor Drive Control for Electric Vehicle Application. In: Panda, G., Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_36.
5. Weslie, S.K.S., Saifuddin, M.R., **Panda, G.**, Naayagi, R.T. (2023). Microgrid in Grid-Tied and Islanded Mode: Asset Configuration and Operating Cost Optimization. In: Panda, G., Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_15.
6. Shadangi, P., Swain, S.D., Ray, P.K., **Panda, G.** (2023). PSO-Based DSTATCOM for Harmonic Compensation Under Different Load Perturbation. In: Panda, G., Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_40.
7. Rath, S.S., **Panda, G.**, Ray, P.K., Mohanty, A. (2023). Optimal Relay Coordination in Solar PV Integrated Power System Using Grey Wolf Optimization. In: Panda, G., Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and

- Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_53.
8. Sarangi, R.R., Ray, P.K., Barisal, A.K., Mohanty, A., **Panda, G.** (2023). Fault Current Limiter-Based Protection Scheme in a Standalone Photovoltaic Battery-Based Nanogrid. In: Panda, G., Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_52.
 9. Altahhan, M., Saha, N., Panda, S., **Panda, G.** (2023). A Design Analysis and Performance Comparison of Fuzzy PID Controller with Derivative Controller and Conventional PID Controller for AGC Multi-Area Interconnected System. In: Panda, G., Alhelou, H.H., Thakur, R. (eds) Sustainable Energy and Technological Advancements. ISSETA 2023. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-4175-9_47.
- ### C. Conferences:
1. **Sanjoy Debbarma**, Kingshuk Roy, Pravendra Pratap Singh and Sikandar Kumar, "Distributed Generation and RoCoF Relay Integrated Multi-Stage Under Frequency Load Shedding Scheme in Power Systems, **2023 11th National Power Electronics Conference (NPEC), IEEE Conference**, IIT Guwahati, 14-16 Dec 2023.
 2. Chakka Bapi Ayyappa Raju, **Sanjoy Debbarma**, Kingshuk Roy and Srinivasa Rao Rayapudi, "Controlling Voltage Sensitive Loads Using Smart Transformers for Frequency Regulation of a Power System, **2023 11th National Power Electronics Conference (NPEC), IEEE Conference**, IIT Guwahati, 14-16 Dec 2023
 3. D. K. Biswas, **S. Debbarma** and P. P. Singh, «Decentralized PID-Based Sliding Mode Load Frequency Control Scheme in Power Systems,» **2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)**, Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201634.
 4. L. Debbarma, **S. Debbarma**, K. Roy, S. D. Roy and P. P. Singh, "Integration of AGC and Real-Time Energy Market Model in Power Systems for Dynamic Performance Analysis," **2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)**, Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201557.
 5. K. Roy, **S. Debbarma**, S. D. Roy and L. Debbarma, "Regulation Mileage-based Generation Command Dispatch," **2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)**, Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201557.
 6. Roushan Kumar, Niraj Kumar, **Ankur Rai** and **Piyush Pratap Singh**, Level Control of Coupled Tank System using Fuzzy PI Feedforward Technique, NIT Meghalaya, India, 14-17 June, 2023.
 7. Shoaib Warjri, Atiarsing Surong, Michael Mihsallan Langstieh, Michelvert Marbianang, Shubhankar Majumdar and **Piyush Pratap Singh**, Radar Communication via Asymmetric and Wideband Chaotic Signal, NIT Meghalaya, India, 14-17 June, 2023.
 8. Dip Kumar Biswas, Sanjoy Debbarma and **Piyush Pratap Singh**, Decentralized PID-based Sliding Mode Load Frequency Control Scheme in Power Systems, NIT Meghalaya, India, 14-17 June, 2023.
 9. Liza Debbarma, **Sanjoy Debbarma**, Kingshuk Roy, Siddhartha Deb Roy and **Piyush Pratap Singh**, Integration of AGC and Real-Time Energy Market Model in Power Systems for Dynamic Performance Analysis, NIT Meghalaya, India, 14-17 June, 2023.
 10. A. Anand, R. Gandhi, D. Bhattacharya and **R. Roy**, "Dynamic Analysis of Vector Controlled PMSM with Constant Torque Angle Control Strategy Using Artificial Neural Network," 2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE), Shillong, India, 2023, pp. 1-5, doi: 10.1109/ICEPE57949.2023.10201640.
 11. **R. Roy**, K. K. Prabhakar and P. Kumar, "Equivalent Circuit for Inverter fed Induction Motor," 2023 3rd International Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET), Patna, India, 2023, pp. 01-06, doi: 10.1109/ICEFEET59656.2023.10452168.
 12. R. Mawrie, L. Swer, A. Chauhan and **K. M. Singh**, "Adaptive Noise Cancellation Technique in Signal Estimation using Particle Swarm Optimization," 2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE), Shillong, India, 2023, pp. 1-5, doi: 10.1109/ICEPE57949.2023.10201528.
 13. A. Chauhan, I. Jyrwa, S. Wahlang and **K. M. Singh**, "Ultrasonic Vibration Parameters Estimation using Fuzzy based PID Controller in Digital-PLL," 2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE), Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201501.
 14. P. Satyavarta, B. Seifeddine, **Shaik Affijulla**, **Panda, Gayadhar**, Robust Fault Detection and Characterization in AC Microgrids using Ensemble Empirical Mode Decomposition. 1-5. 10.1109/ISGTEUROPE56780.2023.10408238.
 15. P. V. Rajesh Varma and **Shaik Affijulla**, "Assessment of Reliability Indices under Generation and Peak Load Constrained Scenarios," 2023 IEEE 3rd International

- Conference on Sustainable Energy and Future Electric Transportation (SEFET)*, Bhubaneswar, India, 2023, pp. 1-6, doi: 10.1109/SeFeT57834.2023.10245377.
16. J. Bhattacharjee, N. N. Kujur, P. V. Rajesh Varma and **Shaik Affijulla**, "Fault Detection and Classification in Transmission Lines using Artificial Intelligence," *2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)*, Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201576.
 17. V. Wahlang and **Shaik Affijulla**, "Behaviour of Induced Currents in HVAC, EHVAC and UHVAC Lines During Short Circuits," *2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)*, Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201482.
 18. Baral, Jyoti & Panda, Kaibalya Prasad & **Panda, Gayadhar**. (2023). An Adaptive Variable LMS Technique for Enhanced Power Quality in Solar PV Grid-tied System. 1-6. 10.1109/PESGRE58662.2023.10405170.
 19. Panda, Kaibalya Prasad & Dalai, Sumant & **Panda, Gayadhar**. (2023). Step-up Switched-Capacitor Common-Grounded Seven-Level Inverter for Transformerless PV System. 1-6. 10.1109/PESGRE58662.2023.10404851.
 20. S. J. Pinto and **G. Panda**, "Cyber-Secured Distributed Control System for Reliable AC Microgrids," *2023 IEEE PES Innovative Smart Grid Technologies Europe (ISGT EUROPE)*, Grenoble, France, 2023, pp. 1-1, doi: 10.1109/ISGTEUROPE56780.2023.10407960.
 21. Dalai, Sumant & Prince, Satyavarta & Panda, Kaibalya Prasad & **Panda, Gayadhar**. (2023). High Performance Speed Control For Three-Phase Switched-Capacitor Multilevel Inverter Fed Induction Motor Drive. 1-6. 10.1109/SeFeT57834.2023.10245417.
 22. Bhoi, Ashok & Mallick, Ranjan & Nayak, Pravati & **Panda, Gayadhar** & Mishra, Sairam & Swain, Ajay. (2023). Harmonic Estimation of Modern Power System Using Improved Grey Wolf Optimization- Based Recursive Least Square Approach. 1-5. 10.1109/ICEPE57949.2023.10201635.
 23. Tripathi, Ankita & Biswal, Monalisa & **Panda, Gayadhar**. (2023). Harmonic Analysis of Renewables and Electric Vehicle Penetrated Distribution System. 1-6. 10.1109/ICEPE57949.2023.10201543.
 24. Sahoo, Satyabrata & Th, Surmila & Puhan, Praratap & **Panda, Gayadhar**. (2023). Power Quality Control and Comparison of a Micro Grid System Using Fuzzy MPPT Technique. 1-6. 10.1109/ICEPE57949.2023.10201624.
 25. S. Borgohain, T. H. Kazmi, R. Peesapati and **G. Panda**, "IoT based Solar Power Forecasting using AMA-ELM Technique," *2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)*, Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201641.
 26. P. K. Mohanty, **G. Panda**, M. Basu and D. S. Roy, "Interpreting Energy Utilisation with Shapley Additive Explanations by Defining a Synthetic Data Generator for Plausible Charging Sessions of Electric Vehicles," *2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)*, Shillong, India, 2023, pp. 1-7, doi: 10.1109/ICEPE57949.2023.10201554.
 27. C. J. Jena, P. K. Ray, S. Nandkeolyar and **G. Panda**, "Model Predictive Control of Islanded DC Microgrid with SOC-based Power Sharing," *2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE)*, Shillong, India, 2023, pp. 1-6, doi: 10.1109/ICEPE57949.2023.10201524.

7. CONFERENCE/ WORKSHOP/ SEMINAR ORGANIZED:

1. **Dr. Rakesh Roy**, Competition on innovative fleet oriented business models for E-Vehicles in Northeast India, 1 day on 04/12/2023.
2. **Dr. G. Panda, Dr. Shaik Affijulla**, 5th International Conference on Energy, Power and Environment, (ICEPE,2023), 15-17.06.2023
3. **Dr. G. Panda, and Dr. Shaik Affijulla**, 3rd International Symposium on Sustainable Energy and Technological Advancements (ISSETA 2024)
4. **Dr. G. Panda, and Dr. Shaik Affijulla**, Workshop on Advanced Control, Communication and Protection of Sustainable Power and Energy Systems, ACPSPES 2023, June 26th – 30th 2023.
5. **Dr. G. Panda, Dr. Shaik Affijulla**, STC on Microgrid Protection and Control, National Institute of Technical Teachers Training and Research, Chandigarh, 17-21.04.2023.
6. **Dr. G. Panda**, Course (STC) on Advanced Control, and Machine Learning Approaches for Smart Distribution, 03rd – 07th February 2024.



Fig 1: 3rd International Symposium on Sustainable Energy and Technological Advancements during 24th – 25th February 2023.



Fig 2: 5th International Conference on Energy, Power and Environment during 15– 17 June 2023.

8. CONFERENCES / WORKSHOPS / SEMINARS / TRAINING ATTENDED BY FACULTY MEMBERS:

Sl. No.	Name of Faculty	Name of the Programme Attended
1	Dr. S. Affijulla	HRD training program on Synchro Phasors Application and PMU data Analysis, North Eastern Regional Load Despatch Centre, Shillong, 01-02-12.2023.
2	Dr. G. Panda	IEEE PES ISGT EUROPE 2023 conference (Grenoble, France), 21 September 2023
3	Dr. Ksh Milan Singh	5th IEEE International Conference on Energy, Power and Environment (ICEPE), during 14-17 June, 2023, Organised by Department of Electrical Engineering, NIT Meghalaya, Shillong, India.
4	Dr. P. P. Singh	5th IEEE International Conference on Energy, Power and Environment (ICEPE), during 14-17 June, 2023, Organised by Department of Electrical Engineering, NIT Meghalaya, Shillong, India. 3rd International Symposium on Sustainable Energy and Technological Advancements (ISSETA 2024), during 23-24 February 2024, organised by Department of Electrical Engineering, NIT Meghalaya, Shillong, India.
5	Dr. S. Debbarma	5th IEEE International Conference on Energy, Power and Environment (ICEPE), during 14-17 June, 2023, Organised by Department of Electrical Engineering, NIT Meghalaya, Shillong, India. 3rd International Symposium on Sustainable Energy and Technological Advancements (ISSETA 2024), during 23-24 February 2024, organised by Department of Electrical Engineering, NIT Meghalaya, Shillong, India
6	Dr. R. Roy	3rd International Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET-2023), Patna, India.

9. INVITED TALKS DELIVERED:

Dr. S. Debbarma:

- Delivered Talk on “**Application of Data Analytics in Power System**”, HRD Training Program on 01-02, December 2022 at NERLDC, POSOCO, Shillong.
- Delivered an Talk on “**Smart Grid: Transformation of Electric Utility**”, One week faculty development program on Recent Advances in Cyber Physical Power System and Smart Grids, 8-13 May 2023, Anurag University, Hyderabad.
- Delivered a Talk on “**Transactive Energy System**”, Short-Term Course (STC) On “Microgrid Protection and Control, 17-21, April 2023, Organizer: NIT Meghalaya & NITTR Chandigarh.

Dr. Shaik Affijulla:

- Delivered Talk on “**Fundamentals of Phasor Measurement Units**”, HRD Training Program on 01-02, December 2023 at NERLDC, POSOCO, Shillong.

Dr. G. Panda

- Delivered Talk on “**E-Mobility with Green Energy Technology**”, webinar organized by IEEE PES Singapore Chapter, on 7 nov-2023.

Dr. P. P. Singh:

- Delivered Talk on “**Chaos, multistability and coexisting behaviors in small scale grid**” Five Days Short-Term Course (STC) on “*Microgrid Protection and Control*” organized by National Institute of Technical Teachers’ Training and Research (NITTTR), Chandigarh in collaboration with NIT Meghalaya, during April 17-21, **2023**.

10. SPONSORED PROJECTS

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Design and development of Multilevel Inverter based Distributed Power Flow Controller (DPFC) FACTS for a grid integrated system with renewable energy sources	Atanu Banerjee	CPRI, Govt. of India	34 lakh	2 years	Ongoing

11. AWARDS WON/ RECOGNITION RECEIVED AT THE NATIONAL AND INTERNATIONAL LEVEL:

1. K. M. Singh, Best paper, ICEPE 2023, NIT Meghalaya, India, June 15-17, 2023.
2. K. M. Singh, Third price (Bronze medal) in Table tennis in the during, Inter NIT Sports Meet at Bhopal, 21st to 23 rd Dec 2023.
3. K. M. Singh, Expert talk in FDP NIT Meghalaya.

12. PATENTS:

SI	Inventors	Patent Details
1	Dr. G. Panda	1. Double Stage Voltage Level Boost Optimized Multilevel Inverter. 2. High-gain dc-dc converter for solar-assisted electric vehicles. 3. High Boost Switched-Capacitor Integrated Grid Following Transformerless Inverter.
2	Dr. Rakesh Roy	Rakesh Roy , Raja Gandhi, Amit Kumar, Robin., "An Electric Carrier For Transportation," Indian patent, Appl. No. 202131052540 A (filed on 16-11-2021, Publication date: 10/12/2022) (granted)
3	Dr. P.P. Singh	A flux controlled quadratic memductance-based extreme multistable 4D hyperchaotic system
4	Dr. G. Panda Dr. S. Affijulla	Satyavarta Kumar Prince, Kaibalya Prasad Panda, Shaik Affijulla and Gayadhar Panda , "Grid- Resilient Solar Photovoltaic Fed Shunt Active Power Filter System And Control Method Thereof", Indian Patent Filed and the Patent Application No: 202331005669, dated: 2/10/2023.

13. ADMINISTRATIVE RESPONSIBILITIES HELD AT NIT MEGHALAYA:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. S. Debbarma	HoD-EE	01.07.2020 – 30.06.2023
		Chief Warden	4 Sept. 2023 - Till Date
		PIC, Alumni & Industry Relations	1 July 2023 - Till Date
2	Dr. P. P. Singh	PIC, Institute Security	October 2019-Till date
		FIC, Outdoor Sport Club	July 2022-Till date
		PIC, Transit House & Guest House	December 2023-Till date
		Warden, New Boys Hostel	July 2023-Till date
3	Dr. Rakesh Roy	Member of timetable committee	1 year
		NBA Department Coordinator	Until further order
4	Prof. Gayadhar Panda	Director (I/C)	Feb-2023 to Aug-2023
5	Dr. S. Affijulla	HoD-EE	01.07.2023 – Till date
		NEP Implementation Committee - Convener	27.12.2023 –Till date
		Chairman Time Table Committee	01.07.2022 – 30.06.2023
		IQAC Member	01.07.2020 – Till date
		Furniture Committee Member	01.07.2022 – 30.06.2023
6	Dr. Ksh. Milan Singh	Transport Committee - Member	01.07.2023 – Till date
		NCC Initiation - Member	01.07.2023 – Till date

14. MEMBERSHIP OF PROFESSIONAL BODIES:

Sl. No.	Name of Faculty	Membership
1.	Dr. S. Debbarma	Senior Member IEEE, IEEE PES Society, IEI (India)
2.	Dr. P. P. Singh	Senior Member IEEE, IEEE Control System Society, IEI (India), Automatic Control & Dynamic Optimization Society (ACDOS), Member
3.	Dr. Rakesh Roy	IEEE, IEI
4.	Dr. Shaik Affijulla	Senior Member IEEE, IEEE PES Society, IEI (India)
5.	Dr. Ksh Milan Singh	Senior Member IEEE, IEI
6.	Prof. Gayadhar Panda	Senior Member IEEE, Fellow IE (I), Life Member ISTE

15. ANY OTHER INFORMATION ON PROFESSIONAL ACTIVITIES:

I. Prof. G. Panda

- Associate Editor in *International Transactions on Electrical and Energy Systems (ITEES)*, Wiley, from Feb-2021 to till date.
- Editorial Board Member in *International Journal of Emerging Electric Power Systems, De Gruyter* from Feb-2021 to till date.
- Associate Editor in *International Journal of Renewable Energy Technology*, Inderscience Publishers Ltd from July 2020 to till date.
- Performed Harmonic study and appropriate remedial measures for industrial distribution system, *Star Cements Limited, Meghalaya during Nov 2023 – Jan 2024*
- Performed Testing of transformer oil, *Star Cements Limited, Meghalaya during Feb 2024*

II. Dr. Ksh Milan Singh

- Session Chair in *IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)* March 11-12, 2023, The Maldives National University, Male City, Maldives
- Organized selection event of “*SMART INDIA HACKATHON 2022*” for 5th edition of SIH-2022 under the Government of India on 25th March 2022 (College SPOC for SIH-2022)
- Organized “TECHNO EXHIBIT 2022” in collaboration with State Council of Science, Technology & Environment (SCSTE), Meghalaya during 11th – 12th May 2022 (Coordinator)
- Organized an Expert Talk for Dr. Sayonsom Chanda, CEO Plexflo, “How to Start a Start-up” on 7th September 2022 (Coordinator)

- Organized an Expert Talk for Dr. Rajiv Kangabam, Manager-BRTC, KIIT-TBI on “Biotechnology Ignition Grant- North East (BIG-NE)” on 21st September 2022 (Coordinator)
- Organized an Expert Lecture for Professor Ajit Panda, Senior Director at VVDN Technologies on “Training, Research, Incubation leads to Industry, and Entrepreneurship” during Induction Program-2022 under CIIE, NIT Meghalaya on 1st December 2022 (Coordinator)

III. Dr. S. Debbarma

- Vice Chair, Execute Committee (EXECOM), *IEEE Guwahati Subsection*.
- Newsletter Editor, *IEEE Guwahati Subsection*.

IV. Dr. P. P. Singh

- Member, Execute Committee (EXECOM), *IEEE Guwahati Subsection*.

V. Dr. Shaik Affijulla

- Performed Harmonic study and appropriate remedial measures for industrial distribution system, *Star Cements Limited, Meghalaya during Nov 2023 – Jan 2024*
- Performed Testing of transformer oil, *Star Cements Limited, Meghalaya during Feb 2024*

VI. Dr. Rakesh Roy

- Competition on innovative fleet oriented business models for E-Vehicles in Northeast India

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

The Department of Electronics and Communication Engineering (ECE) was established in 2010 with the inception of National Institute of Technology Meghalaya. The department offers B. Tech Programme with an intake capacity of thirty & M. Tech Programme with an intake capacity of twenty in Electronics and Communication Engineering and Ph.D. program in various specialized areas of Electronics and Communication Engineering. The major research areas of the department include High Speed and Low Power VLSI, Computer Arithmetic, Wireless Sensor Networks, Cognitive Radio, Antenna Design and Signal Processing. The major objective of the Department is to impart

high quality technical education and research with a strong foundation in Electronics and Communication Engineering.

The major areas of faculty expertise of the department include VLSI Systems, High Performance Computing, Signal Processing, Digital Signal Processing, Communication and RF & Microwaves Engineering.

2. PROGRAMMES OFFERED:

- B. Tech in Electronics and Communication Engineering
- M.Tech in VLSI and Embedded Systems (Full Time & Part Time)
- Ph. D (Full Time & Part Time)

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remark
Dr. Anup Dandapat	Professor	Ph.D	Low Power VLSI, Low Power Digital Circuits, Low Power High Speed Multipliers, Low Power High Speed Memories	20.12.2012	Pursuing – 4 Awarded - 8	Regular – 3 Part Time - 1
Dr. Prabir Kumar Saha	Associate Professor	Ph.D	VLSI Design, Computer Arithmetic, Digital Signal Processing, Reconfigurable Computing	13.06.2012	Pursuing – 6 Awarded – 3 Submitted - 0	Regular - 2 Part Time – 4 Co Supervisor - 1
Dr. P Rangababu	Assistant Professor	Ph.D	FPGA-based Embedded Systems for Multimedia and DSP Applications, VLSI Chip Design, Reconfigurable Systems for Medical Diagnosis	11.08.2014	Pursuing - 1 Awarded - 2	Regular - 1 Part time - 3 Co supervisor - 1 Project - 1
Dr. Pradeep Kumar Rathore	Assistant Professor	Ph.D	Micro-Electro-Mechanical Systems (MEMS), Microelectronics, Device Fabrication Technology	11.08.2014	Pursuing - 3 Awarded - 1	Regular - 2
Dr. Bishnulatpam Pushpa Devi	Assistant Professor	Ph.D	Image processing, Hyperspectral Image Analysis, Digital Watermarking	03.01.2013	Pursuing - 4 Awarded - 1	Regular - 2 Part Time - 2
Dr. Abhishek Sarkhel	Assistant Professor	Ph.D	Microwave metamaterials and its applications, Microwave antennas	23.08.2013	Pursuing - 5 Awarded - 1	Regular - 2 Part time - 1 Co supervisor - 2
Dr. Shubhankar Majumdar	Assistant Professor	Ph.D	RF, High Speed and Power Semiconductor Devices, VLSI circuit design and Modeling Low cost Energy efficient system for Agriculture & Health Sector	13.12.2017	Pursuing - 6 Submitted - 2	Regular - 2 Part Time - 2 Project - 4

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance	Remark
Dr. Salam Shuleenda Devi	Assistant Professor	Ph.D	Medical Image Analysis, Cancerous cell analysis, Pattern recognition, machine learning	24.09.2019	Pursuing - 3	Regular - 2 Part time - 1
Dr. Satyendra Singh Yadav	Assistant Professor	Ph.D	Wireless Communication (5G and Beyond), Parallel Computing, Machine Learning	24.10.2019	Pursuing - 1	
Dr. Shravan Kumar Bandari	Assistant Professor	Ph.D	Beyond 5G communications, multi-carrier waveforms for next-generation wireless systems, cognitive radio and machine learning algorithms	30.09.2019	Pursuing - 4	Regular - 3 Part Time - 1
Prof. Israel Cohen	Adjunct Professor	Ph.D	Statistical signal processing, analysis and modeling of acoustic signals, speech enhancement, noise estimation, microphone arrays, source localization, blind source separation, system identification and adaptive filtering.	06.10.2021	--	--
Prof. N C Shivaprakash	Adjunct Professor	Ph.D	Electronic Instrumentation, Analytical Instrumentation, Embedded systems and Development of a high pressure DTA and its applications	01.04.2022	--	--
Prof. Ganapati Panda	Adjunct Professor	Ph.D	Electronics and Communication Engineering (Digital Signal Processing/Distributed Signal Processing/Digital Communication /Sensor Networks/Intelligent Instrumentation/Soft Computing/ Evolutionary Computing/ Computational Finance)		--	--
Prof. Ranjan K. Mallik	Adjunct Professor	Ph.D	Channel modeling for wireless communications, space-time systems, cooperative communications, multiple-access systems, power line communications, molecular communications, difference equations, and linear algebra			

4. LIST OF PUBLICATIONS:

a) Journals:

- Shyamosree Goswami, Vikatakavi Chandana, Anup Dandapat, "An approach to design a low power high-speed full adder circuit based on logical effort" in the Electronics Journal, Accepted, Jan-2024.
- Mahima Chaudhary, S. K. Bandari, "A low complex joint optimization model for maximizing sum rate and energy efficiency in an IRS-assisted multi-user communication scenario", in Physical Communication, Elsevier, vol. 64, pp. 1-10, 2024.
- Rabul Saikia, S. S. Devi, "White Blood Cell Classification based on Gray Level Co-occurrence Matrix with Zero Phase Component Analysis Approach", Procedia Computer Science, vol. 218, pp. 1977-1984, 2023.
- Jacinta Potsangbam, S. S. Devi, "Classification of Breast Cancer Histopathological Images Using Transfer Learning with DenseNet121", Procedia Computer Science, 2024.
- Rabul Saikia, A. Sarma, S. S. Devi, "Optimized Support Vector Machine Using Whale Optimization Algorithm for Acute Lymphoblastic Leukemia Detection from Microscopic Blood Smear Images", SN Computer Science, Vol 5(439), <https://doi.org/10.1007/s42979-024-02822-4>, 2024.
- J. Borah, Md. Shahrul Md. Nadzir, M. Cayetano, S. Majumdar, H. Ghayvat, and G. Srivastava "AiCareAir: Hybrid-Ensemble

- Internet of Things Sensing Unit Model for Air Pollutant Control, *IEEE Sensor Journal* (Early Access)
7. G. Bhargava, S. Majumdar, F. Medjdoub "Importing experimental results via S2D model in ADS tool for Power Amplifier Design" *IETE Journal of Research* (Taylor and Francis), DOI: 10.1080/03772063.2024.2326588(Early Access).
 8. M. Shahrul, et.al. "Utilizing a Low-Cost Air Quality Sensor: Assessing Air Pollutant Concentrations and Risks Using Low-Cost Sensors in Selangor, Malaysia" *Water, Air, & Soil Pollution* (Springer) 235, 229 (2024)
 9. D. Pyngrope, M. Biswas, Shiv, S. Majumdar, A. Bag "RF magnetron sputtering of Ga₂O₃ thin films: Analysis of thermal annealing induced tuning of structural, optical characteristics, and energy band alignments." *Materials Science in Semiconductor Processing* (Elsevier), Volume 174, May 2024, 108243.
 10. D. Pyngrope, S. Majumdar, G. Crupi "Fractional order capacitance behavior due to hysteresis effect of ferroelectric material on GaN HEMT devices", *Int J Numer Model.* 2024; 37(2): e3206. doi :10.1002/jnm.3206.
 11. J. Borah, S. Kumar, N. Kumar, M.S.M. Nadzir, M. G. Cayetano, H. Ghayvat, S. Majumdar, and N. Kumar "AiCareBreath: IoT Enabled Location Invariant Novel Unified Model for Predicting Air Pollutants to Avoid Related Respiratory Disease" in *IEEE Internet of Things Journal* vol. 11, no. 8, pp. 14625-14633, April 2024.
 12. S. Gidon, J. Borah, S. Sahoo, S. Majumdar, M. Fujita "Bi-Directional LSTM Model for Accurate and Real-Time Landslide Detection: A Case Study in Mawiongim, Meghalaya, India" *IEEE Internet of Things Journal*, vol. 11, no. 3, pp. 3792-3800, Feb 2024
 13. M. Biswas, D. Pyngrope, Shiv, S. Majumdar, A. Bag " RF magnetron sputtering of Ga₂O₃ thin films: Analysis of oxygen flow rate impact on stoichiometry, structural, optical characteristics, and energy band alignments" *Materials Science in Semiconductor Processing* (Elsevier), Vol. 169, January 2024, pp.no. 107937
 14. A. Paul, G. Bhargava, and S. Majumdar "Impact of holes in an interdigital parallel folded coupled line-based wideband bandpass filter for X-band applications." in *Microwave and Optical Technology Letters* (Wiley), Volume 66, Issue 1, pp. no. e33903,
 15. G. Bhargava, S. Majumdar, G. Gugliandolo, G. Campobello, N. Donato and G. Crupi, "Design and Validation of a Low-Cost Antenna-Based Solution for Microwave Imaging of RCC Structure," in *IEEE Sensors Letters* (IEEE), VOL. 7, NO. 4, APRIL 2023
 16. U. Rabuan, et. al. "Evaluations of low-cost Air Quality Sensors for Particulate Matters (PM 2.5) in Indoor and Outdoor conditions", in *Sensors and Materials Myu Scientific Publishing* Vol. 35, No. 8, 2023, p. 2881-289
 17. G. S. Chetia and B. P. Devi," Detection of intrinsic variants of an endmember in hyperspectral images based on local spatial and spectral features," in *Journal of Applied Remote Sensing*, vol. 18(1), pp. 016506-016506, 2024.
 18. Srikant Kumar Beura, Bishnulatpam Pushpa Devi, Prabir Kumar Saha, Pramod Kumar Meher, "Design of a Novel Inexact 4:2 Compressor and Its Placement in the Partial Product Array for Area, Delay, and Power-Efficient Approximate Multipliers", *Circuits, Systems, and Signal Processing*, 2024.
 19. Srikant Kumar Beura, Sudeshna Manjari Mahanta, Bishnulatpam Pushpa Devi, Prabir Saha,"Inexact radix-4 booth multipliers based on new partial product generation scheme for image multiplication", *Integration, the VLSI Journal*, vol. 94, pp. 102096(1-14), 2023.
 20. Bose, Moumita, Biswas, Ashim Kumar, Sarkhel, Abhishek, Kundu, Aparna and Chakraborty, Ujjal. "An implantable ISM band antenna for biomedical application" *Frequenz*, vol. 78, no. 3-4, 2024, pp. 109-116.
- b) Conferences:**
1. Dolly Kumari, Mahima Chaudhary, Risham Doley, S.K. Bandari, "Improved Reliability of Enhanced Sparse Vector Coding Using Maximal Ratio Transmission for Short Packet Transmission", *IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS-2023)*, 17-20 December, 2023.
 2. Suresh Penchala, S.K. Bandari, Venkata Mani V, Sai Krishna Kondoju, "On the Bit Error Rate Analysis of Log-Normal Fading Channel in IRS-setup", *20th IEEE India Council International Conference (INDICON)*, 14-17 December, 2023.
 3. Mahima Chaudhary, Dolly Kumari, S.K. Bandari,"Joint Active and Passive Beamforming in IRS-assisted Wireless Networks Over Generalized Fading Model", *IEEE International conference on vision towards emerging trends in communication and networking technologies (ViTECoN)*, 05-06 May, 2023.
 4. H. K. Dewangan, G. Bhargava, J. Borah, S. Majumdar "Data-Driven Model-Based Design Approach for Class EFJ Power Amplifier with Analog Predistortion Circuit" *IEEE MAPCON 2023*, DOI: 10.1109/mapcon58678.2023.10463784
 5. S. Warjri, A. Surong, S. Majumdar, M. M. Langstieh, M. Marbaniang and P. P. Singh, "Radar Communication via Asymmetric and Wideband Chaotic Signal," *2023 5th International Conference on Energy, Green Energy Technologies Power and Environment: Towards Flexible (ICEPE)*, Shillong, India, 2023, pp. 1-6, DOI: 10.1109/ICEPE57949.2023.10201586.

6. S. Ghosh, S. Mukhim, N. Sohtun and A. Sarkhel, "A Multiband Ultrathin Multifunctional Polarization Rotator Metasurface and its Application in RCS Reduction," 2023 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON), Ahmedabad, India, 2023, pp. 1-6.
7. Shyamosree Goswami, Alok Kumar and Anup Dandapat, "Design of a Stack Based Compressor for High-Speed Computation", 2024 IEEE 9th International Conference for Convergence in Technology (I2CT), VIVANTA PUNE, HINJAWADI (Hinjewadi) Pune (Maharashtra), India., 5th-7th Apr 2024.
8. S. Goswami, K.H. Varma, R. Gudla, A Dandapat, "CASCAM: Comparative Analysis of Search operation of FinFET and MOSFET based Content Addressable Memory (CAM)", 3rd International Symposium on Sustainable Energy and Technological Advancements (ISSETA 2024), National Institute of Technology Meghalaya, India, 23rd -24th Feb. 2024.
2. Navamani Prasath, Monika Jasthi, Rabul Saikia, Muralidaran Loganathan, S. S. Devi, "Acute Lymphoblastic Leukemia Detection Using DenseNet Model from Microscopic Blood Smear Images", Lecture Notes in Networks and Systems, vol 791. Springer, Singapore. https://doi.org/10.1007/978-981-99-6755-1_18, Pages 237-247, 2023.
3. Gaurav Bhargava, and Shubhankar Majumdar. "Pre-Distortion: An Effective Solution for Power Amplifier Linearization." In book RF Circuits for 5G Applications: Designing with mmWave Circuitry (2023) :(Wiley Press), Chapter- 12, pp.no. - 223-239.
4. Moumita Bose, Aparna Kundu, Abhishek Sarkhel, Ujjal Chakraborty. "A Review of Design Challenges of Metamaterial-Inspired Body-Worn Antennas": Taylor & Fransis, pp no. 115-144.

c) Book Chapter:

1. Monika Jasthi, Navamani Prasath, Rabul Saikia, S. S. Devi,

5. PATENT:

Moupali Roy, Saptarshi Basu, Biswarup Neogi, Prabir Kumar Saha "A SYSTEM FOR PREDICTION OF PULMONARY CONDITION OF HUMAN". (Application No: No. 202331043194).

6. EXTERNALLY SPONSORED R&D PROJECT[S] AS PI/CO-PI:

Sl. No.	Name of the faculty member	Title of the Project	Period (From -To)	Sponsoring Organisation	Amount [in Lakhs]	Role [PI/Co-PI]
1	Dr. P. Rangababu	A Deep Learning Approach for Preservation of Cultural Heritage	28 Jan 2022-Jan 2025	SERB CRG	23.91	Co-PI
2	Dr. P. Rangababu	Design and Development of Highly Sensitive Non-Conventional Ring Channel Shaped MOSFET Based Current Mirror Integrated Pressure Sensors	19 July 2021- 19 July 2024	Department of Science & Technology, Ministry of Science and Technology, Government of India	44.93	Co-PI
3	Dr. Shubhankar Majumdar	Air quality network for smart city: real-time air quality monitor, evaluation, and prediction of air pollutants using machine learning through the deployment of low-cost air quality sensor (LAQS) in India and two selected asean countries (Malaysia, Philippines)	Aug 2021-Jul 2023	ASEAN-India STI Cooperation	26.25	PI

Sl. No.	Name of the faculty member	Title of the Project	Period (From -To)	Sponsoring Organisation	Amount [in Lakhs]	Role [PI/Co-PI]
4	Dr. Shubhankar Majumdar	Development of E-mode III-Nitride devices for Energy Optimized Agile Power Electronics Indo-Czech Project with Alice Hospodkov	2020-2023	Department of Science & Technology (International Bilateral Co-operation Division)	27.76+26.75 (CEERI PILLANI)+ euro 3,00,000 (czech side)	PI
5	Dr. Shubhankar Majumdar	Fully acoustics testing of low velocity impact damage in composite plate using the concept of local defect resonance	2022-25	Aeronautics R and D Board	INR 24.02	Co-PI
6	Dr. Pradeep Kumar Rathore	Development of High Sensitivity CMOS-MEMS Integrated Pressure Sensor and System for Space Application	2019 - 20	Indian Space Research Organisation (ISRO), Department of Space, Government of India	32.46	PI
7	Dr. Pradeep Kumar Rathore	Design and Development of Highly Sensitive Non-Conventional Ring Channel Shaped MOSFET Based Current Mirror Integrated Pressure Sensors	2021 - 2024	Department of Science & Technology, Ministry of Science and Technology, Government of India	44.93	PI
8	Dr. B. Shravan Kumar	Deep-cancellation: A deep learning approach to mitigate interference in GFDM receiver for future wireless systems	2021-2023	TEQIP-III	1.83	PI
9	Dr. Abhishek Sarkhel	Compact Antenna System for High-Speed Device to Device Communication	2021-2023	TEQIP-III	1.99	PI
10	Dr. Shubhankar Majumdar	BRO Project - Sensor Based Big Data Analysis for Prognostics and Health Management of RCC Bridges	2023-2025	BRO	INR - 370	PI - Dr. D. Adak; Co-PI Dr. S. Dutta, Dr. S. Majumdar
11	Dr. P. Saha, Dr. P. K. Rathore, Dr. S. Majumdar	SMDP Project - Development of On-chip MEMS Pressure Sensor based Tensiometer for Agriculture.	2023-2028	MIETY	INR- 110	PI- Dr. P. Saha Co PI - S. Majumdar and P.K. Rathore
12	Dr. P. Saha Dr.A. Sarkhel Dr.B. Shravan Kumar Dr.S. Majumdar Dr. Satyendra Singh Yadav	TCIL Project- UAV Assisted Soil Moisture Content Determination through 5G Network	2023-2028	DoT	INR- 114	
13	Dr. P. Rangababu Dr. Abhishek Sarkhel Dr.B. Shravan Kumar Dr. Shubhankar Majumdar Dr. Satyendra Singh Yadav Dr.B. Pushpa Devi Dr. Pradeep Kumar Rathore Dr. Prabir Saha Dr. Anup Dandapat Dr. Salam Shuleenda Devi	AI Empowered Advanced Wireless Communication Systems	Sanctioned on Sep 19 2021 2021-2026	DST -FIST 2020	75.00 Lakhs	Dept

7. CONFERENCE/ WORKSHOP/ SEMINAR ORGANIZED:

1. Inauguration of the IEEE MTTS Student Branch Chapter by Prof. G. Chattopadhyaya (NASA); Dr. C. Saha (IIST, Trivandunum)
2. Expert lecture by Prof. Kumar Vijay Mishra on 22nd Feb 2024.

8. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED BY FACULTY MEMBERS:

Sl. No.	Name of Faculty	Name of the Programme attended	Duration
1	Dr. Shravan Kumar Bandari	1. Robotic Process Automation, C-DAC Kolkata. 2. 5G lab training by IITG	20-24 March 2023 12-13 Feb, 2024

9. INVITED TALKS DELIVERED:

1. Prabir Saha has delivered an Invited Talk for workshop entitled “Five-Day Workshop on Artificial Intelligence and Data Science: The Future of Technology” on 6th March 2024.
2. Anup Dandapat has delivered an invited Talk in “International Conference on Device Sensors and Systems (CoDSS)” on 10-11 Feb 2024.
3. Anup Dandapat has delivered a invited Expert Talk on “Low Power Circuit Design” on 10th April 2024 for ECE department in association with IIC, Asansol Engineering college.

10. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. P. Rangababu	HOD, EC	July 2019-June 30, 2022
2	Dr. Pradeep Kumar Rathore	Professor-in-charge, Centre for Technology Enabled Learning	Jan 2019 - till date
		Faculty Advisor, B. Tech. EC 2019 Batch	7/1/2019 - till date
		Swayam Coordinator, NIT Meghalaya	8/1/2020 - till date
3	Dr. Shubhankar Majumdar	In Departmental NBA Committee	July 2019 -till date
		Member of Startup Cell	July 2018- till date
		Institute level IQAC member - Criteria 9 NBA	July 2019- till date
		Faculty Incharge of Departmental Stationary	July 2018- till date
4	Dr. Abhishek Sarkhel	Faculty Advisor	December 2022 - till date
		Lab In Charge RF Microwave & Optical Fiber Laboratory	August 2013 - till date
		Lab In Charge COE	August 2019 - till date
5	Dr. Satyendra Singh Yadav	Deputy Faculty In-Charge, Computer Center	February 2020- till date
6	Dr. Prabir Kumar Saha	Member of PG PEC	June 2019 to Till Date
		DSD Lab In-charge	July 2018 to till date
		Warden Lapalang -IV boys Hostel	July 2021 to Till Date
		HOD, EC	1 st August 2023 to Till Date
7	Dr. Bishnulatapam Pushpa Devi	High Performance computing Lab In-charge	Jan 2020 - Till date
		Departmental website maintenance In-charge	Jan 2020- Till Date
		Warden Lapalang Girls Hostel	July 2022-till date
		Routine Committee, Chairperson	May 2024- Till Date

Sl. No.	Name of Faculty	Responsibilities	Duration
8	Dr. Salam Shuleenda Devi	Digital Image Processing Lab In- Charge	Jan 2020-Till date
		Warden of Nongthymmai Girls Hostel	July 2022-June 2024
		Faculty Advisor of M. Tech 2022 Batch	July 2021-Till Date
		Faculty in-charge, Coding Club, SAC	July 2021-Till Date
		Faculty Advisor of M. Tech 2023 Batch	July 2023-Till Date
		On-campus Business Committee	May 2023-Till Date
		Verifying Official for PhD Admission	Spring 2024
9	Dr. Shravan Kumar Bandari	Member, Examination committee	Aug-2022 - till date
		Faculty I/C (Dance and Drama club, SAC)	Aug-2022 - till date
		Member, NSS Committee	Aug-2022 - till date
		Member, Anti-Ragging squad Committee	2022-2023
		Member, Standing Condemnation/Disposal Committee for proper disposal of E-Waste	2022 – till date
		Warden - Lapalang 2 boys hostel	July 2021 - Till Date
		Faculty Advisor of B.Tech 1st year - 2021 batch	July 2021 - Till Date
		M.Tech & M. Sc admission screening committee for the academic year	2022-2023
		Communication Systems Lab In charge	Jan 2020 - till date
		CCMT-2024, Coordinator	2024
10	Dr. Anup Dandapat	Dean Academic	March 2024-till date
		Member of PG PEC	July 2022-Till Date
		Research Lab In-charge	July 2018-till date
		Digital System Lab In-charge	July 2018-till date

11. MEMBERSHIP OF PROFESSIONAL BODIES:

Sl. No.	Name of Faculty	Member of
1	Dr. Anup Dandapat	IEEE
2	Dr. P. Rangababu	IEEE (SM), IETE (F), IEI, IEEE CTSOC Technical member
3	Dr. Prabir Saha	IEEE, IETE, IAENG
4	Dr. Shravan Kumar Bandari	IEEE
5	Dr. Pradeep Kumar Rathore	IEEE
6	Dr. Shubhankar Majumdar	IEEE , URSI, ECS, IAENG

12. ANY OTHER NOTABLE INFORMATION:

Sl. No.	Name of Faculty	Technical Assistance	Name of Journal/Conference
1	Dr. A. Dandapat	Reviewer	a. IEEE b. IET c. Elsevier d. Taylor & Francis
2	Dr. P. Rangababu	Reviewer	a. IEEE ACCESS b. IEEE BROADCAST c. IEEE TCAS-I d. TCSVT
3	Dr. Prabir Kumar Saha	Reviewer	a. Elsevier b. Springer c. Electronics Journal d. Ain Shams Engineering Journal e. IEEE TVLSI

Sl. No.	Name of Faculty	Technical Assistance	Name of Journal/Conference
4	Dr. Shubhankar Majumdar	Program Chair & Reviewer for the conference	a. IEEE TED b. IEEE Access c. Wiley IJNM, RFCAD
		Reviewer for the journals	a. Springer JCEL b. Silicon c. Elsevier Microelectronics Journal
5	Dr. Abhishek Sarkhel	Reviewer	Wiley International Journal of RF and Microwave Computer-Aided Engineering
6	Dr. Shravan Kumar Bandari	Reviewer	a. IEEE Transactions on Wireless Communications (IEEE) b. IEEE Wireless Communications Letters (IEEE) c. IEEE Communications Letters (IEEE) d. IET Communications e. IET Generation, Transmission and Distribution f. AEU- International Journal of Electronics and Communications (Elsevier) g. Physical Communication (Elsevier) h. International Journal of Communication Systems (IJCS, Wiley) i. Transactions on Emerging Telecommunications Technologies (ETT, Wiley) j. ICT Express (Elsevier), IETE Journal of Research (Taylor & Francis) k. KSII Transactions on Internet and Information Systems
7	Dr. Satyendra Singh Yadav	Reviewer & TPC Member	a. IEEE Access b. Wiley
8	Dr. Salam Shuleenda Devi	Reviewer TPC Member	a. International Journal of Interactive Multimedia and Artificial Intelligence, Multimedia Tools and Applications, Medical & Biological Eng & Computing, Sadhana, International Conference on Data Science and Network Engineering (ICDSNE 2023) b. International Conference on Data Science and Network Engineering (ICDSNE 2023)

DEPARTMENT OF MECHANICAL ENGINEERING

1. INTRODUCTION TO THE DEPARTMENT:

The Department of Mechanical Engineering started from the session July 2013. The department is offering 4-year B.Tech Programme in Mechanical Engineering with an intake capacity of 30. The department consists of bright, young and highly potential experienced faculty members. Moreover, the department has one adjunct faculty, one visiting faculty, and one Fulbright faculty.

The main objective of the department is to cater the students with class tutorial and in hand practice with the state-of-the-art laboratories & workshop. The Lab. are, Fluid Mechanics Lab., Theory of Machine Lab., Thermal Science Lab., Strength of Material Lab., Material Science Lab., Metrology and Instrumentation Lab., Advanced Manufacturing Lab., Computational Lab.

The basic aim of the department is to provide the students with perfect principles and practice in mechanical engineering, which helps them to serve the society and address a variety of needs. Another, objective of the department is to come up with courses containing interdisciplinary concepts keeping in view of the advancement of today's world in the field of robotics, mechatronics, nanotechnology etc. The department also plans to have industry-academic collaboration so that both can complement each other in study, research, and overall development.

2. PROGRAMMES OFFERED:

- a) Bachelor of Technology in Mechanical Engineering
- b) Minor Degree in Sports Engineering
- c) Master of Technology in Mechanical Engineering (Specialization in Fluids and Thermal Engineering)
- d) Doctor of Philosophy in Mechanical Engineering

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance
Prof. Harish Chandra Das	Professor	PhD	Thermal	28-12-2017	Part-Time: 5 Ongoing
Prof. Deba Kumar Sarma	Professor	PhD	Manufacturing	23-08-2013	Full-Time: 2 Ongoing
Dr. Subhendu Maity	Assistant Professor	PhD	Fluid Mechanics	16-07-2012	Full-Time: 1 Ongoing
Dr. Bikash Kumar Sarkar	Associate Professor	PhD	Fluid Power and Control, Robotics and Mechatronics	21-08-2013	Full-Time: 4 Completed, 2 Ongoing Part-Time: 4 Ongoing
Dr. Kishore Debnath	Associate Professor	PhD	Manufacturing	16-07-2015	Full-Time: 4 Completed, 1 Submitted, 4 Ongoing Part-Time: 4 Ongoing
Dr. Koushik Das	Associate Professor	PhD	Thermal	31-07-2014	Full-Time: 2 Completed, 3 Ongoing Part-Time: 2 Ongoing
Dr. Biplab Kumar Debnath	Assistant Professor	PhD	Thermal	30-07-2014	Full-Time: 3 Completed, 3 Ongoing
Dr. Rajat Subhra Das	Assistant Professor	PhD	Thermal	16-07-2015	Full-Time: 3 Completed, 3 Ongoing Part-Time: 4 Ongoing
Dr. Maneswar Rahang	Assistant Professor	PhD	Manufacturing	06-06-2016	-
Dr. Md. Nur Alom	Assistant Professor	PhD	Fluids and Thermal	21-07-2014	--
Dr. Sambit Majumder	Assistant Professor	PhD	Fluids and Thermal	20-07- 2015	--
Dr. Moumita Tewary	Assistant Professor	PhD	Machine Design	28-12- 2023	--

4. LIST OF PUBLICATIONS:

a) Journals:

Sl. No.	Authors	Publication Details
1	M.R. Pal, K. Debnath, S.K. Sahu, and R.N. Mahapatra	Multi-Objective Optimization and Prediction of Responses Using GRA and ANN in Micro-EDM of Ti6Al4V Using Different Tool Materials. Journal of Advanced Manufacturing Systems. DOI: 10.1142/S0219686724500306
2	M.R. Pal, K. Debnath, and R.N. Mahapatra	Optimization of Machining Parameters and Analysis of the Surface Characteristics in Micro-Electrical Discharge Machining of 310 and 316 Stainless Steel. Journal of Materials Engineering and Performance. DOI: 10.1007/s11665-024-09192-1
3	M.R. Pal, K. Debnath, G. Surya Rao, and R.N. Mahapatra	Micro-EDM of Ti-6Al-4V Using Various Tool Materials: Multi-Response Optimization and Surface Characterization. Surface Review and Letters. DOI: 10.1142/S0218625X2450080X
4	H. Dutta, S. Chaurasia, T. Arun Kumar, S. Muralidharan, and K. Debnath	A Novel Investigation on Rotary Tool-Assisted Electrical Discharge-Micro Drilling of Carbon-Aramid Hybrid Composites. Materials Letters, Vol. 367, 136628, 2024.
5	H. Dutta, S. Saha, K. Debnath, D.K. Sarma, M. Roy Choudhury, and A. Bhowmik	Optimizing Processing Parameters in Electrical Discharge Milling of CFRP Using Metaheuristics. Materials and Manufacturing Processes, Vol. 39(8), 1131-1143, 2024
6	G. Surya Rao, K. Debnath, and R.N. Mahapatra	Degradation Characteristics of the Pineapple Leaf Fibre Reinforced Green Composite Developed by Injection Moulding Under Different Environmental Conditions. Industrial Crops and Products, Vol. 214, 118429, 2024.
7	G. Surya Rao, K. Debnath, and R.N. Mahapatra	Recycling and Degradation Behaviour of the Bamboo Fibre Reinforced Green Composite Fabricated by Injection Moulding. Sustainable Materials and Technologies, Vol. 39, e00865, 2024.
8	G. Surya Rao, K. Debnath, and R.N. Mahapatra	Mechanical, Thermal, Morphological, and Fibre Characteristics During Injection Moulding of Green Composites. Fibers and Polymers, Vol. 25(1), 331-346, 2024.

Sl. No.	Authors	Publication Details
9	K. Debnath, B.C. Behera, M. Rout, and G. Surya Rao	Fabrication of Micro-Hole in 3D Printed CFRP Composite by Electrical Discharge Machining Process. <i>Journal of Advanced Manufacturing Systems</i> , Vol. 22(4), 741-752, 2023.
10	S.K. Yadav, A. Singh, and K. Debnath	Experimental Investigation of Powder-Mixed Electrolyte on CFRP Composites using Electrochemical Discharge Machining Process. <i>International Journal of Machining and Machinability of Materials</i> , Vol. 25(3/4), 293-314, 2023.
11	A. Gaikwad, K. Debnath, and M.K. Gupta	Effects of Alkaline-Acid Treatment on the Physiochemical Attributes of Natural Cellulosic Fibre of <i>Arundo Donax L.</i> <i>Journal of Applied Polymer Science</i> , Vol. 140(48), e54724, 2023.
12	S.K. Yadav, A. Singh, K. Debnath, S. Grover, and S. Singh	Experimental Investigation and Comparative Study Between Machining of CFRP Composite and CNT-Mixed CFRP Composite Using ECDM Process. <i>Journal of the Brazilian Society of Mechanical Sciences and Engineering</i> , Vol. 45(9), 454, 2023.
13	G. Surya Rao, K. Debnath, and R.N. Mahapatra	Mechanical, Thermal, and Morphological Behavior of Pineapple Leaf Fibre and Polylactic Acid Green Composites Fabricated by Varying Fibre Loading, Fibre Length, and Injection Parameters. <i>Polymer Engineering and Science</i> , Vol. 63(8), 2498-2510, 2023.
14	G. Surya Rao, R. Paul, S. Singh, and K. Debnath	Influence of Conventionally Drilled and Additively Fabricated Hole on Tensile Properties of 3D-Printed ONYX/CGF Composites. <i>Journal of Materials Engineering and Performance</i> , Vol. 32(13), 5849–5861, 2023.
15	R. Davis, A. Singh, K. Debnath, A.K. Keshri, P. Soares, L. Sopchenski, H.A. Terryn, and V. Prakash	Surface Modification of Biodegradable Mg Alloy by Adapting μ EDM Capabilities with Cryogenically-Treated Tool Electrodes. <i>The International Journal of Advanced Manufacturing Technology</i> , Vol. 126(9-10), 4617-4636, 2023.
16	M. Mohan, N. Alom and U. K. Saha	Role of Optimization and Soft-computing Techniques in the Design and Development of Futuristic Savonius Wind Turbine Blades: A Review”, <i>Wind Engineering</i> , vol.47, issue. 3, 2023, DOI: DOI: 10.1177/0309524X221150491
17	U.K. Patel, N. Alom, N., and the U.K. Saha	Aerodynamic Analysis of a 2-stage elliptical-bladed Savonius Wind rotor: Numerical simulation and experimental validation”, <i>International Journal of Green Energy</i> , 2023, vol.20, Issue 7.
18	S. Majumder, D. N. Basu and G. Natarajan	Partially-saturated-cells approach for conjugate heat transfer problems, <i>Computers and Fluids</i> , vol. 274, pp. 106232, 2024
19	S. Majumder, D. N. Basu and G. Natarajan	Comprehensive assessment of the partially-saturated-cells framework for convective problems, <i>International Journal of Heat and Mass Transfer</i> , vol. 217, pp. 124613, 2023
20	RM Mazarbhuiya, M Rahang, S Saha	Masking in EDM for pattern generation on Al-6061 work surface, <i>Advances in Materials and Processing Technologies</i> 9 (3), 893-907
21	RM Mazarbhuiya, M Rahang	Application of PM tool materials for selective area surface modification by metallic particulate migration in EDM. <i>S dhan</i> 48 (3), 133
22	RM Mazarbhuiya, M Rahang	Experimental analysis of surface integrity in electro-discharge coating process, <i>Surface Engineering</i> , 02670844231221528
23	BM Barua, M Rahang	Parametric study on surface modification of Al-7075 alloy using electric discharge coating, <i>Surface Engineering</i> , 02670844241236601
24	RM Mazarbhuiya, M Rahang	Material Deposition for Pattern Generation Using W-Cu Sintered Tool in Reverse EDM, <i>Surface Review and Letters</i> , 2450110
25	BM Barua, M Rahang	Surface modification using micro-nano sized powder metallurgical green compact electrode in EDM, <i>Manufacturing Technology Today</i> 22 (3), 32-36
26	Tewary M, Roy T	Electro-thermo-mechanical instability study of fiber-reinforced bimorph convex dielectric elastomer. <i>Soft Materials</i> ; 21(2):191-205, 2023
27	Tewary M, Roy T	Nonlinear dynamic analysis of anisotropic bimorph dielectric elastomer actuator for soft fish robots. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 127:107585, 2023
28	O. Chakraborty, S. Roy, B. K. Debnath, S. Negi, M. A. Rosen, S. Safari, M. E. H. Assad, R. Gupta, B. Das,	Energy, exergy, environment and techno-economic analysis of parabolic trough collector: A comprehensive review. <i>Energy & Environment</i> , 2023, Page Nos. 1-64. DOI: 10.1177/0958305X231206507
29	S. Das, B. K. Debnath, S. Negi, B. Das, S. Safari, B. V. Reddy, S. Debbarma, M. A. Ehyaei,	A comprehensive review into the effects of different parameters on the hydrogen-added HCCI diesel engine, <i>Energy Science & Engineering</i> , August, 2023, Page Nos. (1-31), DOI: 10.1002/ese3.1559.

Sl. No.	Authors	Publication Details
30	Venkaiah, P., Sarkar, B. K., & Chatterjee, A.	Harris hawks optimization tuned exponential reaching law-based integral SMC for pitch control of linear hydraulic actuated wind turbines. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, September 2023 238(6), 1855-1873. DOI: https://doi.org/10.1177/09544062231193825
31	A. Das, R. S. Das, K. Das	Numerical analysis of liquid desiccant dehumidification system with novel trapezoidal baffled surface, International Journal of Refrigeration, 2023, 145, 457-466 https://doi.org/10.1016/j.ijrefrig.2022.09.027
32	S. Saha, K. Das	Effect Of Modifications Of Auxiliary Surface Attached To A Rectangular Vortex Generator, Journal of Thermal Engineering (Accepted)

b) Book Chapters:

Sl. No.	Author Name	Title	Publisher	ISBN No	Pages	Year
1	H. Dutta, J. Jayaramudu, K. Debnath, D.K. Sarma, P. Chetia, and S.P. Selvam	Introduction to Sustainable Manufacturing. In Progress in Sustainable Manufacturing	Springer	978-981-99-0203-3	1-10	2023
2	B.C. Behera, B.R. Moharana, M. Rout, and K. Debnath	Application of Machine Learning in the Machining Processes: Future Perspective Towards Industry 4.0. In Intelligent Manufacturing Management Systems: Operational Applications of Evolutionary Digital Technologies in Mechanical and Industrial Engineering	Wiley	978-1-119-83676-6	141-156	2023

c) Conferences:

Sl. No.	Authors	Publication details
1	N. Alom, P.K. Talukdar, B.K. Sarkar, and U.K. Saha	Influence of Concentrated Augmenter on the Performance of A Two-Bladed Savonius Wind Rotor Composed of Arc-Elliptical Profile, Paper No. GTIndia2023-118292, ASME Gas Turbine India Conference, December 07 – 08, 2023, Bangalore, India.
2	S. Bhuyan, D. N. Basu and S. Majumder	Investigation of Natural Convection in Square Cavity Implementing non-Boussinesq Approximation, 10th International and 50th National Conference on Fluid Mechanics and Fluid Power (FMFP), December 20-23, 2023, IIT Jodhpur, Rajasthan, India
3	B. Baishya, A. Mukherjee, S. Majumder and D. N. Basu	On the impact of adjustable surface tension on pool boiling phenomena via a pseudopotential-based solver, 10th International and 50th National Conference on Fluid Mechanics and Fluid Power (FMFP), December 20-23, 2023, IIT Jodhpur, Rajasthan, India
4	S. Majumder, D. N. Basu and G. Natarajan	Comparative Appraisal of Direct-Forcing Immersed-Boundary Lattice-Boltzmann Method And Partially Saturated Cells Method for Thermofluidic Applications, 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference, December 14-17, 2023, IIT Patna, Bihar, India
5	S. Majumder, D. N. Basu and G. Natarajan,	Development and validation of a novel solid collision operator in IB-LB framework for simulation of thermal flows, Proceedings of the 17th International Heat Transfer Conference, August 14-18, 2023, Cape Town, South Africa
6	RM Mazarbhuiya, M Rahang	Pattern Generation using Enamel Coating in Die-sinking EDM, E3S Web of Conferences 430, 01278
7	A. Hira, M. Kumar, D.S. Pasi, R.K. Prasad, A.C. Chandekar, B.K. Debnath,	Investigation of F-Shape manifold for air-hydrogen mixing affected by EGR in twin cylinder, CRDi, dual-fuel diesel engine, In Proceedings of the 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Patna, Patna-801106, Bihar, India, December 14-17, 2023, pp. 651-656. https://www.dl.begellhouse.com/references/1654896405e56590,4869f8107409fb40,48b1e79775c4edc2.html
8	D. Marwein, P. Yadav, B. K. Debnath, R. S. Das,	Effect of variation of water depth on the performance of a double slope solar still for Shillong weather condition? a CFD study, In Proceedings of the 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Patna, Patna-801106, Bihar, India, December 14-17, 2023, pp. 987-992. https://ishmtdigitallibrary.com/conferences/1654896405e56590,4869f8107409fb40,3f1b122a5325c3df . HTML.

Sl. No.	Authors	Publication details
9	Marwein D, Yadav P, Debnath B.K and Das RS	Evaluating the impact of humidity and non-sunshine hour auxiliary heating on the performance of a double slope solar still, 1st International Conference on Advancement in Energy, 18th – 20th December, 2023.
10	Venkaiah, P., Sarkar, B. K., & Chatterjee, A.	Horizontal Axis Wind Turbine Pitch Actuation Fault and Reaching Law Based Sliding Mode Controller Performance Analysis. In August, 2023 IEEE 3rd International Conference on Sustainable Energy and Future Electric Transportation (SEFET) (pp. 1-6). IEEE.
11	Vinod, J., Venkaiah, P., Kumar, N., & Sarkar, B. K	Francis turbine control with electrohydraulic inlet guide vane system dynamics. June, 2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE) (pp. 1-6). IEEE
12	Pratit Sunder Dev Roy, Koushik Das, and Hriday Mani Kalita	Performance Enhancement of Cylindrical Heat Pipe using Tapered Wick, December , 2023 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference
13	Mrinal Pradhan, Koushik Das, and Rajat Subhra Das	Numerical analysis of liquid desiccant regenerator with corrugated surface, December , 2023 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference

5. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED BY FACULTY MEMBERS:

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Dr. Kishore Debnath	7 th International Conference on Mechanical Engineering and Robotics Research (ICMERR), Krakow, Poland	09-11 December, 2022
2	Dr. Kishore Debnath	Participated in the Five Days Management Development Program on “Nurturing Future Leadership Program” under the Aegis of Malaviya Mission Teacher Training Programme (MMTTP), Ministry of Education, GoI, Organized by the Indian Institute of Management Shillong, India,	11-15 March, 2024
3	Dr. S. Majumder	Short Term Course on “Multigrid Methods for Fluid Flow and Heat Transfer” conducted by IIT Kharagpur and sponsored by SPARC,	11-15 September, 2023

6. PROJECTS:

a) Sponsored Projects:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Development and Testing of Solar Photovoltaic (PV) Assisted Hybrid Double-Slope Desalination Solar Still for Off-grid Rural-North East India	PI: Dr. Biplab Kumar Debnath Co-PI: Dr. Rajat Subhra Das	SERB, DST	29,00,000/-	3 years	Ongoing
2.	Nonlinear Dynamic Analysis and Development of Soft Fish Robot	PI: Dr. T Roy (NIT Rourkela) Co-PI: Dr. Moumita Tewary	TIDF, IITG	14,50,000/-	2 years	Ongoing
3	Control of fish robot with External disturbance an experimental study	PI: Dr. Bikash Kumar Sarkar Co-PI: Dr. Subhendu Maity	TIDF, IITG	9,00,000/-	2 years	Ongoing
4	Development of a Novel Solar Driven Dedicated Outdoor Air System (DOAS) for Space Heating and Liquid Desiccant Dehumidification with Direct/Indirect Contact Heat/Mass Exchangers for Meghalaya Region	PI: Dr. Rajat Subhra Das	SERB, DST	32,41,700/-	3.5 years	Ongoing

7. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. Kishore Debnath	Head of the Department	2 Years
2	Dr. Rajat Subhra Das	PiC, Centre for Career Development	5 Years
		Faculty-in-charge, Task Force, SAC	2 Years

Sl. No.	Name of Faculty	Responsibilities	Duration
3	Dr. Biplab K. Debnath	PIC, Institute Transportation	1 year
4	Dr. Bikash Kumar Sarkar	PIC, Centre for Robotics & Mechatronics	2 years
		Nodal Officer, Samarth ERP	2 years
		Departmental NBA coordinator	2 years
		Faculty in-charge, Theory of Machine Lab.	2 years
		Machine in charge, 3D printer, CIF	2 years
5.	Dr. Koushik Das	PIC, Central Workshop	–
		Convenor, Institute time table committee	1 year
		Deputy Centre I/C, DIC	–
6.	Prof. D. K. Sarma	Dean Planning and Development	1 year
7.	Prof. H. C. Das	Dean Public Relations, Branding & Ranking	

8. MEMBERSHIP OF PROFESSIONAL BODIES:

Name	Professional Body	Membership No. and Status
Dr. Md Nur Alom	ASME	102089520, Member
Prof. D.K. Sarma	Indian Welding Society	Life member
Dr. Bikash Kumar Sarkar	ASME	100784361, Member
	IEEE	92662020, Senior Member
	NSFMFP	LM631, Life member
	ISHMT	1064, Life member
Dr. Subhendu Maity	IEEE	93088281, Member
	NSFMFP	LM635, Life member
	ISHMT	1064, Life member
	ISTE	LM 111112, Life member
	ISTAM	L/1067, Life member
	IEI	AM166945-4, Associate Member
	SAISE	20151124001, Life Member
Dr. Biplab Kumar Debnath	ASME	Member (101982384)
	IEI	Associate Member (AM159023-8)
	IEEE	Member (98649940)
	ASCE	Associate Member (9783236)
Dr. Sambit Majumder	IEI	Associate Member (AM159672-4)

DEPARTMENT OF CHEMICAL AND BIOLOGICAL SCIENCES

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

The Department of Chemistry, National Institute of Technology Meghalaya has started in 2012. In addition to the B.Tech. Chemistry course, the department is also offering 2 yrs M.Sc. program in Chemistry from 2015 onwards with all the major areas of Chemistry such as Inorganic, Organic, Physical, and Theoretical Chemistry. The intake capacity of M.Sc. programme is twenty (20). In 2024, the Department is renamed as Chemical and Biological Sciences.

Currently, it is offering Ph.D. programs in broad areas of Chemical Sciences like Organic Chemistry, Inorganic Chemistry, Biophysical Chemistry, Materials Chemistry and Computational Chemistry. Presently, the department has a total of seventeen (17) Ph.D. students working in various thrust areas.

The department has a total 04 faculty members and are involved in quality research works apart from their regular teaching and administrative works.

The M.Sc. students of the department are encouraged to apply for summer-internship programmes in various reputed institutes and universities of the country.

The department is attracting students from various other institutes and universities for M.Sc. and Ph.D. programmes in view of the concepts of interdisciplinary teaching and research for the advancement in the fields of organic materials, nanoscience and technology, smart materials and biological chemistry etc.

2. PROGRAMMES OFFERED:

- i) M.Sc. in Chemistry (2 years) and
- ii) Ph.D. (Full-time and Part-time)

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. students guidance (ongoing)
Dr. Gitish Kishor Dutta	Associate Professor	Ph.D.	Organic and Hybrid Materials (Organic Chemistry)	08-08-2013	06
Dr. Amit Kumar Paul	Associate Professor	Ph.D.	Theoretical Chemistry (Physical Chemistry)	24-06-2016	05
Dr. Atanu Singha Roy	Associate Professor	Ph.D.	Biophysical Chemistry (Physical Chemistry)	23-07-2015	08
Dr. Naba Kamal Nath	Associate Professor	Ph.D.	Crystal Engineering and Energy Converting Smart Materials (Inorganic Chemistry)	28-07-2015	07

4. LIST OF RESEARCH PUBLICATIONS

1. Nudrat, S.; Giri, P.; Nongbri, D. L.; Kumari, K.; Quraishi, S.; Jana, M.; Aguan, K.; Singha Roy, A. Analysis of the Binding Mechanism of Bioactive Coumarins with Ovalbumin: Further Investigation into the Inhibitory Effects toward Protein Fibrillation. *ACS Food Science & Technology* **2023**, 3 (5), 866–880. <https://doi.org/10.1021/acsfodscitech.3c00055>.
2. Lyndem, S.; Hazarika, U.; Bhatta, A.; Prakash, V.; Jha, A. N.; Roy, A. S. *In Vitro* Interactions of Esculin and Esculetin with Bovine Hemoglobin Alter Its Structure and Inhibit Aggregation: Insights from Spectroscopic and Computational Studies. *New Journal of Chemistry* **2023**, 47 (30), 14447–14468. <https://doi.org/10.1039/D3NJ02273K>.
3. Baruah, K.; Konthoujam, I.; Lyndem, S.; Aguan, K.; Singha Roy, A. Complexation of Turmeric and Curcumin Mediated Silver Nanoparticles with Human Serum Albumin: Further Investigation into the Protein-Corona Formation, Anti-Bacterial Effects and Cell Cytotoxicity Studies. *Spectrochim Acta A: Mol Biomol Spectrosc* **2023**, 294, 122540. <https://doi.org/10.1016/j.saa.2023.122540>.

4. Nudrat, S.; Maity, S.; Khare, S.; Kumari, K.; Jana, M.; Singha Roy, A. Construing the Interactions of Coumarin Derivatives with the Main Protease of Stomach Pepsin Using Spectroscopic and Computational Analyses: Insights into the Binding Thermodynamics, Antifibrillation Studies, and Enzymatic Assay. *ACS Food Science & Technology* **2024**, *4* (1), 245–262. <https://doi.org/10.1021/acsfoodscitech.3c00495>.
5. Quraishi, S.; Saha, D.; Kumari, K.; Jha, A. N.; Roy, A. S. Non-Covalent Binding Interaction of Bioactive Coumarin Esculetin with Calf Thymus DNA and Yeast Transfer RNA: A Detailed Investigation to Decipher the Binding Affinities, Binding Location, Interacting Forces and Structural Alterations at a Molecular Level. *Int J Biol Macromol* **2024**, *257*, 128568. <https://doi.org/10.1016/j.ijbiomac.2023.128568>.
6. Kalita, G.; Sarmah, S.; Prakash, V.; Chatterjee, P. N.; Singha Roy, A. Deciphering the Intriguing Molecular Recognition of a Novel Indene-Phloroglucinol Tethered Compound with Human Serum Albumin Using Multi-Spectroscopy and Molecular Docking Studies. *J. Mol. Struct.* **2024**, *1306* (February), 137796. <https://doi.org/10.1016/j.molstruc.2024.137796>.
7. Baruah, K.; Singh, A. K.; Kumari, K.; Nongbri, D. L.; Jha, A. N.; Singha Roy, A. Interactions of Turmeric- and Curcumin-Functionalized Gold Nanoparticles with Human Serum Albumin: Exploration of Protein Corona Formation, Binding, Thermodynamics, and Antifibrillation Studies. *Langmuir* **2024**, *40* (2), 1381–1398. <https://doi.org/10.1021/acs.langmuir.3c03032>.
8. Sarmah, S.; Konthoujam, I.; Prakash, V.; Aguan, K.; Singha Roy, A. Unleashing the Binding Interaction of Chrysin-Cu(II) Complex with the Biomacromolecular Targets: Further Studies of Cell Cytotoxicity and Radical Scavenging Properties. *J Biomol Struct Dyn* **2024**, 1–17. <https://doi.org/10.1080/07391102.2023.2300122>.
9. Mondal, A.; Chaudhury, S. I.; Lyndem, S.; Rana, S.; Nongbri, D. L.; Aguan, K.; Singha Roy, A. A Protein-Based Self-Healing Hydrogel for Prolonged Antimicrobial Drug Delivery with Synergistic Activity. *New Journal of Chemistry* **2024**, *48* (11), 4865–4879. <https://doi.org/10.1039/D3NJ05676G>.
10. Haque, M.; Mondal, A.; Lyndem, S.; Chamlagai, D.; Singha Roy, A. CdSe Core and CdSe@ZnSe Core-Shell QDs Decorated with Human Serum Albumin: Deciphering the Antimicrobial Properties and Sensing of Mercury Ion. *ACS Appl Nano Mater* **2024**, *7* (7), 7453–7464. <https://doi.org/10.1021/acsnm.4c00149>.
11. P. J. Hazarika, P. Gupta, S. Allu, N. K. Nath, The photomechanical bending and photosolient effect of flexible crystals of an acylhydrazone, *CrystEngComm* *26* (12), 1671-1676
12. S. S. Borah, M. Khan, P. Gogoi, N. Kalita, R. Thakuria, N. K. Nath, Revisiting Dimorphs of 4-n-octyloxybenzoic Acid: Contrasting Mechanical Property and Surface Wettability, *Chemistry–An Asian Journal*, e202301090
13. P. J. Hazarika, P. Gupta, A. Gunnam, R. Thakuria, A. K. Nangia, N. K. Nath, Flexible Chlorinated Azine Molecular Crystals and Their Photothermally Driven Actuation, *Crystal Growth & Design* *24* (2), 763-773
14. Deka, N.; Dutta Kishor, G. Recent advancement in carbon-based materials as sulfur hosts for rechargeable aluminium-sulfur (Al-S) batteries. *Curr. Opin. Electrochem.* **2023**, *38*, 101222. <https://doi.org/10.1016/j.coelec.2023.101222>.
15. Barman, J.; Deb, R.; Deka, N.; Dutta Kishor, G. Nitrogen-Enriched Porous Carbon Materials from Expanded Polystyrene Waste for Oxygen Reduction Reaction and Rechargeable Zinc-Air Battery. *Energy Technol.* **2023**, *11* (10), 2300395. <https://doi.org/10.1002/ente.202300395>.
16. Agarwal, A.; Boruah, P. J.; Ahamed, S. S.; Baruah, S.; Paul, A. K. Post-Transition State Direct Dynamics Simulations on the Ozonolysis of Catechol in an N₂ Bath and Comparison with Gas-Phase Results. *The Journal of Physical Chemistry A* **2023**, *127* (32), 6804-6815. <https://doi.org/10.1021/acs.jpca.3c03326>.
17. Agarwal, A.; Paul, A. K. Details of ozonolysis of catechol at high temperature and product energy distribution. *Journal of Chemical Sciences* **2023**, *135* (2), 33. <https://doi.org/10.1007/s12039-023-02152-7>.
18. Deb, B.; Anal, S. R. N.; Mahanta, H.; Yogita, Y.; Paul, A. K. Unimolecular dissociation of C₆H₆-C₆H₅Cl, C₆H₆-C₆H₃Cl₃, and C₆H₆-C₆Cl₆ complexes using machine learning approach. *The Journal of Chemical Physics* **2023**, *158* (19), 194104. <https://doi.org/10.1063/5.0139864>.
19. Boruah, P. J.; Debnath, M.; Agarwal, A.; Kalita, G.; Chatterjee, P. N.; Paul, A. K. A theoretical investigation to understand the difference in reactivities of secondary and tertiary propargylic alcohols with 1, 3,5-trimethoxybenzene in presence of Brønsted acid. *International Journal of Chemical Kinetics* **2024**, *56* (6), 356-367. <https://doi.org/10.1002/kin.21714>.
20. Agarwal, A.; Paul, A. K. Details of exit channel dynamics of the ozonolysis of catechol in condensed phase: Product channels and product energy partitioning. *Chemical Physics Impact* **2024**, *8*, 100440. <https://doi.org/10.1016/j.chphi.2023.100440>.

21. Boruah, P. J.; Venkatesh, N.; Samanta, A.; Paul, A. K. A Detailed Theoretical Investigation on Intramolecular Charge Transfer Mechanism of Primary, Secondary, and Tertiary p-amino Substituted Benzaldehyde. *Chemical Physics Impact* **2024**, 100538. <https://doi.org/10.1016/j.chphi.2024.100538>.
22. Deb, B.; Mahanta, H.; Baruah, N. P.; Khardewsaw, M.; Paul, A. K. On the intramolecular vibrational energy redistribution dynamics of aromatic complexes: A comparative study on $C_6H_6-C_6H_5Cl$, $C_6H_6-C_6H_3Cl_3$, $C_6H_6-C_6Cl_6$ and $C_6H_6-C_6H_5F$, $C_6H_6-C_6H_3F_3$, $C_6H_6-C_6F_6$. *The Journal of Chemical Physics* **2024**, 160 (2), 024307. <https://doi.org/10.1063/5.0174748>.

5. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED BY FACULTY MEMBERS:

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Dr. Amit Kumar Paul	MS-TPCCP, IIT Bombay	30th July 2023
2	Dr. Amit Kumar Paul	Refresher Course in Chemistry, NEHU 2023	5th August 2023
3	Dr. Amit Kumar Paul	International Conference on Structure and Dynamics: Spectroscopy and Scattering 2023 (IC-SDSS) IACS, Kolkata 5-8 October 2023	5th October 2023
4	Dr. Amit Kumar Paul	International workshop on Quantum Systems in Chemistry and Physics (QSCP), Jaipur 14-20 October, 2023	15th October 2023
5	Dr. Amit Kumar Paul	SoPhyC Inaugural Conference, IIT Kanpur October 29-31, 2023	30th October 2023
6	Dr. Amit Kumar Paul	iCOMET 2023, Jaipur Nov. 14, 2023	14th November 2023
7	Dr. Amit Kumar Paul	Spectroscopy and Dynamics of molecules and clusters (SDMC 2024)	February 22-25, 2024
8	Dr. Amit Kumar Paul	.Recent Trends in Chemical Science and Technology, IIT Patna	March 2-3, 2024
9	Dr. Amit Kumar Paul	A hands-on workshop on Molecular structure prediction through global optimization and machine learning techniques. NIT Durgapur	1 March 2024
10.	Dr. Gitish Kishor Dutta	8 th International FAPS Polymer Congress (FAPS 2023)	September 12-14, 2023

6. Invited Talks (as resource person)

Title of the talk	Faculty Name	Event/Institute/University/Place	Duration
Exploring the Protein Chemistry Research for Diverse Biological Applications	Dr. Atanu Singha Roy	Physical Chemistry Symposium 2023 (SoPhyC) at IIT Kanpur	29-31st October, 2023
Water soluble luminescent quantum dots for biological applications	Dr. Atanu Singha Roy	92nd Meeting of SBC 2023 at BITS-Goa [Society of Biological Chemists Goa Chapter 2023]	18-20th December, 2023
Water soluble luminescent quantum dots for biological applications	Dr. Atanu Singha Roy	8th Annual Symposium at Dept. of Chemistry, IISER Bhopal	13-14th March, 2024
Unimolecular Dissociation Reactions of Weakly Bound Aromatic Complexes at High Temperatures and the Effect of Surroundings	Dr. Amit Kumar Paul	MS-TPCCP, IIT Bombay	30th July 2023
Basics of Machine Learning and Its Relevance to Theoretical Chemistry	Dr. Amit Kumar Paul	Refresher Course in Chemistry, NEHU 2023	5th August 2023
Post-Transition State Dynamics on Ozonolysis Reaction of Catechol and the Effect of N ₂	Dr. Amit Kumar Paul	International Conference on Structure and Dynamics: Spectroscopy and Scattering 2023 (IC-SDSS) IACS, Kolkata 5-8 October 2023	5th October 2023
Post-Transition State Dynamics on Ozonolysis Reaction of Catechol and the Effect of N ₂	Dr. Amit Kumar Paul	International workshop on Quantum Systems in Chemistry and Physics (QSCP), Jaipur 14-20 October, 2023	15th October 2023
Unimolecular Dissociation Reactions of Weakly Bound Aromatic Complexes at High Temperatures	Dr. Amit Kumar Paul	SoPhyC Inaugural Conference, IIT Kanpur October 29-31, 2023	30th October 2023

Title of the talk	Faculty Name	Event/Institute/University/Place	Duration
Association/Dissociation Reactions of Weakly Bound Aromatic Complexes at High Temperatures in the Presence of Surrounding N ₂ Molecules	Dr. Amit Kumar Paul	iCOMET 2023, Jaipur Nov. 14, 2023	14th November 2023
Unimolecular Dissociation Reactions of Weakly Bound Aromatic Complexes using Machine learning methods	Dr. Amit Kumar Paul	Spectroscopy and Dynamics of molecules and clusters (SDMC 2024)	February 22-25, 2024
Unimolecular Dissociation Reactions of Weakly Bound Aromatic Complexes at High Temperatures	Dr. Amit Kumar Paul	.Recent Trends in Chemical Science and Technology, IIT Patna	March 2-3, 2024
Electrochemical Studies of Carbon and Composite Materials for Energy Applications	Dr. Gitish Kishor Dutta	Refresher Course in Chemistry-2023, NEHU.	11-08-2023 and 12-08-2023
Carbon and Composite Materials for Supercapacitors and Oxygen Reduction Reaction in Energy Storage Devices	Dr. Gitish Kishor Dutta	Frontiers in Materials Sciences: Challenges and Opportunities, Tezpur University	8-03-2024

7. PROJECTS

The number of Sponsored research projects completed in the Department: 13

Sponsored Project (Ongoing)

Sl. No.	Title of the Project	Investigators (P.I. & Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	On-the-Fly Chemical Dynamics Simulations in Gas and Condensed Phase Molecular Systems Using Machine Learning Approach	Dr. Amit Kumar Paul	SERB-DST	48,11,400	2022-25	Ongoing
2	Multi-component Pharmaceutical Solid for Developing Skin Rejuvenating Facial Peel-Off Mask	Dr. Naba Kamal Nath	Biotechnology Industry Research Assistance Council (BIRAC)	50,00,000	Sept 2023 to Sept 2025	Ongoing

8. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. Atanu Singha Roy	Chief Warden	July 2021-June 2023
2	Dr. Atanu Singha Roy	CIF Chairman	February 2021-till date
3	Dr. Atanu Singha Roy	Medical Committee (Member)	July 2021-June 2023
4	Dr. Gitish Kishor Duta	Examination Committee Chairman:	01-09-2023 to 14-05-2024
5.	Dr. Gitish Kishor Dutta	GIAN Co-Ordinator	3-07-2023 till date
6.	Dr. Amit Kumar Paul	President, Student Activity Centre	July 2021 - till date
7.	Dr. Amit Kumar Paul	PIC, Transit house & Guest house	February 2023 - till date
8.	Dr. Amit Kumar Paul	Member, Library Committee	July 2019 - till date
9.	Dr. Atanu Singha Roy	President, SAC	July 2023-till date
10.	Dr. Atanu Singha Roy	RCI Coordinator, Unnat Bharat Abhiyan	November 2023-till date
11.	Dr. Gitish Kishor Dutta	Medical Committee Chairman	4-09-2023 to till date
12	Dr. Gitish Kishor Dutta	Anti-ragging Squad committee	05-09-2023 to till date

9. Membership of Professional Bodies (During April 23- March 2024)

Sl. No.	Name of Faculty	Member of
1	Dr. Gitish Kishor Dutta	Asian Polymer Association

10. ANY OTHER NOTABLE INFORMATION:

Achievements, awards, works and recognition of the student and staff/Faculty Members

Sl. No.	Faculty Name	Role/Technical Assistance	Journal Name/Conference/other details
1	Dr. Atanu Singha Roy	Reviewers	Chemical Physics Impact (Elsevier), Analytical Methods (RSC), Journal of Molecular Structure (Elsevier), ACS Omega (ACS), Journal of Molecular Liquids (Elsevier), Journal of Molecular Recognition (Wiley), Chemosphere (Elsevier), Spectrochimica Acta A (Elsevier), Process Biochemistry (Elsevier), Food Chemistry (Elsevier)
2	Dr. Amit Kumar Paul	Reviewers	International journal of chemical kinetics, Journal of Chemical Sciences
3	Dr. Atanu Singha Roy	Top 2% Scientist 2023	Survey by Stanford University
4	Dr. Gitish Kishor Dutta	Reviewer	Advanced Functional Materials, ChemistrySelect, Electroanalytical Chemistry, Chemistry Asian Journal, ChemElectrochem

Ph.D. Students (Best Poster/Paper Awards)

1. Best Poster Award: Kakali Baruah (P20CH002), Physical Chemistry Symposium (SoPhyC-2023), Department of Chemistry, IIT Kanpur, 29-31 October 2023.

11. CONFERENCE/SYMPOSIUM/WORKSHOP ATTENDED BY THE PH.D. STUDENTS

Name of the student	Name of the conference/symposium/workshop	Organizer(s)	Duration	Title of poster/oral presentation
Mahabul Haque	1. Structure and Dynamics of Chemical and Biomolecular Systems (SDCBS23) 2. Physical Chemistry Symposium (SoPhyC-2023)	Organized by IIT Kanpur Organized by Physical Chemistry Society	October 26-28, 2023 October 29-31, 2023	HSA-mediated Synthesis of CdTe Quantum Dots: Anti-bacterial, Cell Cytotoxicity Studies and Biosensing Applications Plant Leaf Extract-mediated Synthesis of Metal Chalcogenide Quantum Dots and their Potential <i>in vitro</i> Biological Applications
Kakali Baruah	Structure and Dynamics of Chemical and Biomolecular Systems (SDCBS23) Physical Chemistry Symposium (SoPhyC-2023)	Organized by Dept. of Chemistry, IIT Kanpur Organized by the Physical Chemistry Society	October 26-28, 2023 October 29-31, 2023	Formation of protein-corona by turmeric and curcumin functionalized AuNPs and human serum albumin (HSA): A detailed investigation into the binding of AuNPs with HSA using spectroscopic and molecular dynamics simulation studies. Turmeric and Curcumin Capped Biocompatible Silver Nanoparticles for Protein-Corona Formation, Anti-bacterial efficacy and Cell Cytotoxicity Studies

Name of the student	Name of the conference/symposium/workshop	Organizer(s)	Duration	Title of poster/oral presentation
Amarjyoti Mondal	46th Indian Biophysical Society Meeting-2024	Organized by TIFR Hyderabad & University of Hyderabad, India	April 15-18, 2024	Color Transition in Chitosan-Pyrene Schiff-Base Hydrogel: Unveiling Photophysical Properties, Aggregation Induced Emission, and Antibacterial Efficiency
Yadav Manju Siyaram	1.Theoretical Chemistry Symposium 2023 2.Recent Trends in Chemical Science and Technology	Organized by Indian Institute of Technology Madras, Chennai, Tamil Nadu, India Organized by Indian Institute of Technology Patna, Patna, India	December 7-10, 2023 March 2-3, 2024	Collisional Energy Transfer Dynamics from a Vibrationally Excited Benzene to N ₂ /H ₂ O Mixed Bath Association followed by ensuing dissociation dynamics study of benzene + hexafluorobenzene system: a comparative study of gas and condensed phase results
Basudha Deb	1.International Conference on Molecular Energy Transfer in Complex Systems (iCOMET 2023) 2.Theoretical Chemistry Symposium 2023 3.Spectroscopy and Dynamics of molecules and clusters (SDMC 2024) 4.Recent Trends in Chemical Science and Technology	Organized by Indian Institute of Technology Kanpur, NISER Bhubaneswar, IIT Jodhpur Organized by Indian Institute of Technology Madras Organized by Indian Institute of Technology Guwahati, NIT Meghalaya, IISER kolkata Organized by Indian Institute of Technology Patna, Patna, India	November 12- 17, 2023 December 7-10, 2023 February 22-25, 2024 March 2-3, 2024	Unimolecular Dissociation of aromatic complexes using Machine Learning Approach Unimolecular Dissociation of Weakly bound Aromatic complexes at high temperature Unimolecular Dissociation of aromatic complexes using Machine learning approach Unimolecular Dissociation of Weakly bound Aromatic complexes at high temperature
Palash Jyoti Boruah	1.International Conference on Molecular Energy Transfer in Complex Systems (iCOMET 2023) 2.Theoretical Chemistry Symposium 2023 3.Spectroscopy and Dynamics of molecules and clusters (SDMC 2024)	Organized by Indian Institute of Technology Kanpur, NISER Bhubaneswar, IIT Jodhpur Organized by Indian Institute of Technology Madras Organized by Indian Institute of Technology Guwahati, NIT Meghalaya, IISER kolkata	Impact of substitution on the isomerization reaction of pyrazole Understanding the TICT behaviour of differently substituted p-aminobenzaldehyde molecule Understanding the TICT behaviour of differently substituted p-aminobenzaldehyde molecule	

12. GATE 2023 QUALIFIED STUDENTS

i) Venkatesh N

ii) Sana Quraishi

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

The main aim of the department is the holistic and all-round development of the technical graduates into socially responsible individuals by providing allied knowledge essential to engineering students. The department is equipped with a modern Computer Assisted Language Learning Laboratory.

2. PROGRAMMES OFFERED:

Ph.D. Programme

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining and Leaving	Ph.D. Guidance	Remarks
Dr. P. S. Mangang	Professor	Ph.D.	English	01.06.2012 & Continuing	3 completed, 6 On-going	HoD
Dr. Kelvin Mutum	Assistant Professor (Adhoc)	Ph.D.	Management	01.12.2022 & 22.12.2023	NA	

4. ADMINISTRATIVE RESPONSIBILITIES HELD OR MEMBERSHIP OF COMMITTEES:

Name	Role	Duration
P. S. Mangang	Dean, Student Welfare	29.08.2023 and continuing
	Chief Warden	03.07.2023 to 04.09.2023
	Head of Department	Whole Year
	Member of Senate	23.02.2024 and continuing
	Chairman, Departmental Research Committee	Whole Year
	Chairman, Departmental Academic Committee	Whole Year
	Faculty-in-charge, Language Lab	Whole Year
	Member, Academic Programmes Committee	Whole Year
	Member, UG-PEC (Programme Evaluation Committee)	Whole Year
	Member, PG-PEC (Programme Evaluation Committee)	Whole Year

5. MEMBERSHIP OF PROFESSIONAL BODIES:

Name of Faculty	Member of
P. S. Mangang	English Literary Circle Manipur
	English Language Teachers' Association of India
	English Language Teachers' Association of India, Meghalaya Chapter

6. OUTREACH ACTIVITIES:

Name	Activities
P. S. Mangang	Member, Board of Studies, Department of English, Manipur University of Culture, Imphal
	Chairman of Doctoral Committee (DC) for 2 Research Scholars at NIT Mizoram till 13.10.2023
	External Member of Research Advisory Committee (RAC) for a Research Scholar of Tripura University

Name	Activities
	Reviewer of journals
	External Examiner, Ph.D. Thesis, for universities

7. PH.D. SCHOLARS' PROFILE:

Name	Specialization	Supervisor	Remarks
Ankita Bhowmick	Black Literature	P. S. Mangang	Pre-submission Seminar conducted
Amanda Basaiawmoit	North East Literature		Advanced Stage
Santidora Nongpluh	Gender Studies		Registration Completed
Bibiana Ryntathiang	Graphic Literature		Registration Completed
Ambika Rai	Communication		Comprehensive Cleared
Th. Ayingbi Chanu	Children's Literature		Course Work Completed

8. LIST OF PRESENTATIONS IN CONFERENCES:

- Ankita Bhowmick & Paonam Sudeep Mangang, 'Black Disabled Bodies in Select Works of Toni Morrison', 4th International ARTEMIS Congress on Humanities and Social Sciences International, Izmir, Online, 03rd to 06th June 2023.
- Ankita Bhowmick & Paonam Sudeep Mangang, 'A Critique on Women's Resistance in Toni Morrison's *Beloved* and Mahasweta Devi's *Draupadi*', 3rd International Conference on Contemporary Perspectives in English Language Literature and Cultural Studies (ICCPE-2023), Chandigarh University, 14th & 15th July 2023.
- Ankita Bhowmick & Paonam Sudeep Mangang, 'Exploration of Myths and Archetypes in Select Works of Toni Morrison', International IZMIR Congress on Humanities and Social Sciences, USA, Online, 29th to 31st July 2023.
- Ankita Bhowmick & Paonam Sudeep Mangang, 'Beauty and Disability: A Critique of Toni Morrison's *The Bluest Eye*', Conference on Interdisciplinarity (Coining New Ideas-Transcending New Horizons) COIN-2023, Disability Studies: Theory and Practice, NIT Meghalaya, 18th & 19th November 2023.

9. WORKSHOPS/CONFERENCES ORGANISED:

- Self-Sponsored 5-Day Workshop on Entrepreneurial Concepts and Skills (24th to 28th April 2023)
- COIN-2023 – Two-day National Conference on Disability Studies: Theory and Practice (18th & 19th November 2023)

10. RESOURCE PERSONS/EXTERNAL SPEAKERS/SUBJECT EXPERTS/EXTERNAL EXAMINERS INVITED:

- Prof. A. K. Mishra, Chief Coordinator (Academic), Bharatiya Bhasha Samiti, MoE, GoI, New Delhi
- Prof. Mousumi Guha Banerjee, Director & Professor, EFLU, Shillong Campus
- Dr. Rosy Yumnam, Associate Professor, EFLU, Shillong Campus
- Dr. Haobam Subrata Singh, Associate Professor, Dhanamanjuri University, Imphal
- Dr. M. Momocha Singh, Associate Professor, NIT Arunachal Pradesh
- Prof. Sukanya Sharma, Professor, IIT Guwahati
- Prof. Khagen Basumatary, Professor, Government Ayurvedic College and Hospital, Guwahati
- Prof. Vijay Kumar, North Eastern Institute of Ayurveda and Homoeopathy (NEIAH), Shillong
- Dr. Sunildro LS Akoijam, Associate Professor, NEHU, Tura Campus
- Mr. Al Fatah Nizamuddin, Advocate, Karnataka
- Mr. Akshaya Kumar Gupta, Co-Founder, Varistor Technologies Pvt. Ltd., Bangalore

11. INVITED TALKS DELIVERED:

- Panellist for a Panel Discussion on 'Technology for, in, and through Bhartiya Bhasha' on the occasion of Bharatiya Bhasha Utsav - 2023 organized by North-Eastern Hill University on 28th November 2023.
- Delivered an Invited Talk on 'Importance of Communicative Skills' at the Transitional Curriculum Programme for BAMS 1st Professional 2023-24 organized by North Eastern Institute of Ayurveda & Homoeopathy (NEIAH) on 25th November 2023.

DEPARTMENT OF MATHEMATICS

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

The Department of Mathematics was established in 2012 with the inception of National Institute of Technology Meghalaya. The department offers Ph.D. and 2 year-M.Sc. programmes in Mathematics. The department also supports all the engineering departments by offering undergraduate and postgraduate level courses in Mathematics to the B. Tech., M. Tech., and Ph.D. students over a number of semesters. The department has been organizing seminars and summer internship programs for students and research scholars. The department has at present six regular faculty members and one adjunct professor. The faculties are actively engaged in research, teaching, training and administrative works. The main objective of the department is to attract the students of science and engineering, and to provide them academically coherent programmes, with courses that range from the fundamental to the advanced. The department has a FIST sponsored mathematics laboratory with computers, workstation equipped with software such as MATLAB, MATHEMATICA, etc. to facilitate faculty, students for their research and laboratory-oriented courses.

2. PROGRAMMES OFFERED:

- 2-YEAR M. SC. PROGRAMME
- Ph. D. Programme

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance
Dr. Saikat Mukherjee	Assoc. Professor	Ph.D.	Functional Analysis	25-07-2013	1 completed and 02 ongoing
Dr. Tikaram Subedi	Asst. Professor	Ph.D.	Abstract Algebra	01-06-2012	01 completed, 01 submitted and 01 ongoing
Dr. Manideepa Saha	Asst. Professor	Ph.D.	Linear Algebra	22-07-2013	03 completed (01 as Co-supervisor and 02 as sole supervisor), 01 submitted 03 ongoing,
Dr. Bidasagar Kumbhakar	Asst. Professor	Ph.D.	Fluid Dynamics	20-07-2015	03 completed 01 ongoing
Dr. Adarsha K. Jena	Asst. Professor	Ph.D.	Statistics	01-10-2019	01 ongoing
Dr. Timir Karmakar	Asst. Professor	Ph.D.	Fluid Dynamics	27-01-2020	1 ongoing

4. LIST OF PUBLICATIONS:

a. Journals:

1. Sanchita Pramanik and Timir Karmakar (2024). Couette-Poiseuille Flow of Variable Viscosity in a Multilayered Channel Partially Filled With a Homogeneous Anisotropic Porous Layer: Role of The Glycocalyx in Attenuating Shear Stress on Endothelial Cells, *Physics of Fluids* (American Institute of Physics), 36, 033615.
2. **Timir Karmakar**, Meraj Alam, Motahar Reza and G. P. Raja Sekhar (2023). Couette-Poiseuille Flow in a Fluid Overlying an Anisotropic Porous Layer, *Computers and Mathematics with Applications* (Elsevier), 151, 346-358.
3. Abdush Salam Pramanik, Bibaswan Dey, **Timir Karmakar** and Kalyan Saha (2023). Two-phase Modeling of Fluid Injection Inside Subcutaneous Layer of Skin, *International Journal of Engineering Science* (Elsevier), 192, 103935, <https://doi.org/10.1016/j.ijengsci.2023.103935>.
4. Osamu Sano, **Timir Karmakar** and G. P. Raja Sekhar (2023). Viscous flow around three-dimensional macroscopic cavities in a granular material: asymptotic theory for two sufficiently distant spherical cavities of arbitrary configuration, *Journal of Fluid Mechanics* (Cambridge University Press), 964, A6.
5. Aritra Narayan Hisabia and **Manideepa Saha**, Semipositivity of matrices with respect to the Lorentz cone, *Electronic Journal of Linear Algebra*, Vol. 39 (2023), 644-660, doi:10.13001/ela.2023.7777
6. Ashif Mustafa and **Manideepa Saha**, A two-dimensional

- randomized extended Gauss-Seidel algorithm, Numerical Algorithms,(2023), <https://doi.org/10.1007/s11075-023-01661-3>
7. Jahnabi Chakravarty and **Manideepa Saha**, Generalized interval AOR method for solving interval linear equations, Mathematical Foundation of Computing, (2023), doi: 10.3934/mfc.2023035
 8. Aritra Narayan Hisabia and **Manideepa Saha**, Algebraic and Geometric Properties of L_n^+ -semipositive matrices and L_n^+ -semipositive cones, Linear Algebra and its Applications, Vol. 672 (2023), 210-227
 9. S. Nandi, **B. Kumbhakar** and G. S. Seth, Hall and Ion Slip Effects on Rotating Casson Nanofluid Flow Past a Deformable Sheet with Multiple Slips and Activation Energy: Modern Impressions of Non-linear Radiation and Convection, *Int. J. Appl. Comput. Math.*, 10:65, DOI: 10.1007/s40819-024-01691-y, 2024.
 10. T. Siva, S. Jangili and **B. Kumbhakar**, A theoretical analysis of rotating electromagnetohydrodynamic and electroosmotic transport of couple stress fluid through a microchannel, *Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM)*, e202300636, DOI: <https://doi.org/10.1002/zamm.202300636>, 2024.
 11. S. Nandi and **B. Kumbhakar**, Computational analysis of hybrid nanoliquid flow over an exponentially elongating sheet influenced by oblique Lorentz force with viscous-Joule dissipation: Role of nanoparticle shape factor, *Numerical Heat Transfer, Part A: Applications*, DOI: <http://dx.doi.org/10.1080/10407782.2023.2277822>, 2023.
 12. **B. Kumbhakar** and S. Nandi, Effectiveness of Stefan blowing on MHD slip flow of Prandtl-Eyring nano-fluid over an elongating sheet with activation energy and viscous-Ohmic dissipation, *Int. J. Mod. Phys. C*, DOI: <https://doi.org/10.1142/S0129183124400047>, 2023.
 13. **Tikaram Subedi** and Debraj Roy, Revisiting J-semicommutative rings, Accepted in Indian Journal of Pure and Applied Mathematics (doi: <http://dx.doi.org/10.1007/s13226-024-00562-y>)
 14. Sanjiv Subba, **Tikaram Subedi** and Ardeline M. Buhphang, Pointwise semicommutative rings, *Mathematical Notes*, 114(6)(2023), 1350-1357
 15. Sanjiv Subba and **Tikaram Subedi**, NJ-semicommutative rings, *Miskolc Mathematical Notes*, 24 (3), (2023), 1569-1579
 16. Debraj Roy, Sanjiv Subba and **Tikaram Subedi**, Domain Property of rings relative to Jacobson radical, *Annali Del Universita Di Ferrara*. 69 (2023),195-202

b) Book Chapters:

1. **Bidyasagar Kumbhakar**, Manik Das & Jagdev Singh, A computational investigation of the characteristics of velocity slips and convective boundary conditions in Maxwell nanofluid flow over a permeable stretching surface with activation energy, *Advances in Mathematical Modelling, Applied Analysis and Computation*, Springer, 138-154, ISBN: 978-3-031-29959-9, 2023.

5. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED BY FACULTY MEMBERS:

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Dr. Saikat Mukherjee	International Conference on the History of Mathematics(ICHM)-2023-24 held at IIT Guwahati	January 19-21, 2024
		One-Day Workshop on “National Education Policy 2020” organized by NIT Meghalaya	December 11, 2023
2	Dr. Tikaram Subedi	One-Day Workshop on “National Education Policy 2020” organized by NIT Meghalaya	December 11, 2023
3	Dr. Manideepa Saha	38th Annual Conference of the Ramanujan Mathematical Society, Dept. of Mathematics, IIT Guwahati,	December 22-24, 2023
		International Conference on the History of Mathematics(ICHM)-2023-24 held at IIT Guwahati	January 19-21, 2024
		One-Day Workshop on “National Education Policy 2020” organized by NIT Meghalaya	December 11, 2023

Sl. No.	Name of Faculty	Name of the programme attended	Duration
4	Dr. Bidyasagar Kumbhakar	5-Day International FDP on “Recent Advances in Mathematical Modelling and Optimization” organized by Department of Mathematics, CSSR & SRRM Degree & PG College, Kamalapuram, Andhra Pradesh	January 08-12, 2024
		International Workshop on “Virtual Element Analysis (VEM): Scientific Computation and Applications” organized by Vellore Institute of Technology, Vellore	January 10-12, 2024
		One-Day Workshop on “National Education Policy 2020” organized by NIT Meghalaya	December 11, 2023
5	Dr. Adarsha Kumar Jena	One-Day Workshop on “National Education Policy 2020” organized by NIT Meghalaya	December 11, 2023
6	Dr. Timir Karmakar	One-Day Workshop on “National Education Policy 2020” organized by NIT Meghalaya	December 11, 2023

6. INVITED TALKS DELIVERED:

1. Dr. Manideepa Saha delivered a talk “On Lorentz Cone Semipositivity of Matrices” on 38th Annual Conference of the Ramanujan Mathematical Society, December 22-24, 2023, at Department of mathematics, IIT Guwahati

7. PROJECTS

a. Sponsored Project

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Modeling of endothelial glycocalyx (EGL) and transport of low-density lipoprotein (LDL) in artery: anisotropic porous medium approach	Dr. Timir Karmakar	SERB-DST	13,73,372	2 Years	Completed

8. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. Saikat Mukherjee	Dean, Academics	01.09.2023- 04.03.2024
2	Dr. Manideepa Saha	Professor in Charge, Centre of International Relations	Full year
3	Dr. Bidyasagar Kumbhakar	Warden, Polo Boys’ Hostel	01/07/2023- till date
		Convener, Hostel Patrolling Committee	20/09/2023- till date
		Member Secretary, Anti-Ragging Squad Committee	05/09/2023- till date
4	Dr. Adarsha Kumar Jena	Head, Department of Mathematics	01.07.2023- Till Date
5	Dr. Tikaram Subedi	Chairman, time table committee	01/07/2023 -15/05/2024
		Convenor, Examination Malpractice Committee	Full year
		Member CPDA Committee	Full Year

9. MEMBERSHIP OF PROFESSIONAL BODIES:

Sl. No.	Name of Faculty	Member of
1	Dr. Saikat Mukherjee	• Society for Industrial and Applied Mathematics (SIAM), • American Mathematical Society (AMS), • Indian Mathematical Society (IMS).
2	Dr. Manideepa Saha	• Society for Industrial and Applied Mathematics (SIAM), • SIAM Activity Group on Linear Algebra, • American Mathematical Society (AMS), • Indian Mathematical Society (IMS). • Ramanujan Mathematical Society (RMS)

Sl. No.	Name of Faculty	Member of
3	Dr. Bidasagar Kumbhakar	- Indian Society of Theoretical and Applied Mechanics (ISTAM) - Society of Applied Mathematics, IIT(ISM) Dhanbad - Indian Mathematical Society (IMS) - Indian Science Congress Association (ISCA)
4	Dr. Timir Karmakar	- Indian Society of Theoretical and Applied Mechanics (ISTAM) - Indian Mathematical Society (IMS)
5	Dr. Adarsha Kumar Jena	- Indian Mathematical Society (IMS) - International Indian Statistical Association (IISA)

10. LIST OF ACHIEVEMENTS AND ACTIVITIES DURING THE YEAR

2023-24:

- Dr. M. Saha has organized 5th Research Conclave, NIT Meghalaya, as one of the conveners, during February 28-29, 2024.
- Dr. M. Saha has organized a permanent campus tour for the M.Sc. and Ph.D students of the department of mathematics on October 7, 2024.
- Dr. M. Saha assisted in organizing "Institute Day 2024" as Convener of the "Certificate & memento design"
- Dr. M. Saha conducted monthly visits to Girls' hostels as the Chairperson of Hostel Inspection Committee (for Girls' Hostels) during February 2023 to August 2023.
- Dr. M. Saha looked after the seating arrangement of Faculties, Trainee Teachers, Adhoc Faculties, being Convenor of Seating arrangement Committee, during February 2023 to August 2023.
- Dr. S. Mukherjee was the Organizing Chair of Institute Day 2023 held on 01.04.2023.
- Dr. B. Kumbhakar conducted regular visits to the hostels as a Convener of the Hostel Patrolling Committee.
- Dr. B. Kumbhakar conducted regular visits to the hostels of 1st year students as a Member Secretary of the Anti-Ragging Squad Committee.
- Suman Dowerah received the Best Paper Presentation Award in the 3rd International Conference on Nonlinear Applied Analysis and Optimization (ICNAAO 2023) organised by the Department of Mathematics, National Institute of Technology Durgapur during 08-10 December, 2023, for her paper with the title "Almost phase retrieval and phase retrieval with respect to erasures".
- Suman Dowerah presented a paper titled "Almost phase retrieval" in the 5th International Conference on Mathematical Techniques and Applications (ICMTA-2024) organized by Department of Mathematics, SRM IST, Kattankulathur, Tamil Nadu, India-60303 during 02-04 January, 2024.
- Suman Dowerah presented a paper titled "Weaving phase retrieval sequences" in the National Conference on Mathematics and its Applications-II 2023 (NCMA-II) held during 07-08 November, 2023. The conference was organized by Department of Mathematics, Cotton University, Guwahati, Assam.
- Sanchita Pramanik presented a paper titled "Flow analysis in a multi-layered channel partially filled with a homogeneous anisotropic porous layer: Understanding shear stress distribution on glycocalyx" in the International Seminar on Topology, Algebra and Applications (ISTAA-2024) during March 12-14, 2024. The seminar was organized by the Department of Mathematics, University of North Bengal (NBU), West Bengal, India.

11. ANY OTHER NOTABLE INFORMATION:

- Five Ph.D. students graduated during 2023-24: two Ph.D. students under Dr. Manideepa Saha, one PhD student under Dr. Saikat Mukherjee, and two PhD students under Dr. Bidasagar Kumbhakar.

12. DEPARTMENT ACTIVITIES IN PHOTOGRAPHS:



DEPARTMENT OF PHYSICS

1. BRIEF INTRODUCTION TO THE DEPARTMENT:

The Department of Physics was established in 2012 and comprised 6 faculty, 2 non-teaching staff members, and 22 Ph.D. scholars. The Department of Physics, with its induction, has evolved by offering two years full-time M.Sc Physics program. The department has also progressed in furnishing the Doctor of Philosophy program, and so far, the degree has been awarded to 7 nos. of aspirants. In addition, the department supports the engineering branches of the institute by floating the foundation courses for B.Tech (1st year) and advanced science electives courses like Quantum Computing and Nanoelectronics. The DST supports the department under the FIST Scheme,

Government of India. Under this scheme, the Department has developed sophisticated instruments like RF/DC sputtering and Raman spectroscopy at the NITM Sohra campus with a class 100 clean room facility. Faculty members working within Theory and Experimental Condensed Matter Physics, Applied Optics, Nuclear & Particle Physics, and Smart Materials. The department has over 200 peer-reviewed articles and 11 projects from various funding agencies.

2. PROGRAMMES OFFERED:

- Master of Science (Physics)
- Doctor of Philosophy (Physics)

3. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. guidance
Prof. Ayon Bhattacharjee	Professor	PhD	Experimental Condensed Matter Physics	24 July 2013	6 ongoing, 10 awarded
Dr. Arpita Nath	Associate Professor	PhD	Laser Matter Interaction	03 October 2013	3 Ongoing, 1 awarded
Dr. K. Senthilkumar	Associate Professor	PhD	Solar Cell, DFT, Ion Beam modification of the materials	14 July 2015	4 Ongoing, 1 awarded
Dr. Tribedi Bora	Assistant Professor	PhD	Experimental Condensed Matter Physics	06 July 2015	3 ongoing, 1 awarded
Dr. W. L. Reenbohn	Assistant Professor	PhD	Nonequilibrium Statistical Mechanics	02 November 2015	3 Ongoing
Dr Alekha. C. Nayak	Assistant Professor	PhD	Particle Physics, Astroparticle Physics	16 October 2019	3 Ongoing

4. LIST OF PUBLICATIONS:

1. Pranamee Baruah, Arindom Phukan, Susmita Sharma, Arpita Nath, "Laser induced breakdown spectroscopy for strength assessment in Ca binded soils", *Spectrochimica Acta Part B: Atomic Spectroscopy*, 206,106726, 2023.
2. Sanchia Mae Kharphanbuh and Arpita Nath, "Laser-Induced Plasma and Cavitation Bubble Dynamics at Manganese-Water Interface Under External Electric Fields," *IEEE Transactions on Plasma Science*, 52, 300-309, 2024.
3. Sanchia Mae Kharphanbuh, Prahlad K. Baruah, Alike Khare and Arpita Nath, "Bubble-assisted microstreaming during electrode deposition of Mn_2O_3 energy harvesters", *Physical Chemistry Chemical Physics*, 26, 13973-13978, 2024.
4. S. Sarmah, D. Maji, S. Ravi, T. Bora, Effect of Cr^{3+} substitution on the magnetic and dielectric properties of cobalt ferrites, *Journal of Alloys and Compounds* 960, 170589, 2023.
5. E. Ahmed and K. Senthilkumar, A First Principle +U Correction to the Investigation of Intrinsic Vacancy and Zinc Vacancy-Cluster Induced Magnetism in w-ZnO, *Phys. Scr.* 98 (2023) 125986.
6. D Bhattacharjee, PR Alapati, A Bhattacharjee, Comparative studies of DFT and experimental Raman spectra of pure 5O. 14 liquid crystalline compound, *Liquid Crystals* 50, 1883, 2023
7. Adrish Chakraborty, Ayon Bhattacharjee and Debanjan Bhattacharjee, Quantum Mechanical Density Functional Approach for the Studies of Nonlinear Optical and Reactivity Parameter of 5O.5 Liquid Crystal, *NanoWorld J* 9(S5): S227-S230 2023.
8. SP Choudhury, N Sharma, BB Narzary, N Kumari, PK Sarkar, Ayon Bhattacharjee, Optical, Impedance, and DFT Study of Ternary SnO_2 -Fe-Cu Nanoparticles, *ECS Journal of Solid State Science and Technology* 12 (10), 103013, 2023.

5. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED (FACULTY):

Sl. No.	Name of Faculty	Name of the programme attended	Duration
1	Dr. Alekha C. Nayak	Cabibo@60	15 th -16 th March 2024

6. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED (STUDENTS):

Sl. No.	Name of Student	Name of the programme attended	Duration
1	Onus Manner	The 2023 Around-the- Clock Around-the-Globe Magnetism Conference (ATCATG) organized by IEEE Magnetism Society (Online Mode)	7 th September 2023
		Q- MAT 2023 organized by NISER Bhubaneswar	27 th – 30 th November 2023
		ICMAGMA 2023 organized by Magnetic Society of India	4 th – 6 th December 2023
2	Dhiraj Sarma	Workshop on Neutron and Muon Spectroscopy organized by IIT Guwahati	16 th -17 th February 2024
		Workshop on Deep Learning and Application organized by NIT Meghalaya	26 th February – 1 st March 2024
3	Pallavi Saha	Workshop on Deep Learning and Application organized by NIT Meghalaya	26 th February – 1 st March 2024
4	Esha Lyngdoh		
5	Sanchia Mae Kharphanbuh		
6	Rimpee Kumari Sah	National Conference on Current Trends in Basic Sciences and its Applications 24, organized by Tinsukia College	22 nd -23 rd January 2024
7	Shibsankar Si	Advanced 21-cm Cosmology School and Workshop organized by The Department of Atomic Energy (DAE), Govt. of India.	11 th –21 st December 2023
8	Vivekananda Mahapatra	Advanced 21-cm Cosmology School and Workshop organized by The Department of Atomic Energy (DAE), Govt. of India.	11 th –21 st December 2023
		Tensor Computation and Machine Learning, organized by Department of Computation and Data Science, Indian Institute of Science, Bengaluru	17 th – 18 th November 2023
9	Adrish Chakraborty	Advanced materials for better tomorrow -2023 organized by BHU	10 th -13 th December 2023
10	Rudra	Workshop on Neutron Scattering (Elastic and Inelastic) and Muon Spectroscopy organized by IIT Guwahati	16 th -17 th February 2024
11	Dipta Suryya Mahanta		

7. INVITED TALKS DELIVERED:

- Imprints of Dark matter on 21 cm line in Cosmic Dawn era, Invited talk at Govt. Women's College, Keonjhar, 2nd January 2024 by Dr. Alekha C. Nayak
- Imprints of Dark matter on 21 cm line in Cosmic Dawn era, Cabibi@60, Central University, Karnataka, 16th March 2024 by Dr. Alekha C. Nayak

8. CONFERENCES / WORKSHOPS/ INVITED TALKS ORGANIZED:

- Invited talk by Prof. S.Basu, IIT Guwahati
Title: Fractals and phase transitions on 7th November 2023
- Invited talk by Prof. A. Taraphder, IIT Kharagpur
Title: Beyond the single particle – emergence in condensed matter on 14th December 2023

9. PROJECTS:

Sl. No.	Title of the Project	Investigators (P.I. / Co P.I)	Funding Agency	Funding amount	Duration	Status
1	Bound on sterile neutrino decay width and mixing angle with active neutrino using global 21-cm absorption signal, SERB- DST, (SRG/2021/002291)	Dr Alekha C. Nayak	DST-SERB	1127522 /-	2 years	Ongoing
2	Photocurrent performance of ion implanted Iron Pyrite (FeS_2) thin film as hole transport layer for the CZTS based solar cell	Dr. K. Senthilkumar	IUAC	10,50,000/-	3 years	Ongoing
3	Fabrication of 2D Materials for Energy Harvesting Devices	Dr. K. Senthilkumar [Project coordinator]	DST-FIST	Rs. 160 Lakes	5-years	Ongoing
4	Transport of a dimer in an inhomogeneous ratchet with spatially varying friction coefficient	Dr. W. L. Reenbohn	DST - SERB	35,03,791	3 years	Ongoing
5	Studies on Orthoconic Antiferroelectric liquid crystals	Prof. A Bhattacharjee	DST - SERB	20,0208/-	3 years	Completed
6	Lab in a Shoebox	Prof. A Bhattacharjee	DIC	110000/-	1 year	Completed
7	A study SnO2 nanoflakes doped liquid crystals	Prof. A Bhattacharjee	TEQIP Minor Project	195000/-	2 years	Completed
8.	Fluid Dynamical Aspects in nucleation of laser produced nanoparticles in liquids	Dr. Arpita Nath	DST-SERB-ECR	Rs 5166893/-	3 year	Completed
9.	Exploring High Density Magnetic Medium in Nanocrystalline Spinel Ferrites for Magnetic Recording System	Dr. Tribedi Bora	DST-SERB		3 years	Completed
10.	Surface Waves from Electric Spark Generated Bubbles	Dr. Arpita Nath	TEQIP Minor Project	190000/-	2 years	Completed
11.	Defect induced electron-phonon interaction in ZnO nanoparticles	Dr. K. Senthilkumar	UGC-DAE Consortium for Scientific Research	175000/-	3 years	Completed

10. STUDENT AWARDS WON/ RECOGNITION RECEIVED AT THE NATIONAL AND INTERNATIONAL LEVEL:

Rimpee Kumari Sah received Best paper presentation award on the topic 'Texture analysis of Orthoconic Antiferroelectric Liquid Crystals using Polarizing Optical Microscopy' in National Conference on Current Trends in Basic Sciences and its Applications 24 organized by Tinsukia College, Assam during 22nd -23rd January 2024.

11. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl. No.	Name of Faculty	Responsibilities	Duration
1	Dr. Alekha C. Nayak	a) Warden Umpling Boys Hostel, b) Faculty in charge of Literary Club c) Astronomy Club	July 2021 to till date July 2022 to till date January 2023 to till date
2	Dr. Arpita Nath	Chairman, Library Committee	September 2023 to till date
3	Dr. Tribedi Bora	Convener, Institute Complaints Committee	1 st July to till date
		Head, Department of Physics	1 st July 2023 to till date
4	Dr. K. Senthilkumar	Head, Department of Physics	July 2022 to June 2023
5	Prof. A. Bhattacharjee	Dean, Faculty Welfare	July 2020 till date

12. MEMBERSHIP OF PROFESSIONAL BODIES:

Sl. No.	Name of Faculty	Member of
1	Dr. Tribedi Bora	a. Magnetic Society of India-Life Member b. Physics Academy of the North East-Life Member
2	Dr. K. Senthilkumar	a. Energy Science Society of India (ESSI) 0309201301L
3	Dr. Arpita Nath	a. Plasma Science and Society of India (PSSI) b. Indian Society of Atomic and Molecular Physics (ISAMP)
4	Dr Ayon Bhattacharjee	a. IEEE b. Indian Liquid Crystal Society c. International Liquid Crystal Society

13. ANY OTHER NOTABLE INFORMATION (INCLUDING JOURNAL REVIEWER):

- Dr. Alekha C. Nayak:** Reviewer for Proceedings of the Royal Society A, International Journal of Modern Physics A
- Dr. Arpita Nath :** Reviewer for Applied Surface Science , Heliyon, Journal of Manufacturing Processes, Journal of the Taiwan Institute of Chemical Engineers ,Matter ,Optics Express, Ocean Engineering, Optics and Lasers in Technology, Physica Scripta
- Dr. Tribedi Bora:** Reviewer for Materials Letters, Materials Today Communications, Materials Today Proceedings.
- Dr. K. Senthilkumar:** Reviewer for Acta Crystallographica Section B, Journal of Sol-Gel Science and Technology, Journal of Raman Spectroscopy. Acting as a reviewer of the grant proposal: National Science Center, Poland
- From the Department of Physics, two research scholars namely Sikha Sarmah (P17PH001) and Arindom Phukan (P18PH001) has been awarded as Doctor of Philosophy.

14. DEPARTMENTAL ACTIVITIES (IN PHOTOGRAPHS):





COMPUTER CENTRE

BRIEF INTRODUCTION TO COMPUTER CENTER

The Computer Centre at NIT Meghalaya is a vital part of the institute. It provides technical services and e- services to all users such as departments, sections, students and research scholars. The Computer Centre plays a vital role in providing the internet facilities, services such as Google Meet and Microsoft Teams and other services, have made it possible for the institute to continue its academic activities, including, online tests, online admissions and recruitment process. The Computer Centre also provides VPN connections for research scholars to work remotely from home/hostels.

The Computer Centre has High Performance Computing resources that have been installed at NIT Meghalaya have proven beneficial for the scholars whereby they can submit their jobs and at the same time get the results in less time instead of using their own workstation that has less computational power.

Progress has been made in the ICT infrastructure at Sohra, including the completion of tasks such as laying fiber cables along the boundary wall and establishing building-to-building connectivity using UTP cabling with rack installation and internet connection.

Network and Connectivity:

The Centre manages the campus network and provides intra-campus connectivity through high-speed fiber links to all hostels over Shillong city. The total bandwidth capacity of 1Gbps has been maintained by NKN (National Knowledge Network) through the underlying network of BSNL and a redundant link of 100 Mbps through Powergrid.

Facility Management:

It manages central computing facilities including the campus network, central host servers, computing facilities like computers in the centre. It also carries out assessment of facilities, both software and hardware, based on the needs of its users, and makes recommendations for new facilities as necessary for the enhancement of the existing facilities.

Staff and Faculty Recruitment:

The Centre has successfully developed and hosted the staff and faculty recruitment portal online, inhouse and every technical support has been extended towards the recent recruitment process.

Student Results Declaration Portal:

The Centre has developed and hosted the automated students results portal declaration by the Academic Section. This portal aims to streamline the process of releasing and accessing student results, ensuring efficiency and accuracy

Administrative Data Processing Systems:

It provides infrastructure and technical support for the maintenance of all electronic data processing systems used in administrative offices and departments. Some of the Office Management tools which has enhance collaboration and automate the workload are provided by the centre are:

Microsoft Office 365: Microsoft Office 365 is a suite of productivity apps that includes Word, Excel, PowerPoint, Outlook, and OneNote.

Google Workspace: Google Workspace is a suite of productivity apps that includes Gmail, Docs, Sheets, Slides, and Calendar.

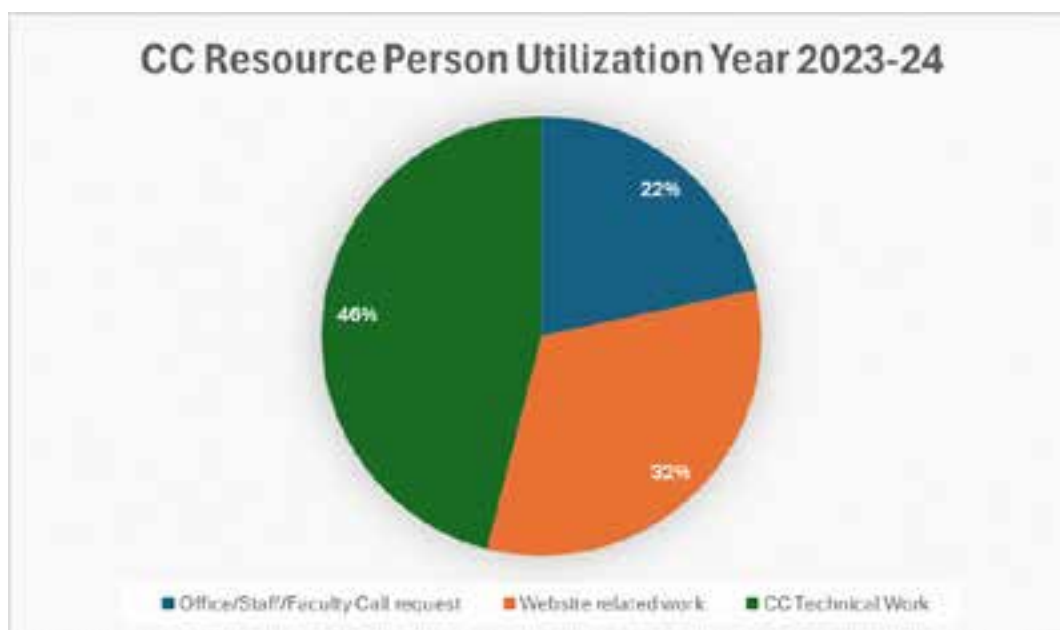
Time tracking software: Time tracking software helps to track student time and attendance.

File Management Software: For overall tracking the lifecycle of any file submitted at the concerned section.

Learning, Teaching and Research:

Many educational packages and computer-aided learning software are used to enhance the learning capabilities of the students through online mode and delivering lectures and conducting interviews.

The pie chart below represents the Computer Centre manpower resource utilization for the year 2022-23.



STAFFS

Sl. No.	Name	Designation
1	Dr. Akhilendra Pratap Singh	Professor-In-Charge
2	Medarisha H. Thangkhiew	Technical Assistant
3	Bandonlang Wahlang	Technical Assistant
4	Arkinsan Wankhar	Technical Assistant
5	Michael Wattre Sangma	Technical Assistant
6	Marveen Rangslang	Technician
7	Ts Thotdharrin Damian	Technician
	Pynshngainlang Tariang	Laboratory Attendant

(old data) The Computer Centre at NIT Meghalaya is a vital part of the institute. It provides support to all departments and sections, and it offers technical services to all users. The Computer Centre's internet facilities, such as Google Meet and Microsoft Teams, have made it possible for the institute to continue its academic activities, including interviews, online tests, and online admissions. The Computer Centre also provides VPN connections for research scholars to work remotely from home.

A workshop was held for postgraduate students and research scholars at the National Institute of Technology Meghalaya to teach them about parallel computing. The workshop was conducted using the High Performance Computing resources that had been installed at NIT Meghalaya. The workshop covered the basics of parallel computing, as well as how to use MATLAB for parallel computing. The workshop was a success, and the participants learned a lot about parallel computing and MATLAB. Also, a 1(One) Day workshop on Microsoft Office Tools has been organized by the Microsoft team and the Computer Centre to all the staff/faculties and students of NIT Meghalaya.

A new Smart Data Centre using the state of the art technologies for monitoring and secured network infrastructure has been inaugurated at NIT Meghalaya Permanent campus which will be able to host all the institute servers. The data center is designed by efficiently integrating power and distribution systems, thermal management, security, IT management, and other critical components.



Image: New Data Centre at Sohra Campus

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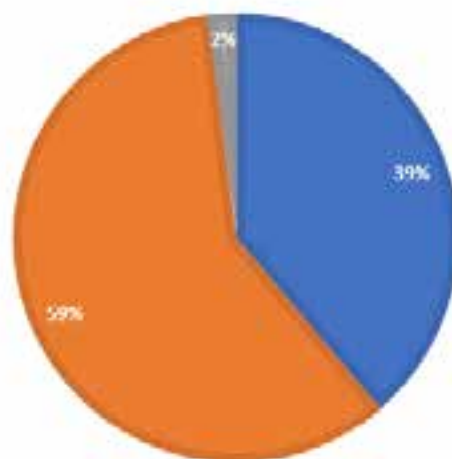
Learning, Teaching and Research:

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The pie chart below represents the Computer Centre manpower resource utilization for the year 2022-23.

CC RESOURCE PERSON UTILIZATION YEAR 2022-2023

■ Office/Staff/Faculty call request ■ Website related Work ■ CC Technical work



STAFFS

1	Medarisha H. Thangkhiew	Technical Assistant
2	Bandonlang Wahlang	Technical Assistant
3	Arkinsan Wankhar	Technical Assistant
4	Michael Wattre Sangma	Technical Assistant
5	Marveen Rangslang	Technician
6	Ts Thotdharrin Damian	Technician
7	Pynshngainlang Tariang	Laboratory Attendant

CENTRAL INSTRUMENTS FACILITY (CIF)

1. BRIEF INTRODUCTION TO THE CIF

The quality and high-end research is greatly hindered due to insufficient facilities presently available at the institute for conducting experimental and characterization works for different departments. Our faculties and students are taking help from the facilities at IITs and CSIR laboratories located in far off distance. Many times, it is not possible due to multifarious unavoidable reasons. Keeping these issues in mind, the institute has established a Central Instruments Facility (CIF) within the workshop building in the permanent campus with necessary high-end research tools and equipments (e.g. Powder X-Ray Diffractometer, Fatigue Fracture Testing Machine, Field Emission Scanning Electron Microscopy [FESEM], Metallic 3D printer etc) for carrying out quality research and consultancy work in the premises of the institute itself at the Permanent Campus at Sohra. Considering the increasing numbers of the faculty members, research scholars and the students who are aggressively engaged in their research works, the CIF has been built up in 2021 and the same was inaugurated on April 01, 2022 by the Director of the institute.

2. FACULTY PROFILES (CIF CORE TEAM MEMBERS AND INSTRUMENT-IN-CHARGE)

Name	Designation/ Responsibilities	Qualification	Specialization
Dr. Atanu Singha Roy (Dept. of Chemical and Biological Sciences)	Associate Professor (CIF Chairman)	Ph.D.	Biophysical Chemistry, Quantum Dots and Nanomaterials, Hydrogel for Drug-Delivery, Protein Biochemistry
Dr. Bikash Kumar Sarkar (Dept. of Mechanical Engineering)	Associate Professor, Faculty-in-Charge of Metal 3D printer, PIC Center of Robotics and Mechatronics (CIF Core Team Member)	Ph.D.	Hydraulic system and control, Mechatronics and Robotics
Dr. Dibyendu Adak (Dept. of Civil Engineering)	Assistant Professor, Faculty-in-Charge of FESEM instrument (CIF Core Team Member)	Ph.D.	Structural Engineering
Dr. Shubhankar Majumdar (Dept. of Electrical and Communication Engineering)	Assistant Professor, Faculty-in-Charge of Electrochemical Workstation (CIF Core Team Member)	Ph.D.	RF, High Speed and Power, Semiconductor Devices, VLSI circuit design and Modeling, Low cost Energy efficient system for Agriculture & Health Sector
Dr. K. Senthilkumar (Dept. of Physics)	Associate Professor (CIF Core Team Member)	Ph.D.	DFT, Semiconductor Defects, Heterojunction Solar Cell.
Dr. Adarsha Jena (Dept. of Mathematics)	Assistant Professor (CIF Core Team Member)	Ph.D.	Statistics
Dr. Ksh Milan Singh (Dept. of Electrical Engineering)	Assistant Professor (CIF Core Team Member)	Ph.D.	Digital Signal Processing, Ultrasonic Vibration Measurement
Dr. Akhilendra Pratap Singh (Dept. of Computer Science and Engineering)	Assistant Professor (CIF Core Team Member)	Ph.D.	Service Oriented Network, Architecture, Computer Network, Wireless Sensor, Network
Dr. Gitish K. Dutta (Dept. of Chemical and Biological Sciences)	Associate Professor (Dean RC), Faculty-in-Charge of PXRD instrument	Ph.D.	Organic and Hybrid Materials
Dr. Kishore Debnath (Dept. of Mechanical Engineering)	Associate Professor Faculty-in-Charge of FFTM instrument	Ph.D.	Processing of Composite Materials
Dr. Biplab Debnath (Dept. of Mechanical Engineering)	Assistant Professor Faculty-in-Charge of Gas Chromatography (GC)	Ph.D.	Thermal Engineering, Alternative Fuels, Diesel Engine
Dr. Susmita Sharma (Dept. of Civil Engineering)	Assistant Professor Faculty-in-Charge of Atomic Absorption Spectroscopy (AAS)	Ph.D.	Geomaterials Characterization, Soil-contaminant interaction, Biogeotechnology, Ground Improvement Technique, Water pollution and treatment, Valorization of Waste

3. TECHNICAL ASSISTANT DETAILS

Name	Designation/ Responsibilities	Qualification
Mr. Souradeep Bhowmick (Dept. of Mechanical Engineering)	Technical Assistant	B.E. in Mechanical Engineering
Balateiskhem Syiemlieh (Dept. of Chemical and Biological Sciences)	Technical Assistant	M.Sc. Chemistry

4. LABORATORY SET UP COMPLETED TILL DATE

- Powder XRD
- FESEM with EDX
- Metal 3d Printer
- AAS Spectrophotometer
- Electrochemical Workstation
- Servo Hydraulic FFTM
- Gas Chromatography

5. FUTURE PLAN

The Committee is planning to install the following instruments in near future in the CIF Laboratories:

- Rheometer
- BET Surface Analyzer
- TGA-DSC-DTA
- Transmission Electron Microscope (TEM)
- Particle Size Analyzer and DLS
- Isothermal Calorimeter (ITC)
- GC-MS (only the MS attachment)

6. REVENUE GENERATED DURING APRIL 2023- MARCH 2024: |

NR 86,454/- (EXTERNAL AND INTERNAL SAMPLES)

7. REPRESENTATIVE PUBLICATIONS FROM CIF NITM FACILITIES (INTERNAL USERS ONLY)

Title of the paper	Author(s)	Journal Name (with Publication Agency)	Vol, Year, Page	Facility used
CdSe Core and CdSe@ ZnSe Core–Shell QDs Decorated with Human Serum Albumin: Deciphering the Antimicrobial Properties and Sensing of Mercury Ion	Mahabul Haque, Amarjyoti Mondal, Sona Lyndem, Dipak Chamlagai, Atanu Singha Roy*	ACS Applied Nano Materials (ACS)	7, 2024, 7453-7464	PXRD
A protein-based self-healing hydrogel for prolonged antimicrobial drug delivery with synergistic activity	Amarjyoti Mondal, Smarak Islam Chaudhury, Sona Lyndem, Subinoy Rana, Dasuklang Lyngdoh Nongbri, Kripamoy Aguan, Atanu Singha Roy*	New Journal of Chemistry (RSC)	48, 2024, 4865-4879	FESEM
Construing the Interactions of Coumarin Derivatives with the Main Protease of Stomach Pepsin Using Spectroscopic and Computational Analyses: Insights into the Binding Thermodynamics, Anti Fibrillation Studies, and Enzymatic Assay	Sadia Nudrat, Sankar Maity, Shivam Khare, Kalpana Kumari, Madhurima Jana, Atanu Singha Roy*	ACS Food Science and Technology (ACS)	4, 2024, 245-262	FESEM
Interactions of Turmeric- and Curcumin-Functionalized Gold Nanoparticles with Human Serum Albumin: Exploration of Protein Corona Formation, Binding Thermodynamics, and Antifibrillation Studies	Kakali Baruah, Ajit Kumar Singh, Kalpana Kumari, Dasuk Lyngdoh Nongbri, Anupam Nath Jha*, Atanu Singha Roy*	Langmuir (ACS)	40 (2), 2024, 1381–1398	PXRD and FESEM
Optimization of Activator Concentration for Graphene Oxide-Based Alkali-Activated Binder	D. F. Marbaniang, A. Kar, D. Adak, K. K. Ramagiri, D. Srinivas, and I. Ray	ACI Materials Journal	120(3), 2023, 57-72	PXRD and FESEM

CENTRE FOR INNOVATION INCUBATION AND ENTREPRENEURSHIP

Professor in Charge: Dr Naba Kamal Nath

(1) The Institution's Innovation Council (IIC) organized the first council meeting on 11 th March 2024



(2) The Institution's Innovation Council (IIC) organized a brainstorming session on 28th March 2024. This program aimed to provide information about innovation and entrepreneurship to the students and faculties of NIT Meghalaya.



- (3) NIT Meghalaya has sponsored an event organized by the Centre for Technology Application and Reach (NECTAR) viz. North East Start Up and Entrepreneurs Conclave on March 27 and 28, 2024 where the prototypes and models developed by the Design Innovation Centre and students faculties of NIT Meghalaya were displayed.



CENTRE FOR INTERNATIONAL RELATIONS

1. BRIEF INTRODUCTION TO THE CENTER:

The Center for International Relations at NIT Meghalaya was established in 2017. The center is a comprehensive unit committed to developing, promoting and implementing international education initiatives for our students, faculty members and staffs. The center also takes cares of admission of international students through various agencies like ICCR, Study-in-India, DASA etc. There are 28 international students currently studying undergraduate and postgraduate program(s) in various departments of NIT Meghalaya, and 4 international students graduated from NIT Meghalaya during AY2023-24.

2. FACULTY PROFILE:

Name	Designation	Qualification	Specialization
Dr. Manideepa Saha	Faculty-in-Charge	Ph.D	Mathematics

3. CONFERENCES / WORKSHOPS / SEMINARS / TRAININGS ATTENDED:

- North East Japan Caravan 2023: Shillong, organized by Embassy of Japan, Japan Foundation New Delhi and Indian Council for Cultural Relations (North East), at U Soso Tham Auditorium , Shillong during November 17-19, 2023.
- Bhutan Meghalaya Exchange Program 2023 “India and Bhutan in the BBIN region: New Horizons,” at Asian Confluence Center, Shillong, India, during November 22-25, 2023.
- Study In India Website-Portal Outreach & Orientation Program for the Compliance Officers of HEIs, March 22, 2024 (Online)

4. LIST OF ACHIEVEMENTS AND ACTIVITIES DURING THE YEAR 2023-24:

- 8 international students got admission at NIT Meghalaya in various program at NIT Meghalaya, among which 1 got through Study in India whereas 7 got through ICCR, during AY 2022-23.
- 8 international students graduated in 2023, among which 6 are completed BTech program, and 2 completed MTech program. One student opted for MS program at California State University, Fullerton, USA

Photos: Felicitation of newly admitted international students





Photos: North East Japan Caravan 2023: Shillong



5. BRIEF INTRODUCTION TO THE CENTER:

The Center for International Relations at NIT Meghalaya was established in 2017. The center is a comprehensive unit committed to developing, promoting and implementing international education initiatives for our students, faculty members and staffs. The center also takes cares of admission of international students through various agencies like ICCR, Study-in-India, DASA etc. There are 29 international students currently studying undergraduate and postgraduate program(s) in various departments of NIT Meghalaya, and 4 international students graduated from NIT Meghalaya.

6. COURSES OFFERED:

Two Short Term Bridge courses under SII - UKIERI programme:

- Finishing college training program for engineers (6 weeks)
- Industrial Robotics & Mechatronics (4 weeks)

7. FACULTY PROFILE:

Name	Designation	Qualification	Specialization
Dr. Manideepa Saha	Faculty-in-Charge	Ph.D	Mathematics

8. LIST OF ACHIEVEMENTS AND ACTIVITIES DURING THE YEAR 2021-22:

- 10 international students got admission at NIT Meghalaya in various program at NIT Meghalaya, among which six got through Study in India whereas five got through ICCR, during AY 2022-23.
- 4 international students graduated in 2022, among which 3 are completed BTECH program, and 1 completed MTECH program.
- City & Heritage Walk was conducted for international students studying under Study in India (SII) Program at NIT Meghalaya. The program was organized under the Study in India (EdCIL & MoE) program to facilitates acclimatizing international students to India's culture and heritage. The tour was conducted during January 21-30, 2023. Sixteen international students accompanied by two faculty members, namely Dr. Amit Kumar Paul & Dr. Akhilendra Pratap Singh and one staff, namely Mr. Anderson Rapsang,

Photos: Pictures of January 23-25 during the visit to Delhi & Mathura





Photos: Pictures of Agra on January 26





Photos: Pictures of Jaipur during January 27-28, 2023







CENTER FOR ROBOTICS AND MECHATRONICS

1. BRIEF INTRODUCTION TO THE CENTER:

The center started in 2017, with faculty members from various departments like Mechanical Engineering, Electrical Engineering, Electronics and Communication Engineering, and Computer Science Engineering. The Center was officially inaugurated by Chairman, BoG, Shri Sajjan Bhajanka, Chairman, Century Plyboards (India) Ltd on 1st April 2019.

2. THE VISION OF THE CENTRE FOR ROBOTICS AND MECHATRONICS:

To create a center for fundamental and applied research to enhance creative and innovative aspects of Robotics and Mechatronics to translate robotics into daily lives with moral and ethical standards.

3. THE MISSION OF THE CENTRE FOR ROBOTICS AND MECHATRONICS:

To train the students through the development of the technology for Robotics and Mechatronics innovation with moral and ethical standards.

- Creating technology through innovation enhances the productivity of industries and human comfort.
- To create a research environment with the collaboration of multiple disciplines to enhance research activity with Mechatronics, Control, Internet of things, and Robotics.
- Identify the local need-based problem and solve it through the Centre for Robotics and Mechatronics for the social benefit of the local region.
- To collaborate with the scientists or academia, in research centers, industries, and defense to establish knowledge in the fields of Robotics and Artificial Intelligence globally to create a modern technology.
- Fostering interdisciplinary collaboration among researcher scholars, students, and experts from various disciplines such as mechanical engineering, electrical engineering, computer science, and more.
- Providing educational programs and training opportunities for students, professionals, and researchers interested in robotics and mechatronics.
- Addressing ethical considerations and policy implications related to the use of robotics and mechatronics, ensuring responsible and beneficial deployment of these technologies.
- Supporting the development of startups and entrepreneurial ventures related to robotics and mechatronics, facilitating the transition of research ideas into practical applications.

4. PROGRAM OFFERED:

The Center for Robotics and Mechatronics offered finishing school programs for UK graduate students under the UKIERI program.

5. FACULTY PROFILE:

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. Guidance	Remarks
 Dr. Rabindra Narayan Mahapatra	Associate Professor, HoD, ME	PhD	Design and manufacturing	28-12-2017	02	02 Sponsored projects

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. Guidance	Remarks
 Dr. Bikash Kumar Sarkar	Associate Professor, ME, and PIC, CR&M	PhD	Fluid Power and Control	21-08-2013	Full-Time: 4 Completed, 2 Ongoing Part-Time: 4 Ongoing	01 Sponsored projects shared with Dr. S. Maity
 Dr. Kishore Debnath	Associate Professor & HOD, ME	PhD	Manufacturing	16-07-2015	Full-Time: 4 Completed, 1 Submitted, 4 Ongoing Part-Time: 4 Ongoing	01 Sponsored projects
 Dr. Bunil Kumar Balabantaray	Assistant Professor, CSE	PhD	Robotics, Computer Vision and Digital Heritage, AI/ML	14-12-2017	11	04 Sponsored Project

TECHNICIAN:



Name: Ritam Paul
 Designation: Centre Technical In-charge
 Qualification: B.Tech(Mechanical)
 Email: ritampaul@nitm.ac.in
 Contact No. : 7577886454

6. LIST OF PUBLICATIONS:

A. JOURNALS:

Dr. Rabindra Narayan Mahapatra

1. Rao, G. S., Debnath, K., & Mahapatra, R. N. (2024). Degradation characteristics of the pineapple leaf fibre reinforced green composite developed by injection moulding under different environmental conditions. *Industrial Crops and Products*, 214, 118429.
2. Pal, M. R., Debnath, K., & Mahapatra, R. N. (2024). Machining Performance Analysis of Ti6-Al-4V in Powder-Mixed EDM using Green Dielectric Oil. *Journal of Molecular and Engineering Materials*.
3. Pal, M. R., Debnath, K., Sahu, S. K., & Mahapatra, R. N. (2024). Multi-Objective Optimization and Prediction of Responses using GRA and ANN in Micro-EDM of Ti6Al4V using Different Tool Materials. *Journal of Advanced Manufacturing Systems*.
4. Rao, G. S., Debnath, K., & Mahapatra, R. N. (2024). Recycling and degradation behaviour of the bamboo fibre reinforced green composite fabricated by injection moulding. *Sustainable Materials and Technologies*, e00865.
5. PAL, M. R., DEBNATH, K., RAO, G. S., & MAHAPATRA, R. N. (2024). MICRO-EDM OF Ti-6AL-4V USING VARIOUS TOOL MATERIALS: MULTI-RESPONSE OPTIMIZATION AND SURFACE CHARACTERIZATION. *Surface Review and Letters*, 2450080.
6. Pal, M. R., Debnath, K., & Mahapatra, R. N. (2024). Optimization of Machining Parameters and Analysis of the Surface Characteristics in Micro-electrical Discharge Machining of 310 and 316 Stainless Steel. *Journal of Materials Engineering and Performance*, 1-17.
7. Rao, G. S., Debnath, K., & Mahapatra, R. N. (2024). Mechanical, Thermal, Morphological, and Fibre Characteristics During Injection Moulding of Green Composites. *Fibers and Polymers*, 25(1), 331-346.
8. Gorrepotu, S. R., Debnath, K., & Mahapatra, R. N. (2023). Mechanical, thermal, and morphological behavior of pineapple leaf fibre and polylactic acid green composites fabricated by varying fiber loading, fiber length, and injection parameters. *Polymer Engineering & Science*, 63(8), 2498-2510.
9. Champatiray, C., Bahubalendruni, M. R., Mahapatra, R. N., & Mishra, D. (2023). Optimal assembly sequence planning with tool uncertainties. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, 09544054231189012.

Dr. Bikash Kumar Sarkar

1. Venkaiah, P., Sarkar, B. K., & Chatterjee, A. (2024). Harris hawks optimization tuned exponential reaching law-based integral SMC for pitch control of linear hydraulic actuated wind turbines. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, 238(6), 1855-1873.
2. Kumar, N., Venkaiah, P., Sarkar, B. K., & Maity, S. (2023). Wind turbine electrohydraulic transmission system control for maximum power tracking with pump fault. *Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, 237(9), 1702-1716.
3. Venkaiah, P., Sarkar, B. K., & Chaterjee, A. (2023). Pitch control of electrohydraulic semi-rotary-actuated wind turbine with actuator and valve fault using generalized power-based exponential rate reaching law sliding mode controller. *Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, 237(8), 1423-1439.

Dr. Kishore Debnath

1. Pal, M. R., Debnath, K., & Mahapatra, R. N. (2024). Machining Performance Analysis of Ti6-Al-4V in Powder-Mixed EDM using Green Dielectric Oil. *Journal of Molecular and Engineering Materials*.
2. Pal, M. R., Debnath, K., Sahu, S. K., & Mahapatra, R. N. (2024). Multi-Objective Optimization and Prediction of Responses using GRA and ANN in Micro-EDM of Ti6Al4V using Different Tool Materials. *Journal of Advanced Manufacturing Systems*.
3. Rao, G. S., Debnath, K., & Mahapatra, R. N. (2024). Recycling and degradation behaviour of the bamboo fibre reinforced green composite fabricated by injection moulding. *Sustainable Materials and Technologies*, e00865.
4. PAL, M. R., DEBNATH, K., RAO, G. S., & MAHAPATRA, R. N. (2024). MICRO-EDM OF Ti-6AL-4V USING VARIOUS TOOL MATERIALS: MULTI-RESPONSE OPTIMIZATION AND SURFACE CHARACTERIZATION. *Surface Review and Letters*, 2450080.
5. Pal, M. R., Debnath, K., & Mahapatra, R. N. (2024). Optimization of Machining Parameters and Analysis of the Surface Characteristics in Micro-electrical Discharge Machining of 310 and 316 Stainless Steel. *Journal of Materials Engineering and Performance*, 1-17.

6. Dutta, H., Saha, S., Debnath, K., Sarma, D. K., Roy Choudhury, M., & Bhowmik, A. (2024). Optimizing processing parameters in electrical discharge milling of CFRP using metaheuristics. *Materials and Manufacturing Processes*, 1-13.
7. Rao, G. S., Debnath, K., & Mahapatra, R. N. (2024). Mechanical, Thermal, Morphological, and Fibre Characteristics During Injection Moulding of Green Composites. *Fibers and Polymers*, 25(1), 331-346.
8. Gaikwad, A., Debnath, K., & Gupta, M. K. (2023). Effects of alkaline-acid treatment on the physiochemical attributes of natural cellulosic fiber of *Arundo donax* L. *Journal of Applied Polymer Science*, 140(48), e54724.
9. Debnath, K., Behera, B. C., Rout, M., & Rao, G. S. (2023). Fabrication of Micro-Hole in 3D Printed CFRP Composite by Electrical Discharge Machining Process. *Journal of Advanced Manufacturing Systems*, 22(4).
10. Yadav, S. K., Singh, A., Debnath, K., Grover, S., & Singh, S. (2023). Experimental investigation and comparative study between machining of CFRP composite and CNT-mixed CFRP composite using ECDM process. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 45(9), 454.
11. Gorrepotu, S. R., Debnath, K., & Mahapatra, R. N. (2023). Mechanical, thermal, and morphological behavior of pineapple leaf fibre and polylactic acid green composites fabricated by varying fiber loading, fiber length, and injection parameters. *Polymer Engineering & Science*, 63(8), 2498-2510.
12. Rao, G. S., Paul, R., Singh, S., & Debnath, K. (2023). Influence of conventionally drilled and additively fabricated hole on tensile properties of 3D-printed ONYX/CGF composites. *Journal of Materials Engineering and Performance*, 32(13), 5849-5861.
13. Davis, R., Singh, A., Debnath, K., Keshri, A. K., Soares, P., Sopchenski, L., ... & Prakash, V. (2023). Surface modification of biodegradable Mg alloy by adapting μ EDM capabilities with cryogenically-treated tool electrodes. *The International Journal of Advanced Manufacturing*

Technology, 126(9), 4617-4636.

Dr. Bunil Kumar Balabantaray

1. Swain, A. K., Swetapadma, A., Rout, J. K., & Balabantaray, B. K. (2024). A hybrid learning method for distinguishing lung adenocarcinoma and squamous cell carcinoma. *Data Technologies and Applications*, 58(1), 113-131.
2. Swain, A. K., Swetapadma, A., Rout, J. K., & Balabantaray, B. K. (2024). Classification of non-small cell lung cancer types using sparse deep neural network features. *Biomedical Signal Processing and Control*, 87, 105485.
3. Sharma, P., Nayak, D. R., Balabantaray, B. K., Tanveer, M., & Nayak, R. (2023). A survey on cancer detection via convolutional neural networks: current challenges and future directions. *Neural Networks*.
4. Samal, S., Zhang, Y. D., Saez, J. M. G., Wang, S. H., Balabantaray, B. K., & Nayak, R. (2023). EAYv3-CF \$ C^{3}\$: Ensemble Learning With Attention-Based Yv3 Combined With CF \$ C^{3}\$ \$ Loss for Obscenity Detection. *IEEE Transactions on Emerging Topics in Computational Intelligence*.
5. Samal, S., Zhang, Y. D., Gadekallu, T. R., & Balabantaray, B. K. (2023). ASYv3: Attention-enabled pooling embedded Swin transformer-based YOLOv3 for obscenity detection. *Expert Systems*, 40(8), e13337.
6. Samal, S., Nayak, R., Jena, S., & Balabantaray, B. K. (2023). Obscene image detection using transfer learning and feature fusion. *Multimedia Tools and Applications*, 82(19), 28739-28767.
7. Samal, S., Zhang, Y. D., Gadekallu, T. R., Nayak, R., & Balabantaray, B. K. (2023). SBMYv3: improved MobYOLOv3 a BAM attention-based approach for obscene image and video detection. *Expert Systems*, 40(6), e13230.
8. Rout, R. K., Umer, S., Khandelwal, M., Pati, S., Mallik, S., Balabantaray, B. K., & Qin, H. (2023). Identification of discriminant features from stationary pattern of nucleotide bases and their application to essential gene classification. *Frontiers in Genetics*, 14, 1154120.

Sl no	Name	Number of Journals(From 1st April 2023 to 31st March 2024)
1	Dr. Rabindra Narayan Mahapatra	09
2	Dr. Bikash Kumar Sarkar	03
3	Dr. Kishore Debnath	13
4	Dr. Bunil Kumar Balabantaray	08

b. Conferences:**Dr. Bikash Kumar Sarkar**

1. Alom, N., Talukdar, P. K., Sarkar, B. K., & Saha, U. K. (2023, December). Influence of Concentrated Augmenter on the Performance of a Two-Bladed Savonius Wind Rotor Composed of Arc-Elliptical Profile. In Gas Turbine India Conference (Vol. 87721, p. V001T06A001). American Society of Mechanical Engineers.
2. Venkaiah, P., Sarkar, B. K., & Chatterjee, A. (2023, August). Horizontal Axis Wind Turbine Pitch Actuation Fault and Reaching Law Based Sliding Mode Controller Performance Analysis. In 2023 IEEE 3rd International Conference on Sustainable Energy and Future Electric Transportation (SEFET) (pp. 1-6). IEEE.
3. Vinod, J., Venkaiah, P., Kumar, N., & Sarkar, B. K. (2023, June). Francis turbine control with electrohydraulic inlet guide vane system dynamics. In 2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE) (pp. 1-6). IEEE.

Dr. Bunil Kumar Balabantaray

1. Swain, A. K., Swetapadma, A., Rout, J. K., & Balabantaray, B. K. (2023, December). A Review on Lung Cancer Detection and Classification using Shallow Learning and Deep Learning. In 2023 OITS International Conference on Information Technology (OCIT) (pp. 570-573). IEEE.
2. Behera, N. P., Singh, A. P., Rout, J. K., Balabantaray, B. K., & Swetapadma, A. (2023, December). Skin cancer detection using image features and ensemble learning. In 2023 OITS

International Conference on Information Technology (OCIT) (pp. 559-563). IEEE.

3. Sawkmie, L., Samal, S., & Balabantaray, B. K. (2023, December). Automatic Image Registration using SIFT and AKAZE: An application for Preservation of Cultural Heritage. In 2023 OITS International Conference on Information Technology (OCIT) (pp. 150-155). IEEE.
4. Samal, S., Srivastava, G., Gadekallu, T. R., Zhang, Y. D., & Balabantaray, B. K. (2023, November). LSiF: Log-Gabor Empowered Siamese Federated Learning for Efficient Obscene Image Classification in the Era of Industry 5.0. In International Conference on Neural Information Processing (pp. 44-55). Singapore: Springer Nature Singapore.
5. Jena, S., Panda, S., Balabantaray, B. K., & Nayak, R. (2023, October). Uncertainty Aware Implicit Image Function for Arbitrary-Scale Super-Resolution. In 2023 IEEE International Conference on Image Processing (ICIP) (pp. 2440-2444). IEEE.
6. Rana, D., Balabantaray, B. K., & Peesapati, R. (2023, June). Hardware Acceleration of Pre-trained Networks for Colorectal Polyp Classification. In 2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE) (pp. 1-6). IEEE.
7. Samal, S., Gadekellu, T. R., Rajput, P., Zhang, Y. D., & Balabantaray, B. K. (2023, May). SAS-UNet: Modified encoder-decoder network for the segmentation of obscenity in images. In 2023 IEEE/ACM 23rd International Symposium on Cluster, Cloud and Internet Computing Workshops (CCGridW) (pp. 45-51). IEEE.

SI No.	Name	Number of Conference (From 1st April 2023 to 31st March 2024)
1	Dr. Rabindra Narayan Mahapatra	Nil
2	Dr. Bikash Kumar Sarkar	03
3	Dr. Kishore Debnath	Nil
6	Dr. Bunil Kumar Balabantaray	07

5. PATENTS:**Dr. Bunil Kumar Balabantaray**

1. A SYSTEM AND METHOD FOR PROCESSING A QUANTUM INFORMATION WITH MSTVTD IN A QUANTUM COMMUNICATION 202231007098 D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj Filed 10 Feb 2022
2. A SYSTEM AND METHOD FOR QUANTUM COMMUNICATION BY OBJECT TELEPORTATION IN VARIANT SPACE TIME DOMAIN 202231052979 D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj D.K. Mishra, B.K.Balabantaray, R.Nayak, B.B.Biswal, R.N. Mahapatra, M.K. Praharaj Filed 16 Sep 2022
3. An Integrated Cloud-based Terrestrial Navigation System and Method thereof :Filed and Published in Journal of Intellectual Property India (Journal No46/2022), Department of Industrial Policy & Promotions, Government of India 202231065525A J.R.K Kumar Dabbakuti, Dr. Rangababu Peesapati, Dr. Bunil Kumar Balabantaray and Dr. Kiran Kumar Anumandla J.R.K Kumar Dabbakuti, Dr. Rangababu Peesapati, Dr. Bunil Kumar Balabantaray, and Dr. Kiran Kumar Anumandla Filed 18-Nov-2022

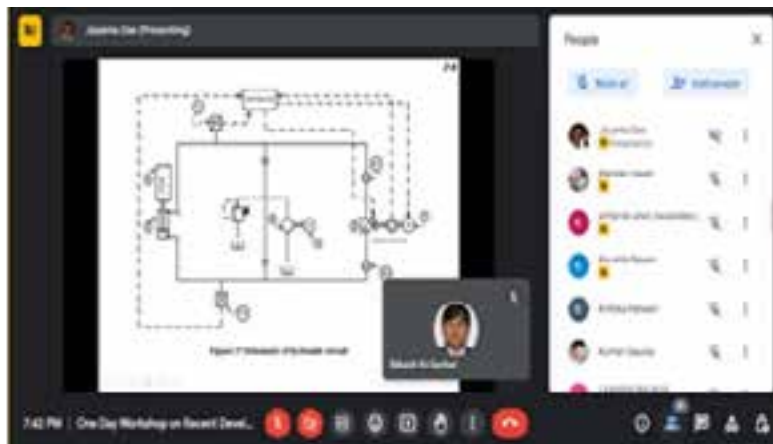
6. CONFERENCE/ WORKSHOP/ SEMINAR ORGANIZED:

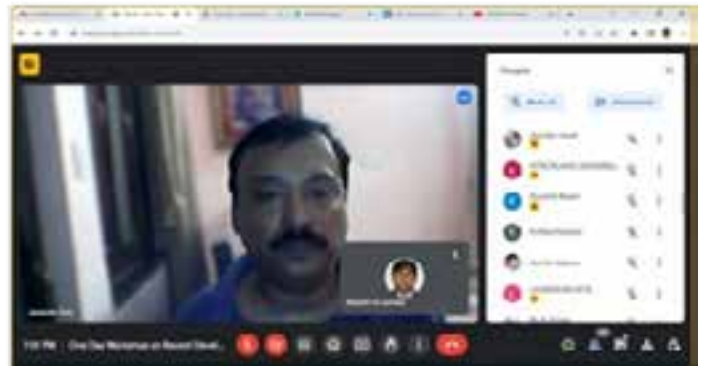
Dr. Bikash Kumar Sarkar

Amrit Kaal: 'Higher Study in USA': Center for Robotics and Mechatronics in Collaboration with the Student Activity Centre, NIT Meghalaya organized a lecture on 'Higher Study in USA' under the aegis of Amrit-Kal Vimrsh, A resurgent India-A Viksit Bharat@2047 on 27-09-2023. Mrs. Megha Roy Chatterjee, Education USA Coordinator, Education USA@USIEF office in Kolkata delivered the lecture.



One-day Workshop on Recent Development of Electrohydraulic System & Control: Center for Robotics and Mechatronics and Student Activity Centre, NIT Meghalaya in Collaboration with IEEE Joint CSS-IMS Chapter, Kolkata, India organized One Day Workshop on Recent Development of Electrohydraulic system and Control in online mode, under the aegis of Amrit-Kal Vimrsh, A resurgent India-A Viksit Bharat@2047 on 30-09-2023.





Expert talk on Multi-figure Robots: Prof. Sankha Deb, Department of Mechanical Engineering, IIT Kharagpur delivered an expert talk on Multi-figure robots on 24th of February 2024 in CTCL. The lecture was interactive and application-oriented.



Detailed Lecture talk on Robot Design and Building using AI: Prof. Dayal R. Parhi, Head of Central Research Facility, NIT Rourkela delivered a Detailed lecture talk on various types of Robots being built at NIT Rourkela under his supervision on 18 January 2024.





7. INDUSTRIAL TOUR: NIL

8. PROJECTS

a. Sponsored Projects:

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount (INR)	Duration	Status
1	CALCULATION OF PRODUCTIVITY INDEX FOR THE PLATE MILL OF JINDAL STEEL AND POWER LIMITED AND REMEDIAL MEASURE, ANGUL, ODISHA	Dr. Rabindra Narayan Mahapatra	JINDAL STEEL AND POWER LIMITED	1,18,000		On-going
2	AN ARTIFICIAL INTELLIGENCE APPROACH TO SOLVE WASTE MANAGEMENT CHALLENGES	Dr. Rabindra Narayan Mahapatra	FICHA, FRANCE	1,31,00,000		On-going
3	Control of fish robot with external disturbance an experimental study	Dr. Bikash Kumar Sarkar	TIDH, IIT Guwahati	9,00,000		On-going
4	Extraction of Pineapple Leaf Fiber and Use It for the Development of Low-Cost Products	Dr. Kishore Debnath	NECTAR, DST	2 Years		On-going
5	A Deep Learning Approach for Preservation of Cultural Heritage	Dr. Bunil Kumar Balabantaray	SERB (CRG/2021/008076)	23,91,345	From January 2022 To February, 2025	On-going
6	Use of Artificial Intelligence and Deep Learning Methods to predict Pain outcomes' after trans-forminal nerve block (TENB) in patients of lumbar spondylosis	Dr. Bunil Kumar Balabantaray	MRU-AIIMS Raebareli	50,000	From April 2023 To March, 2023	On-going
7	"Correlation of heterogeneity in Radiomics and Intra-operative Tumour Characteristics with Histology and Molecular Biomarkers in Astrocytoma: Exploring Role of Artificial Intelligence"	Dr. Bunil Kumar Balabantaray	MRU-AIIMS Raebareli	30,00,000	From January 2024 To March, 2027	On-going
8	An artificial intelligence approach to solve waste management challenges	Dr. Bunil Kumar Balabantaray	Ficha SAS, France	1,31,00,000	One Year	On-going

9. ADMINISTRATIVE RESPONSIBILITIES HELD:

Sl. No.	Name of Faculty	Responsibilities	Duration
1.	Dr. B. K. Sarkar	1. PIC, Centre for Robotics & Mechatronics 2. Nodal Officer, Samarth ERP 3. Departmental NBA coordinator 4. Faculty in-charge, Theory of machine Lab. 5. Machine in-charge, 3D printer, CIF	1. To date
2	Dr. K. Debnath	1. Head of the Department, ME	1. July 2022 - To date
3	Dr. Kumar Bunil Balabantaray	1. Professor-in-charge PG and Research (Academics) 2. Vice President (Technical), Student Activity Center, NIT Meghalaya 3. Coordinator, PG Admission Committee 4. Member, Center for Robotics and Mechatronics 5. Faculty-in-charge Internship, Department of CS, NIT Meghalaya 6. Faculty-in-charge Departmental Fund Utilization, Department of CSE, NIT Meghalaya	1. 04.11.2022 to till date 2. 01.07.2022 till date 3. 21.04.2022 to till date 4. 20.01.2018 to till date 5. 01.05.2018 to till date 6. 01.08.2018 to till date

10. MEMBERSHIP OF PROFESSIONAL BODIES:

Sl. No.	Name of Faculty	Member of
1	Dr. Bikash Kumar Sarkar	1. NSFMFP Life Member, LM631 2. ISHMT Life Member, 1064 3. IEEE, Senior member, CSS and Robotics and Automation 4. IEEE CSS-IMS joint chapter Execom member 5. ASME member
2	Dr. R. N. Mahapatra	1. ISTE, Life member 2. ACSIT, Member
3	Dr. Bunil Kumar Balabantaray	1. Member IEEE 2. Member IEEE EMBS Society 3. Life Member of The Indian Society for Technical Education, LM ID: 50712 4. Member, Soft Computing Research Society, India. 5. Associate Member (UACEE), Institute of Research Engineers and Doctors, (Membership No: AM10100057923)

CENTRE FOR TECHNOLOGY ENABLED LEARNING

1. BRIEF INTRODUCTION TO THE CENTER FOR TECHNOLOGY ENABLED LEARNING:

The growth of Information technology (IT) over the last few decades has changed almost every part of our daily life. In order to exploit the technology to benefit our society in a major way, it is necessary to devote time and attention to engineering, expansion, as well as spreading of quality education in related areas. As part of a national initiative from the Ministry of Education, the present endeavor has been mainly towards providing the required infrastructure and connectivity to the institutions of higher education like IITs and NITs. The objective is to create and manage a rich pool of digital resources and utilize them to provide quality certification programme and courses, which can be used by the universities as well as government and non-government organizations.

In its quest to make quality higher education accessible to the masses, the Government of India has been very keen to use the technological resources that are being developed to achieve the mission. As a major step in this direction, it had launched the National Mission on Education through Information and Communication Technology (NMEICT) in 2009 to allow eminent teachers and experts in the country to pool their collective wisdom for the benefit of every Indian individual who is willing to learn. This will greatly help in reducing the digital divide, which has traditionally plagued our society. In addition to quality content generation, the mission also aims to promote research in critical areas relating to imparting education to the masses.

In the present context, it has been felt that there is a need to

extend the reach of the mission to the north-eastern states of the country where reach ability of quality higher education is severely hampered due to unfriendly terrains, societal orientations, etc. As the first step in this direction, the Centre for Technology Enabled Learning (CTEL) has been set up in the NIT Meghalaya Campus, which will allow teachers to develop content, spread awareness in various regions of the north-east, and join the national initiative in a big way. The Centre strives to become the gateway of the north-east to achieve the goals of the national mission.

A state-of-the-art studio has been set up in the centre where facilities for both content creation and content distribution are being provided. Faculty members of the Institute as well eminent experts from other institutions and organizations are being approached to develop technically high-quality video contents, which will be made available to the students through on-line streaming technology. Through this studio, faculty members of NIT Meghalaya and also neighboring Institutes can participate in developing contents and directly assist in national initiatives like NPTEL and SWAYAM.

STAFF DETAILS:

SI NO	NAME	DESIGNATION
1.	Dr. Akhileendra Pratap Singh	Professor-In-Charge
2.	Mr. Sanju Mizar	Technical Assistant

ACTIVITIES IN CTEL

- I. Ph.D. Defense Seminar/PhD progress Seminar
- II. Invite Talk/ Guest Lecture
- III. Course Lecture Recording
- IV. Other Activities.



CTEL FACILITIES



LIST OF ITEMS/EQUIPMENT'S HAVE BEEN INSTALLED AT CTCL RECORDING ROOM:

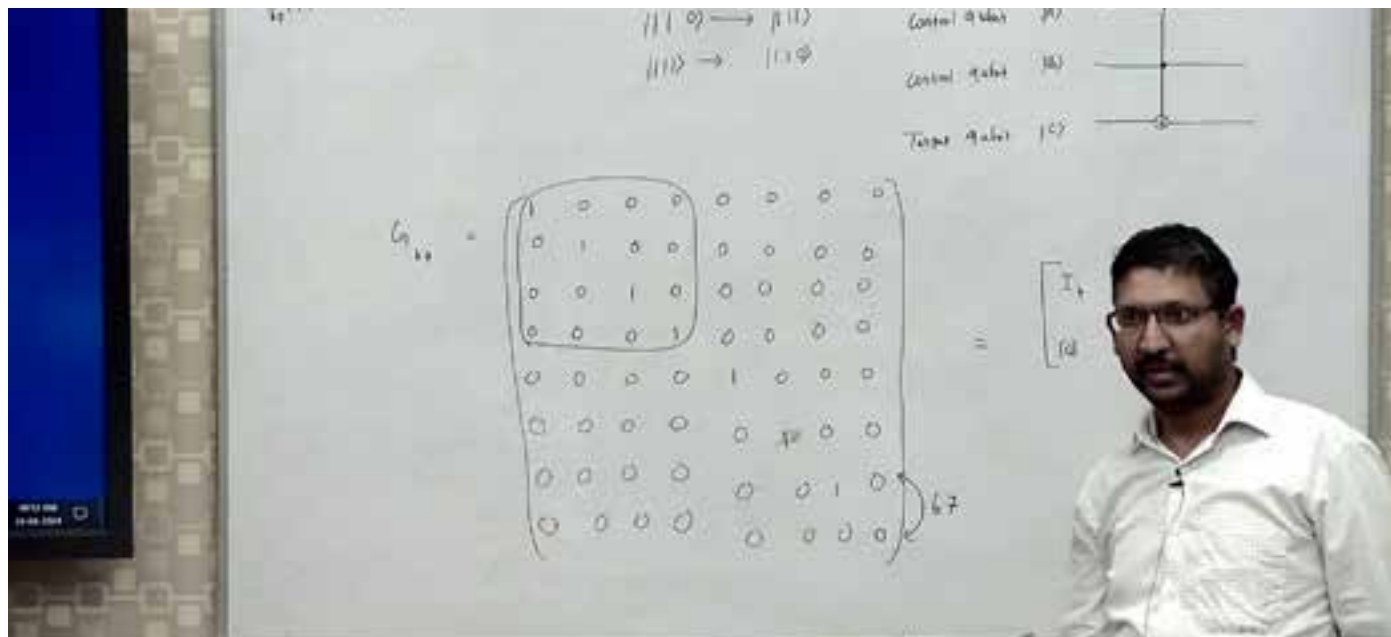
Panasonic LED Screen 65" Display cum White Board, Ma240 Audio Mixing Amplifier, Digital Wireless Head Worn Microphone Set, Digital Wireless Head Held Microphone Set, Lumens PTZ Camera, Crestron Air board Whiteboard Capture, Digital Graphics Engine, HDMI Switcher, HD Scaling Auto Switcher and HDMI, Media Presentation Controller along with Table top Kit, Magnetic Whiteboard of Size 6ft by 4ft, Digital Metallic Podium, Light Fixture.



Dr. Bunil Kumar Balabantaray, Department of Computer Science & Engineering



Dr. Sanjoy Debbarna, Department of Electrical Engineering



Dr. K. Senthilkumar, Department of Physics

LECTURES RECORDED AT CTCL (1ST APRIL 2023 – 31ST MARCH 2024)

SI No.	Department	Name of the Faculty	Total no. of Lectures
1	Physics	Dr. K. Senthilkumar	16
TOTAL			16

REGULAR CLASS AT CTCL (1ST APRIL 2023 – 31ST MARCH 2024)

SI No.	Department	Name of the Faculty
1	Computer Science and Engineering	Dr. Soumen Moulik
2		Prof. Diptendu Sinha Roy
3		Dr. Bunil Kumar Balabantaray
4	Electronics and Communication Engineering	Prof. Anup Dandapat
5	Electrical Engineering	Dr. Sanjoy Debbarma
6	Mechanical Engineering	Prof. Harish Chandra Das
7		Dr. Maneswar Rahang

LIST OF OTHER ACTIVITIES AT CTCL (1ST APRIL 2023 – 31ST MARCH 2024)

SI No	Name of the Faculty/Staff/ Student	Department	Activities
1	Dr. Bunil Kumar Balabantaray	CS	Shishir 2023
2	Ms. Arundhati Ashangbam	HS	ODEC Seminar
3	Ms Sana	CY	Registration Seminar
4	Dillip Kumar Mishra	CS	Registration Seminar
5	Teiborlang Wajri	CE	Registration Seminar
6	Dr. Biplab K Debnath	ME	Invited Talk
7	Archana Dash	ME	Registration Seminar
8	Dr. G Panda	EE	STC Lecture on Microgrid Protection and Control
9	Prof. D S Roy	CS	Registration Seminar
10	Anushka Chaurasia	CS	Registration Seminar
11	Dr. Rajat S Das	CCD	Webinar of SAKSHAM (Sanrakshan Kshamata Mahotsav)
12	Mr. Sahil Pritam Swain	CE	Registration Seminar
13	Sunanda Mukhopadhyay	EC	Registration Seminar
14	Dr. Wandahun Longtraai Reenbohn	PH	Invited Talk
15	Dr. Pradeep Kr. Rathore	EC	Registration Seminar
16	Thota Siva	MA	Pre-Submission Seminar
17	Dr. Shubhankar Majumdar	EC	Registration Seminar
18	Dr. M Saha	MA	Pre-Submission Seminar
19	Onus Manner	PH	Enhancement Seminar
20	Dr. P Rangababu	EC	Registration Seminar
21	Mr. Badavath Naveen	CE	Registration Seminar
22	Dr Wandahun L Reenbohn	PH	Msc Presentation
23	Kamal Das	CS	ODEC Seminar
24	Pallabi Sharma	CS	ODEC Seminar
25	Priya M S	EC	Registration Seminar
26	Athul Satya	PH	Registration Seminar
27	Dariskhem Pyngrope	EC	Registration Seminar
28	Prashant, V Tiwari, C Pandey, Pushpak	CS	Progress Seminar
29	Pruthiviraj & Vasujeet	ME	Progress Seminar
30	Ankit	ME	Registration Seminar
31	Grace Dorathy Laloo	EC	Progress Seminar

SI No	Name of the Faculty/Staff/ Student	Department	Activities
32	Dr Wandahun L Reenbohn	PH	Expert Talk
33	Vivekanand Mohapatra	PH	Progress Seminar
34	Asim	ME	Progress Seminar
35	Bhargab	ME	Registration Seminar
36	Dr. Shubhankar Majumdar	EC	Progress Seminar
37	Arunabh	ME	Progress Seminar
38	Suresh Penchala	EC	Progress Seminar
39	Aakash Kumar	CE	Registration Seminar
40	Athul Nath M K	CE	Progress Seminar
41	Saumitra Gangwar	CS	Pre-Submission Seminar
42	Ashish B. Khelkar	ME	Registration Seminar
43	Druv	PH	Registration Seminar
44	Eusebious T. Chullai	ME	Registration Seminar
45	Thulasiram	EC	Progress Seminar
46	Ashwini	ME	Progress Seminar
47	Amitav Mohanti	ME	Progress Seminar
48	Shaymoshree	EC	Progress Seminar
49	Chirag Gupta	EC	Progress Seminar
50	Manik Das	MA	ODEC Seminar
51	Lizia Sahkhar	CS	Registration Seminar
52	Srikant	EC	Pre-Submission Seminar
53	Krishna Das	CE	Progress Seminar
54	Arindom Bora and Surya	ME	Progress Seminar
55	Dolly Kumari	EC	Registration Seminar
56	Mustafa	CE	Progress Seminar
57	Chiranjibi	ME	Pre-Submission Seminar
58	Sreenivasa Rao Devireddy	EC	Registration Seminar
59	M. Santoshkumar Singh	EC	ODEC Seminar
60	Dr. Shaik Affijulla	EE	International Conference ICEPE-2023
61	Ashishkumar	EC	ODEC Seminar
62	Dhirendra Yadav	CS	Registration Seminar
63	JRK Kumar Dabbakuti	EC	Pre-Submission Seminar
64	Subhranshu Sekhar Tripathy	CS	ODEC Seminar
65	Dr. Shaik Affijulla	EE	Workshop by EE Dept
66	Sanjoy Choudhury	CS	Pre-Submission Seminar
67	Namrata G Ambekar	CS	Registration Seminar
68	Arindom Phukan	CS	ODEC Seminar
69	Sayantan Roy	CY	Registration Seminar
70	Amit Kumar	CS	Registration Seminar
71	I Bhanu Prasad	CS	Pre-Submission Seminar
72	Debbarni Sarkar	EC	Enhancement Seminar
73	Prasant & Pushpak	CS	Enhancement Seminar
74	Rasmiranjan samal	CE	Enhancement Seminar
75	Dr. Needhi Kotoky	CE	RAICIDC
76	Omkar Raj Aryan	ME	Registration Seminar
77	Vinod J	ME	ODEC Seminar
78	Shyamosree	EC	Enhancement Seminar
79	Krishna Das	CE	Enhancement Seminar

SI No	Name of the Faculty/Staff/ Student	Department	Activities
80	Sonali Samal	CS	Enhancement Seminar
81	Dr. Rajat S Das	ME	CCD Meeting
82	Ajit Kr. Gupta	MA	ODEC Seminar
83	Dr. T Boara	PH	MSc Interview
84	Kalpana Gogoiu	EC	Registration Seminar
85	Shreerudra Pratik	CS	Registration Seminar
86	Lumlang	CS	Registration Seminar
87	Dr. T Bora	PH	DC Meeting
88	Prof. D S Roy	CS	ODEC Seminar
89	Dr. Manideepa Saha	MA	ODEC Seminar
90	Adrish Chakraborty	PH	Registration Seminar
91	Dr. Shubhankar Majumdar	EC	Keynote Speaker for IEEE MTTS
92	Amarjyoti Mondal	CY	Registration Seminar
93	Sikha Sarmah	PH	ODEC Seminar
94	Yadav Manju Siyaram	CY	Registration Seminar
95	Aman Hira	ME	Registration Seminar
96	Dibyasman Sarma	MA	Registration Seminar
97	Rimpee	PH	Registration Seminar
98	Dr. M Saha	MA	Pre-Submission Seminar
99	Dr. Prabir Kumar Saha	EC	IMC 2023
100	Dr. M Saha	MA	ODEC Seminar
101	Dr. Bishnulatapam Pushpa Devi	EC	Registration Seminar
102	Dr. Rajat S Das	CCD	Invited Talk Navy Commander
103	Dr. A C Nayak	PH	CVO Eassy Writing
104	Mandira	EC	Registration Seminar
105	Pritivi Raj	ME	Pre-Submission Seminar
106	Dr. Paonam Sudeep Mangang	HS	COIN 2023
107	Dr. Koushik Das	ME	Presentation
108	Dipta S. Mahanta	PH	Registration Seminar
109	Dr. Atanu Singha Roy	SAC	Viksit Bharat
110	Gaddiel	CE	M.Tech Presentation
111	G. Mayil Muthu Kumaran	CS	Registration Seminar
112	Jacinta Potsangban	CY	Registration Seminar
113	Daman	ME	Registration Seminar
114	Seenivasan	EC	Enhancement Seminar
115	Shubhamshree	ME	Registration Seminar
116	Ankita Agarwal	CY	Pre-Submission Seminar
117	Sandeep	PH	Registration Seminar
118	Jayshree Barman	CY	Pre-Submission Seminar
119	Dr. Ganesh C Dhal	CE	International Conference on Environment Sustainability and climate change-2023
120	Sona Lyndem	CY	Pre-Submission Seminar
121	Ms. Menuolu Tetseo	EC	Enhancement Seminar
122	Prof. H C Das	ME	Interactive Talk
123	Dr. Kishore Debnath	ME	BoS meeting
124	Mudusudan Nayak	CS	Enhancement Seminar
125	Dr. P Saha	EC	BoS meeting
126	Dr. Rajat S Das	CCD	Placement Drive
127	Prof. D S Roy	CS	Pre-Submission Seminar

SI No	Name of the Faculty/Staff/ Student	Department	Activities
128	Dr. Saikat Mukherjee	MA	Pre-Submission Seminar
129	Prof. H C Das	ME	External Meeting
130	Dr. C Marthong	CE	Enhancement Seminar
131	Dr. Rajat S Das	CCD	Placement Drive
132	Mahima Chaudhary	EC	Enhancement Seminar
133	Poonam Gupta	CY	ODEC Seminar
134	Avishek Goswami	CE	Enhancement Seminar
135	Badavath Naveen	CE	Enhancement Seminar
136	Dr. Rajat S Das	CCD	Meeting with REDXD
137	Prof. H C Das	ME	External Meeting
138	Namrata G. Ambekar	CS	Progress Seminar
139	Bankit M. Nongrum	MA	Registration Seminar
140	Dr. Shaik Affijulla	EE	ISSETA 2024
141	Dr. R N Mahapattra	ME	CRM Expert Talk
142	Mahabul Haque	CY	Pre-Submission Seminar
143	Dr. Atanu Singha Roy	CY	AMRIT KAAL VIMARSH
144	Dr. M Saha	MA	Research Conclave 2024
145	Risham	CE	Registration Seminar
146	Prof. Anup Dandapat	EC	PM Speech on India's Techade- Chips for Viksit Bharat
147	Pritivi Raj	ME	ODEC Seminar
148	Dr. Koushik Das	ME	B.Tech Presentation
149	Ikkurthi Bhannu Prasad	CS	ODEC Seminar
150	Dr. Shubhankar Majumdar	EC	IEEE MTTS
151	Dr. Biplap Debnath	ME	Registration Seminar
152	Dr. M Saha	MA	Registration Seminar
153	Dr. Naba Kamal Nath	CY	Brain Stroming Session

Lecture Hall

The existing Lecture Hall has been upgraded to a smart classroom for online teaching and learning purposes. The entire system is to be established for CTET Expansion by the upgradation of the Lecture Hall to Smart Classroom. This facility is also being used for conducting invited lectures, student and faculty seminars and conferences etc.



LIST OF EQUIPMENT'S HAVE BEEN INSTALLED AT LECTURE SMART CLASSROOM

Multi touch 86" Display, Digital Wireless Head Worn Microphone Set, Lumens Tracking Camera for Presenter, HDMI to USB Converter for Soft VC, 4 Wall Mount Speaker, Amplifier cum Mixer, 8Port Network Switch, Rack Mount 1000VA Online UPS, Wall Mount Rack 12 U Network Rack.



LIST OF OTHER ACTIVITIES AT LECTURE HALL (1ST APRIL 2023 – 31ST MARCH 2024)

SI No	Name of the Faculty/Staff/ Student	Department	Activities
1	Dr. Paonam Sudeep Mangang	HS	Workshop
2	Ambika Rai	Academic	Interaction with team IITH
3	Thota Siva	MA	ODEC Seminar
4	Dr. Bunil Kumar Balabantaray	CS	Handique NESACI Invited Lecture
5	Dr. Bikash Kumar Sarkar	ME	Higher Education in USA
6	Dr. Paonam Sudeep Mangang	HS	COIN 2023
7	Dr. Saikat Mukherjee	Academic	NEP 2020 Workshop
8	Dr. Prabir Kumar Saha	EC	5G Lab Awarded
9	T. Swaroop Kumar	CE	Online lecture Civil Engineering Society (CES)

Annual Accounts 2023-24



कार्यालय ३ महालेखाकार (लेखा परीक्षा) मेघालय, शिलांग - 793 001
OFFICE OF THE PRINCIPAL ACCOUNTANT GENERAL (AUDIT)
MEGHALAYA, SHILLONG - 793 001.

FAX : 0364 - 2223494/ E.Mail agauMeghalaya@cag.gov.in

संख्या/No. AMG-1/NIT/8-4/2023-25/875

दिनांक /Date: 27.12.2023.

सेवा मे/To

The Director

National Institute of Technology (NIT)

Bijni Complex, Laitumkhrah, Shillong - 793003.

विषय /Sub:

SAR on the accounts of the National Institute of

Technology (NIT) Shillong for the year 2023-24 (Shillong)

महोदय/Sir,

महोदया/Madam,

कृपया उपर्युक्त विषयक संलग्न पत्र/प्रतिवेदन आपकी सूचना एवं आवश्यक कार्रवाही के लिए सादर प्रेषित है।

॥

Enclosed letter/Report on the above cited subject is forwarded for your information and necessary action please.

भवदीय/Yours faithfully,

वरिष्ठ लेखा परीक्षा अधिकारी/एएमजी-१

Sr. Audit Officer/AMG -I

संलग्नक/Enclo. यथोपरि/As stated

प्रधान महालेखाकार (लेखापरीक्षक), मेघालय का
कार्यालय, ऑडिट भवन, शिल्लोंग- 793001



OFFICE OF THE
PRINCIPAL
ACCOUNTANT GENERAL (AUDIT),
MEGHALAYA, AUDIT BHAWAN,
SHILLONG -793001

No AMG-L/NIT/8-4/2024-25/874

Dated: 27.12.2024

To,

The Secretary to the Government of India,
Ministry of Education,
(Department of Higher Education)
Room No.127, C Wing, Shastri Bhavan,
New Delhi – 110 001

Sub: Separate Audit Report on the accounts of the National Institute of Technology (NIT), Shillong for the year 2023-24

Sir,

I am to forward herewith the Separate Audit Report on the accounts of the NIT, Shillong for the year 2023-24 and a set of audited Annual Account of the NIT for the year 2023-24

2. The Hindi version of the Separate Audit Report will be prepared by the NIT.
3. The Separate Audit Report and the Annual Accounts sent may please be placed before both Houses of Parliament as soon as possible. The date(s) of placing of the Report and Accounts may please be intimated and ten copies of the Report, placed before Parliament, may please be sent to this office for records.
4. The Separate Audit Report may please be treated as Confidential till it is placed before the Parliament.

Kindly acknowledge receipt.

Yours faithfully,

Encl: As stated above.

Sd/-

Pr. Accountant General (Audit)

Memo No AMG-I/NIT /8-4/2024-25/875

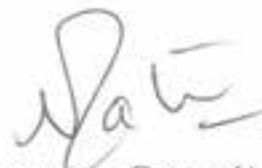
Dated: 27.12.2024

Copy of the Separate Audit Report on the accounts of the **National Institute of Technology (NIT), Shillong for the year 2023-24 Shillong** is forwarded for information and necessary action to:

**The Director,
National Institute of Technology(NIT),
Bijni Complex
Laitumkhrah Shillong-793003.**

2. Necessary arrangement may please be made for preparation of Hindi version of the Separate Audit Report and issue of the same to the Government of India, Ministry of Health and Family Welfare, with copy to this office.
3. The date(s) of placing the Separate Audit Report and Annual Accounts before both Houses of Parliament may please be intimated.
4. The Separate Audit Report sent herewith may please be treated as **confidential** till it is placed before both Houses of Parliament.

Kindly acknowledge receipt.



Deputy Accountant General/AMG-I

**Separate Audit Report of the Comptroller and Auditor General of India on the accounts
of National Institute of Technology (NIT), Meghalaya for the year ended
31 March 2024**

We have audited the attached Balance Sheet of the National Institute of Technology (NIT), Meghalaya as at 31 March 2024, the Income and Expenditure Account and Receipts and Payments Account for the year ended on that date under Section 19(2) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971 read with Section 22(2) of the National Institute of Technology (NIT) Act, 2007. These financial statements are the responsibility of the NIT's Management. Our responsibility is to express an opinion on these financial statements based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller & Auditor General of India (CAG) on the accounting treatment only with regard to classification, conformity with the best accounting practices, accounting standards and disclosure norms, etc. Audit observations on financial transactions with regard to compliance with the Law, Rules & Regulations (Propriety and Regularity) and efficiency-cum-performance aspects, etc., if any, are reported through Inspection Reports/CAG's Audit Reports separately.

3. We have conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosure in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

4. Based on our audit, we report that:

- I. We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit.
- II. The Balance Sheet and Income and Expenditure Account/Receipt and Payment Account dealt by this Report have been drawn in the revised format of accounts prescribed by Ministry of Education, Government of India for Central Educational Institutions.
- III. In our opinion, proper books of accounts and other relevant records have been maintained by the NIT, Meghalaya as required under Section 22(1) of the NIT Act, 2007 in so far as it appears from our examination of such books.

IV. We further report that:

A. Balance Sheet**Sources of Funds****Current Liabilities & Provisions (Schedule 3)****Current Liabilities****Other Current Liabilities****Other Liabilities: ₹ 10.73 crore**

A.1. The above does not include provision of ₹ 2.73 lakh¹ for Audit Fees Payable to the O/o the Principal Accountant General (Audit), Meghalaya against the year 2022-23. Non-provision of this liability has resulted in understatement of 'Current Liabilities & Provisions' by ₹ 2.73 lakh with corresponding overstatement of 'Excess of Expenditure over Income during the year' by the same amount.

B: General:

B.1 A reference is invited to CAG's Comment No. C1 of the Separate Audit Report for the year ended 31 March 2023 relating to huge balances of unreconciled balances/stale cheques. In this regard the Institute is yet to identify the reasons and pass necessary rectification entries in the Accounts.

B.2 As per Sl. No. 3.8 of Significant Accounting Policies issued by the Ministry, assets whose individual value was ₹ 2,000 or less should be treated as Small Value Assets and 100 per cent depreciation should be provided in respect of such assets at the time of their acquisition while physical accounting and control are continued to be maintained. In line with the illustration, it was observed that certain assets for e.g. Voltmeters, Ammeters, whose individual value was ₹ 2,000 or less was being capitalized as Fixed Assets. The Institute needs to look into such assets and carry out necessary rectifications.

B.3 During the year 2023-24, nine buildings valuing ₹ 135.11 crore were handed over by M/s RITES Ltd. to the Institute. The above amount also includes electrical installations in the nine buildings. The Institute needs to identify and bifurcate the above amount into buildings and electrical installations. Pending identification and bifurcation the above head 'Buildings' stand overstated with corresponding understatement of 'Electrical Installation'. The depreciation on the bifurcated amount may be charged and adjusted.

C. Grants-in-Aid

The opening balance of Grants-in-Aid was ₹ 29.51 crore. During the year 2023-24, an amount of ₹ 134.07 crore was received. Out of available balance of ₹ 163.58 crore, an amount of

¹ Worked out based on 5th CPC Basic Pay and Dearness Allowance rates applicable as declared on 12th June 2023 by the Ministry of Finance, Department of Expenditure which was effective from 1 January 2023 due to non-availability of actual rates during the course of conduct of audit.

crore was utilized and refunded ₹ 47.64 lakh leaving an unspent balance of ₹ 16.54 crore as on 31 March 2024 as depicted in the books of account.

- V. Subject to our observations in the preceding paragraphs, we report that the Balance Sheet, Income and Expenditure Account and Receipts and Payments Account dealt with by this report are in agreement with the books of accounts; and
- VI. In our opinion and to the best of our information and according to the explanations given to us, the said financial statements read together with the Accounting Policies and Notes on Accounts, and subject to the significant matters stated above and other matters mentioned in **Annexure** to this Audit Report give a true and fair view in conformity with accounting principles generally accepted in India:
- (a) In so far as it relates to the Balance Sheet, of the state of affairs of the National Institute of Technology (NIT), Meghalaya as at 31 March 2024; and
- (b) In so far as it relates to Income and Expenditure Account of the Deficit for the year ended on that date.

For and on behalf of the C&AG

Place: Shillong

Date:


Pr. Accountant General (Audit)

Annexure

1. Adequacy of Internal Audit System

The Institute has set up an Internal Audit Wing, however, the scope of the wing is limited to scrutiny of bills before making payments. Further, the Internal Audit Wing has not been given full responsibility for conducting audits.

2. Adequacy of Internal Control System

The following deficiencies in Internal Control System were observed:

- (i). The Institute has not developed any manual relating to Accounts and Audit.
- (ii) The narration against payment entries made in Tally were being indicated as payable instead of paid. This narration is misleading.

3. System of Physical Verification of Fixed Assets

The Institute has conducted physical verification of Fixed Assets during the year.

4. System of Physical Verification of Inventories

The Institute has conducted physical verification of Inventories/Consumables during the year.

5. Regularity in payment of statutory dues

The Institute has been regular in payment of statutory dues.



Sr. Audit Officer, AMG-I

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

BALANCE SHEET AS AT 31ST MARCH 2024

[Amount in ₹]

SOURCES OF FUNDS	Schedule	Current Year	Previous Year
CORPUS/CAPITAL FUND	1	4779145908.87	3884773588.66
DESIGNATED/ EARMARKED / ENDOWMENT FUNDS	2	172274627.50	123984921.00
CURRENT LIABILITIES & PROVISIONS	3	498927035.77	586522518.59
TOTAL		5450347572.14	4595281028.25
APPLICATION OF FUNDS	Schedule	Current Year	Previous Year
FIXED ASSETS	4		
Tangible Assets		1976579688.93	528832960.13
Intangible Assets		436782.22	5371553.54
Capital Works-In-Progress		2403241209.97	3110525889.23
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS	5		
Long Term		0.00	0.00
Short Term		0.00	0.00
INVESTMENTS - OTHERS	6	0.00	0.00
CURRENT ASSETS	7	906625045.06	915109222.33
LOANS, ADVANCES & DEPOSITS	8	163464845.97	35441403.02
TOTAL		5450347572.15	4595281028.25

SIGNIFICANT ACCOUNTING POLICIES

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CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS

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For NIT Meghalaya

Director

Registrar

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2024

[Amount in ₹]

Particulars	Schedule	Current Year	Previous Year
INCOME			
Academic Receipts	9	58462539.00	48632243.09
Grants / Subsidies	10	534087179.00	529948209.25
Income from investments	11	0.00	0.00
Interest earned	12	0.00	3745013.00
Other Income	13	16142177.00	13620354.00
Prior Period Income	14	0.00	0.00
TOTAL (A)		608691895.00	595945819.34
EXPENDITURE			
Staff Payments & Benefits (Establishment expenses)	15	271977360.00	278220209.25
Academic Expenses	16	73692129.00	63911630.80
Administrative and General Expenses	17	94395776.00	82929587.00
Transportation Expenses	18	16140831.00	17841622.00
Repairs & Maintenance	19	77840794.00	86629949.00
Finance costs	20	40289.00	65211.57
Depreciation	4	101703271.79	105039981.60
Other Expenses	21	0.00	0.00
Prior Period Expenses	22	16943742.00	350000.00
TOTAL (B)		652734192.79	634988191.22
Balance being excess of Income over Expenditure (A-B)		-44042297.79	-39042371.88
Transfer to / from Designated Fund			
Building fund			
Others (specify)			
Balance Being Surplus / (Deficit) Carried to Capital Fund		-44042297.79	-39042371.88

Significant Accounting Policies	23
Contingent Liabilities and Notes to Accounts	24

For NIT Meghalaya

Director

Registrar

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**SCHEDULE -1 CORPUS/CAPITAL FUND**

[Amount in ₹]

Particulars		Current Year	Previous Year
	Balance at the beginning of the year	3884773588.66	3365413536.54
Add:	Contributions towards Corpus/Capital Fund	0.00	0.00
Add:	Adjustments of Previous years	6955594.00	0.00
Add:	Grants from UGC, Government of India and State Government to the extent utilized for capital expenditure	931459024.00	558402424.00
Add:	Assets Purchased out of IRG		0.00
Add:	Assets Purchased out of Sponsored Projects, where ownership vests in the institution	0.00	0.00
Add:	Assets Donated/Gifts Received	0.00	0.00
Add:	Depreciation for prior period	0.00	0.00
Add:	Excess of Income over expenditure transferred from the Income & Expenditure Account	-44042297.79	-39042371.88
(Deduct)	B/F Unutilized Grant transferred to Current Liabilities	0.00	0.00
	Total	4779145908.87	3884773588.66
(Deduct)	Deficit transferred from the Income & expenditure Account	0.00	0.00
	Balance at the year end	4779145908.87	3884773588.66

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 2 - DESIGNATED / EARMARKED / ENDOWMENT FUNDS

[Amount in ₹]

Particulars	Fund wise Breakup		Total	Fund wise Breakup		Total
	Internal Resources Fund	Corpus Fund		Internal Resources Fund	Corpus Fund	
A.	A1	A2	(A1+A2)	A1	A2	(A1+A2)
a) Opening balance	94017762.00	29967159.00	123984921.00	94017762.00	25144091.00	119161853.00
b) Additions during the year	0.00	8520207.50	8520207.50	0.00	1141413.00	1141413.00
c) Income from investments made of the funds	0.00	0.00	0.00	0.00	0.00	0.00
d) Accrued Interest on investments/Advances	0.00	0.00	0.00	0.00	0.00	0.00
e) Interest on Savings Bank a/c	0.00	9759425.00	9759425.00	0.00	3681655.00	3681655.00
f) Interest on STDR	0.00	31953471.00	31953471.00	0.00	0.00	0.00
g) Other additions (Specify nature)	0.00	0.00	0.00	0.00	0.00	0.00
Total (A)	94017762.00	80200262.50	174218024.50	94017762.00	29967159.00	123984921.00
B.						
Utilisation/Expenditure towards objectives of funds						
ii) Capital Expenditure	0.00	0.00	0.00	0.00	0.00	0.00
ii) Revenue Expenditure	0.00	1943397.00	1943397.00	0.00	0.00	0.00
Total (B)	0.00	1943397.00	1943397.00	0.00	0.00	0.00
Closing balance at the year end (A - B)	94017762.00	78256865.50	172274627.50	94017762.00	29967159.00	123984921.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**SCHEDULE 3- CURRENT LIABILITIES & PROVISIONS**

[Amount in ₹]

Particulars	Current Year	Previous Year
A. CURRENT LIABILITIES		
1. Deposits from staff	6721886.75	6440800.75
2. Deposits from students	21589022.00	20572095.00
<u>3. Sundry Creditors :</u>		
a) For Goods & Services	0.00	0.00
b) Others	0.00	0.00
4. Deposit-Others (including EMD, Security Deposit) (As per Annexure 'A')	24020851.05	20189183.05
<u>5. Statutory Liabilities (GPF, TDS, WC TAX, CPF, GIS, NPS): (As per Annexure 'B') :</u>		
a) Overdue	0.00	0.00
b) Others	10402195.48	6816888.78
<u>6. Other Current Liabilities :</u>		
a) Salaries	0.00	0.00
b) Receipts against sponsored projects (As Per Annexure 3a)	66567976.50	65960784.98
c) Receipts against sponsored fellowships & scholarships	2724096.00	2722246.00
d) Unutilised Grants (As Per Annexure 3c)	165494011.42	295104509.42
e) Grants in advance	0.00	0.00
f) Other funds	4722566.00	4178456.00
g) Other liabilities (As per Annexure 'C')	107314727.57	90044621.61
Total (A)	409557332.77	512029585.59
B. PROVISIONS		
1. For Taxation	0.00	0.00
2. Gratuity	38639848.00	32158658.00
3. Superannuation Pension	0.00	0.00
4. Accumulated Leave Encashment	50729855.00	42334275.00
5. Trade Warranties/Claims	0.00	0.00
6. Others - Provision for Expenses	0.00	0.00
Total (B)	89369703.00	74492933.00
Total (A+ B)	498927035.77	586522518.59

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 3(a) SPONSORED PROJECTS

[Amount in ₹]

SI No.	Name of Project	Opening Balance		Receipts / Recoveries during the year		Total	Expenditure during the year	Closing Balance	
		Credit	Debit					Credit	Debit
1	2	3	4	5	6	7	8	9	
1	NIT R&D Account	64604424.79	0.00	1427557.19	66031981.98	0.00	66031981.98		0.00
2	Sponsored Project/NMHS-PMU/Vipin	5621.54	0.00	0.00	5621.54	0.00	5621.54		0.00
3	Sponsored Project - CE/02 (Khwirakpam)	6709.50	0.00	219.00	6928.50	0.00	6928.50		0.00
4	PHD-Visvesvaraya	207697.79	0.00	6744.00	214441.79	70.80	214370.99		0.00
6	Sponsored Project/Chem/Paresh	0.00	1315.36	3.00	-1312.36	103.64	0.00		-1416.00
8	Sponsored Project/DelITY/K. Datta	1270.00	0.00	41.00	1311.00	0.00	1311.00		0.00
11	Sponsored Project/SMDP/Dandapat	29983.00	0.00	819.00	30802.00	0.00	30802.00		0.00
12	RECPTL	228318.13	0.00	0.00	228318.13	232776.87	0.00		-4458.74
13	Sponsored Project/Gitish K Dutta	99846.98	0.00	3242.00	103088.98	0.00	103088.98		0.00
14	Sponsored Project/Rajarshi Ray	438.75	0.00	10.00	448.75	448.74	0.01		0.00
15	Sponsored Project/MEITY	776474.50	0.00	0.00	776474.50	602603.00	173871.50		0.00
	Total	65960784.98	1315.36	1438635.19	67398104.81	836003.05	66567976.50		-5874.74

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 3(b) -SPONSORED FELLOWSHIPS AND SCHOLARSHIPS

[Amount in ₹]

Sl No.	Name of Sponsor	Opening Balance		Transactions during the year		Closing Balance	
		Credit	Debit	Credit	Debit	Credit	Debit
1	2	3	4	5	6	7	8
1	Scholarship - Top Class	1789769.00	0.00	0.00	0.00	1789769.00	0.00
2	External Individual Scholarships	934327.00	0.00			934327.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00
	Total	2724096.00	0.00	0.00	0.00	2724096.00	0.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 3(c) - UNUTILIZED GRANTS FROM UGC, GOVERNMENT OF INDIA AND STATE GOVERNMENTS

[Amount in ₹]

	Particulars	Current Year	Previous Year
A	Recurring Grants: Government of India		
	Balance B/F	-3068619.72	55695142.28
	Add: Receipts during the year	292000000.00	216500000.00
	Add: Refunds	0.00	17679.00
	Total (a)	288931380.28	272212821.28
	Less: Refunds	0.00	0.00
	Less: Utilized for Revenue Expenditure	286289994.00	275281441.00
	Less: Utilized for Capital Expenditure	0.00	0.00
	Total (b)	286289994.00	275281441.00
	Unutilized carried forward (a-b)	2641386.28	-3068619.72
B	Capital Grants: Government of India		
	Balance B/F	301257821.06	656647650.06
	Add: Receipts during the year	810200000.00	203200000.00
	Total (a)	1111457821.06	859847650.06
	Less: Refunds	0.00	187405.00
	Less: Utilized for Revenue Expenditure	0.00	0.00
	Less: Utilized for Capital Expenditure	931459024.00	558402424.00
	Total (b)	931459024.00	558589829.00
	Unutilized carried forward (a-b)	179998797.06	301257821.06
C	Salary Grants: Government of India		
	Balance B/F	-3084691.92	15074047.33
	Add: Receipts during the year	238500000.00	239200000.00
	Total (a)	235415308.08	254274047.33
	Less: Refunds	4764295.00	2691971.00
	Less: Utilized for Revenue Expenditure	247797185.00	254666768.25
	Less: Utilized for Capital Expenditure	0.00	0.00
	Total (b)	252561480.00	257358739.25
	Unutilized carried forward (a-b)	-17146171.92	-3084691.92
	Grand Total (A+B+C+D)	165494011.42	295104509.42

Capital Grant :

Additions made to respective assets via adjustments/credits to CWIP have not been considered as grant utilisation since net additions made to CWIP have been considered as utilisation of grant already.

Recurring Grant :

Employer's share towards NPS has been added to Recurring Grant as per budget given by Ministry.

Salary Grant:

Employer's share towards NPS has been subtracted from Salary Grant as per budget given by Ministry.
Expenses have been taken after reduction of credits made to respective heads.

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 4 FIXED ASSETS

[Amount in ₹]

S.No.	Assets Heads	Gross Block					Depreciation			Net Block			
		Opening Balance	Additions	Adjustment	Prior Period Adjustments	Net Addition	Closing Balance	Opening Balance	Depreciation for the Year	Deductions/ Adjustment	Closing Balance	31.03.2024	31.03.2023
1	Land	2000000.00		0.00	0.00	0.00	2000000.00	0.00	0.00	0.00	0.00	2000000.00	2000000.00
2	Buildings	70340502.00	1353321105.00	0.00	111006693.00	1464327798.00	1534668300.00	3513067.24	30693366.00	16382690.00	50589123.24	1484079176.76	66827434.76
3	Roads & Bridges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Tubewells & Water Supply	446375.00	86588189.00	0.00	1290340.00	87878529.00	88324904.00	71422.00	1766499.00	25807.00	1863728.00	86461176.00	374953.00
5	Sewerage & Drainage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Electrical Installation and Equipment	46321953.00	1316092.00	0.00	-24706491.00	-23390399.00	22931554.00	5068420.00	1146578.00	47160.00	6262158.00	16669396.00	41253533.00
7	Plant & Machinery	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Scientific & Laboratory Equipment	474614875.00	39496932.00	0.00	1002189.00	40499121.00	515113996.00	141130886.00	41209120.00	108397.00	182448403.00	332665593.00	333483989.00
9	Office Equipment	69062913.00	1386279.00	0.00	0.00	1386279.00	70449192.00	44707340.90	5283689.00	0.00	49991029.90	20458162.10	24355572.10
10	Audio Visual Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Computers & Peripherals	151803053.00	829669.00	0.00	-19835762.00	-19006093.00	132796960.00	122208623.80	9544912.20	379688.00	132133224.00	663736.00	295944429.20
12	Furniture, Fixtures & Fittings	74807439.00	1513378.00	0.00	0.00	1513378.00	76320817.00	44732249.93	5724062.00	0.00	50456311.93	25864505.07	30075189.07
13	Vehicles	3243960.00	0.00	0.00	0.00	0.00	3243960.00	2733786.00	324396.00	0.00	3058182.00	185778.00	510174.00
14	Library Books & Scientific Journals	9283831.00	8015804.00	0.00	0.00	8015804.00	17299635.00	8926145.00	841324.00	0.00	9767469.00	7532166.00	357686.00
15	Small Value Assets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total (A)	901924901.00	1492467448.00	0.00	68756969.00	1561224417.00	2463149318.00	373091940.87	96533946.20	16943742.00	486569629.07	1976579688.93	528832960.13
16	Capital Work in Progress (B)	3110525889.23	876439509.37	-1437682488.00	-146041701.00	-707284679.63	2403241209.60	0.00	0.00	0.00	0.00	2403241209.97	3110525889.23
17	Computer Software	86264598.00	234556.00	0.00	0.00	234556.00	86499154.00	81031824.00	5141570.00	0.00	86173394.00	325760.00	5232774.00
18	E-Journals	86886491.00	0.00	0.00	0.00	0.00	86886491.00	86595142.00	0.00	291349.00	86886491.00	0.00	1.00
19	Patents	249800.00	0.00	0.00	0.00	0.00	249800.00	111022.23	27755.56	0.00	138777.78	111022.22	138777.77
	Total (C)	173400889.00	234556.00	0.00	0.00	234556.00	173635445.00	167737988.23	5169325.56	291349.00	173198662.78	436782.22	5371553.54
	Grand Total (A+B+C)	4185851679.23	2369141513.37	-1437682488.00	-77284732.00	854174293.37	5040025972.60	540829929.10	101703271.79	17235091.00	659768291.85	4380257681.12	3644730402.90

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**SCHEDULE 5 : INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS**

[Amount in ₹]

	Current Year	Previous Year
1 In Central Government Securities	0.00	0.00
2 In State Government Securities	0.00	0.00
3 Other approved Securities	0.00	0.00
4 Shares	0.00	0.00
5 Debentures and Bonds	0.00	0.00
6 Term Deposits with Banks	0.00	0.00
7 Others (to be specified)	0.00	0.00
Total	0.00	0.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 6: INVESTMENTS – OTHERS

[Amount in ₹]

		CURRENT YEAR	PREVIOUS YEAR
1	In Central Government Securities	0.00	0.00
2	In State Government Securities	0.00	0.00
3	Other approved Securities	0.00	0.00
4	Shares	0.00	0.00
5	Debentures and Bonds	0.00	0.00
6	Others	0.00	0.00
	TOTAL	0.00	0.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 7: CURRENT ASSETS

[Amount in ₹]

	Current Year	Previous Year
1. Stock:		
a)Stores and Spares	0.00	0.00
b)Loose Tools	0.00	0.00
c)Publications	0.00	0.00
d)Laboratory chemicals, consumables and glass ware	0.00	0.00
e)Building Material	0.00	0.00
f)Electrical Material	0.00	0.00
g)Stationery	0.00	0.00
h)Water supply material	0.00	0.00
2. Sundry Debtors:		
a)Debts Outstanding for a period exceeding six months	0.00	0.00
b)Others	0.00	0.00
3. Cash and Bank Balances		
a) With Scheduled Banks:		
In Current Accounts	282169640.63	247715567.39
In term deposit Accounts	215867270.00	337173771.00
In Savings Accounts	408543134.43	330219883.94
b) With non-Scheduled Banks:		
In term deposit Accounts	0.00	0.00
In Savings Accounts	0.00	0.00
c) Cash in hand:	0.00	0.00
Imprest Account	45000.00	0.00
4. Post Office- Savings Accounts	0.00	0.00
TOTAL	906625045.06	915109222.33

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 8 - LOANS, ADVANCES & DEPOSITS

[Amount in ₹]

	Current Year	Previous Year
1. Advances to employees: (Non-interest bearing)		
a)Salary	0.00	0.00
b)Festival	0.00	0.00
c)Medical Advance	0.00	0.00
d)Other - PDA Advance	2214053.93	280882.93
e)Other - LTC Advance	154893.00	17000.00
f) Loan to Sponsored Projects	1072866.00	822866.00
2. Long Term Advances to employees: (Interest bearing)		
a)Vehicle loan	0.00	0.00
b)Home loan	0.00	0.00
c)Others (to be specified)	0.00	0.00
3. Advances and other amounts recoverable in cash or in kind or for value to be received:		
a)On Capital Account	15204098.10	16750545.10
b)To Suppliers	92877770.00	4882144.00
c)Others - Travelling Advance	0.00	0.00
d)Others - Temporary Advance	0.00	0.00
e)Advance - Imprest	30000.00	30000.00
f)Advance against Projects	0.00	0.00
g) TDS	3088477.00	4296742.00
4. Prepaid Expenses		
a) Repairs and Maintenance	1727014.00	1727014.00
b)Other expenses -Leased Line Charges	198540.00	198540.00
c) Recurring Expenses	1524788.00	0.00
5. Deposits		
a)Telephone	0.00	0.00
b)Lease Rent	0.00	0.00
c)Electricity	0.00	0.00
d)AICTE, if applicable	0.00	0.00
f)Others	1552330.00	1552330.00
6. Income Accrued:		
a)On Investments from Earmarked/ Endowment Funds	0.00	0.00
b)On Investments-Others	0.00	0.00
c)On Loans and Advances	0.00	0.00
d)Others (includes income due unrealized) (Term Deposits)	40880912.50	2206446.00
7. Other - Current assets receivable from UGC/sponsored projects		
a)Debit balances in Sponsored Projects	5874.74	1315.36
b)Debit balances in Sponsored Fellowships & Scholarships	0.00	0.00
c)Grants Receivable	0.00	0.00
d)Other receivables from UGC	0.00	0.00
e) Caution Money - B Tech	9000.00	9000.00
f) CCMT 2017	300.00	300.00
g) CCMT Admission Expenses 2016	25361.00	25361.00
h) CSAB/CSAB Refund	451631.00	146000.00
i) External Agency Funds- For exams, conference, seminar, etc.		57383.63
j) GST	9403.70	0.00
8. Claims Receivable		
Sundry Receivables	2437533.00	2437533.00
TOTAL	163464845.97	35441403.02

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 9 - ACADEMIC RECEIPTS

[Amount in ₹]

		Current Year	Previous Year
A. FEES FROM STUDENTS			
A. Academic			
1	Enrollment and Registration Fee	1783400.00	1480000.00
2	Application Fee	647000.00	0.00
3	Laboratory and Internet Fee	4476500.00	3924000.00
4	Library Fee	2608700.00	1909500.00
5	Provisional Certificate Fee	270000.00	0.00
6	Student Activity Fee	3573500.00	3108500.00
7	Tuition Fees	37772039.00	32825643.09
8	Alumni Fee	540000.00	0.00
	Total (A)	51671139.00	43247643.09
B. Examinations			
1	Examination Fee and Grade Fee	1783400.00	1480000.00
	Total (B)	1783400.00	1480000.00
C. Other Fees			
1	Identity Card Fee	40500.00	14100.00
2	Hostel Admission Fee	79600.00	0.00
3	Fine	173000.00	153000.00
4	Transportation Fee	4714900.00	3643500.00
5	Degree Certificate Fee	0.00	94000.00
	Total (C)	5008000.00	3904600.00
D. Sale of Publications			
	1.Sale of Admission forms	0.00	0.00
	2.Sale of syllabus and Question Paper, etc.	0.00	0.00
	3.Sale of prospectus including admission forms	0.00	0.00
	Total (D)	0.00	0.00
E. Other Academic Receipts			
	1.Stipend/means-cum-merit scholarship	0.00	0.00
	2.Registration fees (Academic Staff College)	0.00	0.00
	Total (E)	0.00	0.00
	Grand Total (A+B+C+D+E)	58462539.00	48632243.09

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 10 – GRANTS / SUBSIDIES (IRREVOCABLE GRANTS RECEIVED)

[Amount in ₹]

Particulars	Recurring		Capital		Salary		Current Year Total		Recurring		Capital		Salary		Previous Year Total	
	Govt. of India		Govt. of India		Govt. of India				Govt. of India		Govt. of India		Govt. of India			
Balance B/F	-3068619.72		301257821.06		-3084691.92		295104509.42		55695142.28		656647650.06		15074047.33		727416839.67	
Add: Receipts during the year	292000000.00		810200000.00		238500000.00		1340700000.00		216500000.00		203200000.00		239200000.00		658900000.00	
Add: Refund to UGC Balance	0.00		0.00		0.00		0.00		17679.00		0.00		0.00		17679.00	
Total	288931380.28		1111457821.06		235415308.08		1635804509.42		272212821.28		859847650.06		254274047.33		1386334518.67	
Less: Refund to UGC Balance	0.00		0.00		4764295.00		4764295.00		0.00		187405.00		2691971.00		2879376.00	
Less: Utilised for Capital expenditure (A)	0.00		931459024.00		0.00		931459024.00		0.00		558402424.00		0.00		558402424.00	
Balance	288931380.28		179998797.06		230651013.08		699581190.42		272212821.28		301257821.06		251582076.33		825052718.67	
Less: Utilized for Revenue Expenditure (B)- Amount transferred to Income & Expenditure Account	286289994.00		0.00		247797185.00		534087179.00		275281441.00		0.00		254666768.25		529948209.25	
Balance C/F (C)	2641386.28		179998797.06		-17146171.92		165494011.42		-3068619.72		301257821.06		-3084691.92		295104509.42	

A-Appears as addition to Corpus/Capital Fund (Schedule-1) as well as additions to Fixed Assets during the year.

B-Appears as income in the Income & Expenditure Account.

C-(I) Appears under Current Liabilities-Unspent Grant in the Balance Sheet and will become the opening balance next year (Schedule 3).

(II) Represented by Bank balances, Investments and Advances on the assets side.

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 11- INCOME FROM INVESTMENTS

[Amount in ₹]

Particulars	Earmarked / Endowment Funds		Other Investments	
	Current Year	Previous Year	Current Year	Previous Year
1. Interest				
a.On Government Securities	0.00	0.00	0.00	0.00
b.Other Bonds/Debentures	0.00	0.00	0.00	0.00
2. Interest on Term Deposits	0.00	0.00	0.00	0.00
3. Income accrued but not due on Term Deposits/Interest bearing advances to employees	0.00	0.00		0.00
4. Interest on Savings Bank Accounts	0.00	0.00	0.00	0.00
5. Others (Specify)	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00
Transferred to Earmarked/Endowment Funds	0.00	0.00		
Balance	0.00	0.00		

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 12: INTEREST EARNED

[Amount in ₹]

Particulars	Current Year	Previous Year
1. On Savings Accounts with scheduled banks	0.00	3745013.00
2. On Loans		
a. Employees/Staff	0.00	0.00
b. Others	0.00	0.00
3. On Debtors and Other Receivables	0.00	0.00
Total	0.00	3745013.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 13- OTHER INCOME

[Amount in ₹]

	Current Year	Previous Year
A. Income from Land & Buildings		
1.Hostel Seat Rent	9160000.00	7465000.00
2.Rental Income	0.00	16000.00
3.Hostel Electricity and Water Charges	3067000.00	2704500.00
4.Hostel Establishment Fee	3299000.00	2769000.00
Total	15526000.00	12954500.00
B. Sale of Institute's publications	0.00	0.00
C. Income from holding events		
1.Gross Receipts from annual function/ sports carnival	0.00	0.00
Less: Direct expenditure incurred on the annual function/ sports carnival	0.00	0.00
2.Gross Receipts from fetes	0.00	0.00
Less: Direct expenditure incurred on the fetes	0.00	0.00
3.Gross Receipts for educational tours	0.00	0.00
Less: Direct expenditure incurred on the tours	0.00	0.00
4.Overhead Charges	0.00	0.00
Total	0.00	0.00
D. Others		
1. Income from consultancy		0.00
2. RTI fees		0.00
3. Income from Royalty	0.00	0.00
4. Sale of application form (recruitment)	0.00	
5. Misc. receipts (Sale of tender form)	0.00	0.00
6. Profit on Sale/disposal of Assets	0.00	0.00
a) Owned assets	0.00	0.00
b) Assets received free of cost	0.00	0.00
7. Grants/Donations from Institutions, Welfare Bodies and International Organizations	0.00	0.00
8. Others		
a) Miscellaneous	418109.00	266042.00
b) External Scholarship	23790.00	375088.00
c) Transit House Fee	82000.00	0.00
d) Sample Charges	92278.00	24724.00
Total	616177.00	665854.00
Grand Total (A+B+C+D)	16142177.00	13620354.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 14 - PRIOR PERIOD INCOME

[Amount in ₹]

Particulars	Current Year	Previous Year
1.Academic Receipts	0.00	0.00
2.Remuneration	0.00	0.00
3.Interest earned	0.00	0.00
4. Other Income	0.00	0.00
Total	0.00	0.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**SCHEDULE 15 – STAFF PAYMENTS & BENEFITS (ESTABLISHMENT EXPENSES)**

[Amount in ₹]

	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a)Salaries and Wages	219676579.00	0.00	219676579.00	217245251.25	0.00	217245251.25
b)Allowances and Bonus	2945845.00	0.00	2945845.00	5399643.00	0.00	5399643.00
c)Contribution to Provident Fund	0.00	0.00	0.00	0.00	0.00	0.00
d)Contribution to Other Fund (specify)	0.00	0.00	0.00	0.00	0.00	0.00
e)Staff Welfare Expenses	0.00	0.00	0.00	0.00	0.00	0.00
f)Retirement and Terminal Benefits	42693198.00	0.00	42693198.00	44033268.00	0.00	44033268.00
g)LTC facility	2544299.00	0.00	2544299.00	2736577.00	0.00	2736577.00
h)Leave Encashment	0.00	0.00	0.00	5003778.00	0.00	5003778.00
i)Guest Faculty	0.00	0.00	0.00	69166.00	0.00	69166.00
j)Honorarium	0.00	0.00	0.00	0.00	0.00	0.00
k) Gratuity (Provision)	0.00	0.00	0.00	0.00	0.00	0.00
l) Others - Medical Expenses	4117439.00	0.00	4117439.00	3732526.00	0.00	3732526.00
TOTAL	271977360.00	0.00	271977360.00	278220209.25	0.00	278220209.25

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 16 - ACADEMIC EXPENSES

[Amount in ₹]

	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a)Laboratory expenses	0.00	0.00	0.00	0.00	0.00	0.00
b)Field work/Participation in Conferences	799749.00	0.00	799749.00	21662.00	0.00	21662.00
c)Expenses on Seminars/Workshops	0.00	0.00	0.00	0.00	0.00	0.00
d) Honarium (Foreign Examiners, etc)	1871503.00	0.00	1871503.00	1458950.80	0.00	1458950.80
e)Examination	0.00	0.00	0.00	0.00	0.00	0.00
f)Student Welfare expenses	0.00	0.00	0.00	0.00	0.00	0.00
g)Admission expenses	0.00	0.00	0.00	0.00	0.00	0.00
h)Convocation expenses	1644860.00	0.00	1644860.00	1808329.00	0.00	1808329.00
i) Publications	0.00	0.00	0.00	0.00	0.00	0.00
j)Stipend/means-cum-merit scholarship	62277284.00	0.00	62277284.00	50687689.00	0.00	50687689.00
k)Subscription Expenses	0.00	0.00	0.00	787500.00	0.00	787500.00
l) Others	0.00					
i) Recurring Contingency	677331.00	0.00	677331.00	2073753.00	0.00	2073753.00
ii) Students Activities	5327083.00	0.00	5327083.00	5043731.00	0.00	5043731.00
iii) Other Academic Activities	26550.00	0.00	26550.00	50000.00	0.00	50000.00
iv) Consumables	29768.00	0.00	29768.00	534869.00	0.00	534869.00
v) CSAB Administrative expenses	0.00	0.00	0.00	383400.00	0.00	383400.00
vi) Medical Expenses - Students	1038001.00	0.00	1038001.00	977097.00	0.00	977097.00
vii) CCMT - Admission expenses	0.00	0.00	0.00	84650.00	0.00	84650.00
TOTAL	73692129.00	0.00	73692129.00	63911630.80	0.00	63911630.80

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

SCHEDULE 17 - ADMINISTRATIVE AND GENERAL EXPENSES

[Amount in ₹]

	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
A. Infrastructure						
a)Electricity and power	8432062.00	0.00	8432062.00	7080938.00	0.00	7080938.00
b)Water charges	3067220.00	0.00	3067220.00	2712870.00	0.00	2712870.00
c)Insurance	0.00	0.00	0.00	0.00	0.00	0.00
d)Rent, Rates and Taxes (including property tax)	59500706.00	0.00	59500706.00	40261325.00	0.00	40261325.00
Total (A)	70999988.00	0.00	70999988.00	50055133.00	0.00	50055133.00
B. Communication						
e)Communication and Transportation	2411789.00	0.00	2411789.00	1973538.00	0.00	1973538.00
f)Telephone, Fax and Internet Charges	156843.00	0.00	156843.00	689187.00	0.00	689187.00
Total (B)	2568632.00	0.00	2568632.00	2662725.00	0.00	2662725.00
C. Others						
g)Printing and Stationery (consumption)	0.00	0.00	0.00		0.00	0.00
h)Travelling and Conveyance Expenses/TA/DA	3455301.00	0.00	3455301.00	1351597.00	0.00	1351597.00
i)Meeting Expenses	1206653.00	0.00	1206653.00	845558.00	0.00	845558.00
j)Auditors Remuneration	0.00	0.00	0.00	442565.00	0.00	442565.00
k)Professional Charges	817871.00	0.00	817871.00	1216020.00	0.00	1216020.00
l) Advertisement and Publicity	2088936.00	0.00	2088936.00	988737.00	0.00	988737.00
m)Magazines & Journals	0.00	0.00	0.00	0.00	0.00	0.00
n)Others (as per details below)	0.00	0.00	0.00			0.00
Consumables - Transit House	0.00	0.00	0.00	63500.00	0.00	63500.00
Accommodation Expenses	1219077.00	0.00	1219077.00	277974.00	0.00	277974.00
Contingencies	1097321.00	0.00	1097321.00	662301.00	0.00	662301.00
CUG Expenses	93407.00	0.00	93407.00			
Recruitment Expenses	771902.00	0.00	771902.00	0.00	0.00	0.00
Miscellaneous Expenses	1242126.00	0.00	1242126.00	974796.00	0.00	974796.00
Institute Day expenses (Annual Day)	786287.00	0.00	786287.00	1396557.00	0.00	1396557.00
Recurring expenses for Departments	8048275.00	0.00	8048275.00	21989127.00	0.00	21989127.00
Postage and Telegram	0.00	0.00	0.00	2997.00	0.00	2997.00
Patent Administration Charges	0.00	0.00	0.00	0.00	0.00	0.00
Institute Overhead	0.00	0.00	0.00	0.00	0.00	0.00
Total (C)	20827156.00	0.00	20827156.00	30211729.00	0.00	30211729.00
	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL (A+B+C)	94395776.00	0.00	94395776.00	82929587.00	0.00	82929587.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**SCHEDULE 18 TRANSPORTATION EXPENSES**

[Amount in ₹]

	Particulars	Current Year			Previous Year		
		Revenue	Capital	Total	Revenue	Capital	Total
1	Vehicles (owned by Institution)						
	a)Running expenses	316109.00	0.00	316109.00	214567.00	0.00	214567.00
	b)Repairs & maintenance	0.00	0.00	0.00	0.00	0.00	0.00
	c) Insurance expenses	0.00	0.00	0.00	0.00	0.00	0.00
2	Vehicles taken on rent/lease						
	a) Rent/lease expenses	15824722.00	0.00	15824722.00	17627055.00	0.00	17627055.00
3	Vehicle (Taxi) hiring expenses	0.00	0.00	0.00	0.00	0.00	0.00
	Total	16140831.00	0.00	16140831.00	17841622.00	0.00	17841622.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**SCHEDULE 19 – REPAIRS & MAINTENANCE**

[Amount in ₹]

	Particulars	Current Year			Previous Year		
		Revenue	Capital	Total	Revenue	Capital	Total
a)	Buildings	0.00	0.00	0.00	0.00	0.00	0.00
b)	Furniture & Fixtures	0.00	0.00	0.00	0.00	0.00	0.00
c)	Plant & Machinery	0.00	0.00	0.00	0.00	0.00	0.00
d)	Office Equipment	0.00	0.00	0.00	0.00	0.00	0.00
e)	Computers	0.00	0.00	0.00	0.00	0.00	0.00
f)	Laboratory & Scientific equipment	0.00	0.00	0.00	0.00	0.00	0.00
g)	Audio Visual equipment	0.00	0.00	0.00	0.00	0.00	0.00
h)	Cleaning Material & Services	0.00	0.00	0.00	0.00	0.00	0.00
i)	Book binding charges	0.00	0.00	0.00	0.00	0.00	0.00
j)	Gardening	0.00	0.00	0.00	0.00	0.00	0.00
k)	Estate Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
l)	Others - Security and Cleaning	72923269.00	0.00	72923269.00	71551652.00	0.00	71551652.00
m)	Others - Repairs and Maintenance	4917525.00	0.00	4917525.00	15078297.00	0.00	15078297.00
Total		77840794.00	0.00	77840794.00	86629949.00	0.00	86629949.00

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**SCHEDULE 20 – FINANCE COSTS**

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a) Bank charges	40289.00	0.00	40289.00	65211.57	0.00	65211.57
b) Others (specify)	0.00	0.00	0.00	0.00	0.00	0.00
Total	40289.00	0.00	40289.00	65211.57	0.00	65211.57

SCHEDULE 21 - OTHER EXPENSES

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
a) Provision for Bad and Doubtful Debts/ Advances	0.00	0.00	0.00	0.00	0.00	0.00
b) Irrecoverable Balances Written - off	0.00	0.00	0.00	0.00	0.00	0.00
c) Grants/Subsidies to other institutions/ organizations	0.00	0.00	0.00	0.00	0.00	0.00
d) Others (specify)	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00

SCHEDULE 22: PRIOR PERIOD EXPENSES

[Amount in ₹]

Particulars	Current Year			Previous Year		
	Revenue	Capital	Total	Revenue	Capital	Total
1 PDA expenses	0.00	0.00	0.00	0.00	0.00	0.00
2 Salary expenses	0.00	0.00	0.00	0.00	0.00	0.00
3 Rent		0.00	0.00	350000.00	0.00	350000.00
4 Transportation expenses	0.00	0.00	0.00	0.00	0.00	0.00
5 Repairs & Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
6 Communication and Transport	0.00	0.00	0.00	0.00	0.00	0.00
6 Depreciation	16943742.00	0.00	16943742.00	0.00	0.00	0.00
Total	16943742.00	0.00	16943742.00	350000.00	0.00	350000.00

SCHEDULE: 23**SIGNIFICANT ACCOUNTING POLICIES****1. BASIS FOR PREPARATION OF ACCOUNTS**

The accounts are prepared under the Historical Cost Convention unless otherwise stated and generally on the Accrual method of accounting.

2. REVENUE RECOGNITION

2.1 Fees from Students (except Tuition Fees), Sale of Admission Forms, Royalty and Interest on Savings Bank account are accounted on cash basis. Tuition Fees collected separately for each semester is accounted on accrual basis.

2.2 Income from Land, Buildings and Other Property and Interest on Investments are accounted on accrual basis.

3. FIXED ASSETS AND DEPRECIATION

3.1 Fixed assets are stated at cost of acquisition including inward freight, duties and taxes and incidental and direct expenses related to acquisition, installation and commissioning.

3.2 Gifted / Donated assets are valued at the declared value where available; if not available, the value is estimated based on the present market value adjusted with reference to the physical condition of the asset. They are set-up by credit to Capital Fund and merged with the Fixed Assets of the Institution. Depreciation is charged at the rates applicable to the respective assets.

3.3 Books received as gifts, are valued at selling prices printed on the books. Where they are not printed, the value is based on assessment.

3.4 Fixed assets are valued at cost less accumulated depreciation. Depreciation on fixed assets is provided on Straight line method, at the following rates:

Tangible Assets:

1. Land	0%	9. Scientific & Laboratory Equipment	8%
2. Site Development	0%	10. Office Equipment	7.5%
3. Buildings	2%	11. Audio Visual Equipment	7.5%
4. Roads & Bridges	2%	12. Computers & Peripherals	20%
5. Tube wells & Water Supply	2%	13. Furniture, Fixtures & Fittings	7.5%
6. Sewerage & Drainage	2%	14. Vehicles	10%
7. Electrical Installation and equipment	5%	15. Library Books & Scientific Journals	10%
8. Plant & Machinery	5%		

Intangible Assets (amortization):

1. E-Journals	40%
2. Computer Software	40%
3. Patents and Copyrights	9 years

3.5 No depreciation has been charged on group of assets whose opening WDV is Re. 1 except any new additions in such group of assets whereby depreciation has been charged at prescribed rate for the whole year.

3.6 Where an asset is fully depreciated, it will be carried at a residual value of Re.1 in the Balance Sheet and will not be further depreciated.

3.7 Assets created out of Earmarked Funds and funds of Sponsored Projects, where the ownership of such assets vests in the Institution, are setup by credit to Capital Fund and merged with the Fixed Assets of the Institution. Depreciation is charged at the rates applicable to the respective assets. Assets created out of Sponsored Project funds, where the ownership is retained by the sponsors but held and used by the Institution are separately disclosed in the Notes on Accounts.

- 3.8 Assets, the individual value of each of which is Rs. 2000 or less (except Library Books) are treated as Small Value Assets, 100% depreciation is provided in respect of such assets at the time of their acquisition. However physical accounting and control are continued by the holders of such assets.

4. Intangible Assets: Patents and Copyrights, E Journals and Computer Software are grouped under Intangible Assets.

- 4.1 Patents: The expenditure incurred from time- to time (application fees, legal expenses etc.) for obtaining Patents is temporarily capitalised and shown as part of Intangible Assets in Balance Sheet. If application for patents is rejected, the cumulative expenditure incurred on the particular patents is written off to the Income & Expenditure Account in the year the application is rejected.

The expenditure on Patents granted is written off over a life of 9 years on a conservative basis.

- 4.2 Electronic Journals (E- Journals) are separated from Library Books in view of the limited benefit that could be derived from the on-line access provided. E-Journals are not in a tangible form, but temporarily capitalized and in view of the magnitude of the expenditure and the benefits derived in terms of perpetual knowledge acquired by the Academic Departments, Teachers and Research Scholars; Depreciation is provided in respect of E-Journals at a higher rate of 40% as against depreciation of 10% provided in respect of Library Books.
- 4.3 Expenditure on acquisition of software has been separated from computers and peripherals, as apart from being intangible assets, the rate of obsolescence in respect of these is very high. Depreciation is provided in respect of software at a higher rate of 40% as against depreciation of 20% provided in respect of Computers & Peripherals.

5. RETIREMENT BENEFITS

Retirement benefits i.e., gratuity and leave encashment are provided on the basis of actuarial valuation. Capitalized Value of pension and gratuity received from previous employers of the Institution's employees, who have been absorbed in the Institution, is credited to the respective Provision Accounts. Pension contribution received in respect of employees on deputation is also credited to the Provision for Pension Account. The Actual payments of Pension, Gratuity and Leave encashment are debited in the Accounts to the respective provisions. Other retirement benefits viz. Deposit Linked Insurance, Contribution to New Pension Scheme, Medical reimbursement to retired employees and Travel to Home Town on retirement is accounted on accrual basis (actual payments plus outstanding bills at the end of the year).

6. INVESTMENTS

- a. Long term investments are carried at their cost or face value whichever is lower. However, any permanent diminution in their value as on the date of the Balance Sheet is provided for.
- b. Short term investments are carried at their cost or market value (if quoted) whichever is lower.

7. EARMARKED/ENDOWMENT FUNDS

The following long terms funds are earmarked for specific purposes. Each of the funds has a separate bank account. Those with large balances also have investments in Government Securities, Debentures and Bonds and Term Deposits with Banks. The assets created out of Earmarked Funds where the ownership Vests in the Institution, are merged with the assets of the Institution by crediting an equal amount to the Capital Fund. The balance in the respective funds is carried forward and is represented on the assets side by the balance at Bank, Investments and accrued interest.

- 7.1 Corpus Fund** was established in 2012. Institution's share of Consultancy fees and contributions from Research Projects are treated as additions to Corpus Fund. Income from investments of the fund is added to the Fund. The Corpus Fund is utilized for both Revenue and Capital expenditure based on the guidelines issued by the Board of Governor of the Institution from time to time. The assets created out of the Corpus Fund are merged with the assets of the Institution by crediting an equal amount to the Capital Fund. The balance in the Corpus Fund which is carried forward is represented by the balance in Bank Accounts, Investment in Fixed Deposits and Accrued Interest on Investment.

8. GOVERNMENT AND GOI GRANTS

- 8.1 Government Grants are accounted on realization basis. However, where a sanction for release of grant pertaining to the financial year is received before 31 " March and the grant is actually received in the next financial year, the grant is accounted on accrual basis and an equal amount is shown as recoverable from the Grantor.

- 8.2 To the extent utilized towards capital expenditure, (on accrual basis) government grants and grants from GOI are transferred to the Capital Fund.
- 8.3 Government and GOI grants for meeting Revenue Expenditure (on accrual basis) are treated, to the extent utilized, as income of the year in which they are realized.
- 8.4 Unutilized grants (including advances paid out of such grants) are carried forward and exhibited as a liability in the Balance Sheet.

9. INVESTMENTS OF EARMARKED FUNDS AND INTEREST INCOME ACCRUED ON SUCH INVESTMENTS:

To the extent not immediately required for expenditure, the amounts available against such funds are invested in approved Securities & Bonds or deposited for fixed term with Banks, leaving the balance in Savings Bank Accounts.

Interest received, interest accrued and due and interest accrued but not due on such investments are added to the respective funds and not treated as income of the Institution.

10. SPONSORED PROJECTS

- 10.1 In respect of ongoing Sponsored Projects, the amounts received from sponsors are credited to the head "Current Liabilities and Provisions -Current Liabilities -Other Liabilities -Receipts against ongoing sponsored projects." As and when expenditure is incurred /advances are paid against such projects, or the concerned project account is debited with allocated overhead charges, the liability account is debited. Overhead charges recovered from projects are credited to the corpus fund in accordance with the decision of the Board of Governors and Finance Committee of the Institute.

The Institute is custodian of only the balances appearing in the bank accounts of the respective sponsored projects. The assets are booked only when the interest vests or is transferred to the institute by the project sanctioning authority.

- 10.2 In addition to the Earmarked Fund for the Junior Research Fellowships funded by the Institute Grants Commission, Fellowships and Scholarships are also sponsored by various organizations. These are accounted in the same way as Sponsored Projects except that the expenditure generally is only on disbursement of Fellowships and Scholarships, which may include allowances for contingent expenditure by the Fellows and scholars.
- 10.3 The Institution itself also awards Fellowships and Scholarships, which are accounted as Academic expenses.

11. INCOME TAX

The income of the Institution is exempt from Income Tax under Section 10(23c) of the Income Tax Act. No provision for tax is therefore made in the accounts.

SCHEDULE: 24**CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS****1. CONTINGENT LIABILITIES:**

- 1.1 As on 31st March, 2024, 1 numbers of Court Case filed against the Institution, by former / present employees, tenants and contractors and arbitration cases with contractors, were pending for decisions. The suits filed by employees were establishment - related viz promotions, increments, pay scales, termination etc. The quantum of the claims is not ascertainable. The Claim in the suits and arbitration cases by contractors amounted To Rs. 5.06 lakhs (Previous Year Rs. NIL)
- 1.2. Letters of credit established by the Bank on behalf of the Institution and outstanding on 31.03.24 Rs.**NIL**
- 1.3 Disputed demands in respect of Income Tax Rs. NIL (Previous Year Rs **NIL**).

2. FIXED ASSETS:

- 2.1 Additions in the year to Fixed Assets in Schedule 4 include Assets purchased out of Capital Grants Government of India (OS- 35)The Assets have been created by establishing Credit to Capital Fund to the tune of equivalent fund.
- 2.2 Fixed assets as set out in Schedule 4 do not include assets purchased out of funds of sponsored projects, held and used by the Institution, as project contracts include stipulations that all such assets purchased out of projects funds will remain the property of the sponsors.

The details of such assets are:-

Assets	Rate of Depreciation	Original cost as on 1.4.2023	Additions during the year	Total	Notional Depreciation on opening balance	Notional Depreciation on additions during the year	Total Notional Depreciation	Total Book value on 31. 3. 2024
		A	B	C=A+B	D	E	F=D+E	G=C-F
Tangible Assets								
Scientific Equipment	8%	7081429.52	742074.00	7823503.52	566514.40	59365.90	625880.30	7197623.70
Computer	20%	364068.00	2552712.00	2916780.00	72813.60	510542.40	583356.00	2333424.00
Furniture	7.50%	10,017.75	0	10017.75	751.30	0.00	751.30	9266.45
Total		7455515.27	3294786.00	10750301.27	640079.30	569908.30	1209987.60	9540313.67

3. PATENTS:

An accounting policy in respect of expenditure on Patents is in place as approved by the Board of Governors of the Institute. The accounting for patents has been done as per the policy and depreciation provided for as per rates prescribed.

4. DEPOSIT LIABILITIES:

The amount outstanding as Earnest Money Deposit & Security Deposits amounts to Rs.20844097.05 as on 31.03.2024.

5. EXPENDITURE IN FOREIGN CURRENCY:

- a. Travel– Nil
- b. Others – Nil

6. SUSPENSE ACCOUNT

As on 31st March, 2024 standing at **NIL**.

7. CURRENT ASSETS, LOANS, ADVANCES AND DEPOSITS

In the opinion of the Management, the current assets, Loans, Advances and Deposits have a value on realization in the ordinary course, equal at least to the aggregate amount shown in the Balance Sheet.

8. The details of balances in Saving Bank Accounts, Current Accounts and Fixed Deposit Accounts with Banks are enclosed as attachment '**Annexure-D**' to the **Schedule of Current Assets**.
9. Previous year's figures have been regrouped and re-classified wherever necessary for better presentation of accounts.
10. Figures in the Final accounts have been rounded off to the nearest rupee.
11. Schedules 1 to 22 and underlying annexure are annexed to and form an integral part of the Balance Sheet at 31st March, 2024 and the Income & Expenditure account for the year ended on that date.

12. CURRENT LIABILITIES:

Tuition Fee received in advance for the month of April 2023 to June 2024 has been shown as "Fees received in Advance- Tuition Fee" under Current liabilities in Schedule - 9. All other Academic Receipts have been booked on cash basis.

13. CAPITAL COMMITMENTS

The value of contracts remaining to be executed on Capital Account and not provided for amounts to **Rs. 2454.63 Lakhs as on 31.03.24.**

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA

ANNEXURE A : DETAILS OF EMD & SECURITY DEPOSIT AS ON 31-03-2024

[Amount in ₹]

S.No	Name of the Firm / Company	Amount
1	Earnest Money Deposit	4172215.00
2	PBG	88100.00
3	Security Deposit	16583782.05
4	Withheld ESIC Premium	3176754.00
	Total	24020851.05

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**ANNEXURE B : DETAILS OF STATUTORY LIABILITIES AS ON 31-03-2024**

[Amount in ₹]

Sl.No.	Particulars	Amount
1	TDS - Contracts	575926.48
2	VAT	27967.00
3	TDS - Pay and Allowances	4196738.00
4	TDS - GST	898573.00
5	Professional Tax Payable	720250.00
6	Labour Cess	1353798.00
7	Forest Royalty	2628943.00
	Total	10402195.48

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**ANNEXURE C : DETAILS OF OTHER LIABILITIES AS ON 31-03-2024**

[Amount in ₹]

Sl.No.	Particulars	Amount
1	Audit Remuneration Payable	408909.00
2	Book Purchase	3339645.00
3	Bank Interest payable to MHRD	37367895.00
4	CSAB Administrative Charges	505515.00
5	Electricity Charges Payable	716777.00
6	Excess Fee Refundable	660985.00
7	External Agency Funds- For exams, conference, seminar, etc.	616916.96
8	Hostel Mess Fees	17684219.00
9	PDA Advance (2018-19)	400.00
10	Rent Payable	20911712.00
11	Returned Cheques	539069.10
12	Salary Payable	10741824.00
13	Scholarship Payable to Students	5266109.00
14	Security, Cleaning Charges Payable	7396650.00
15	Stale Cheques	370100.51
16	Sundry Receipts	202760.00
17	SVNIT Surat	124375.00
18	Telephone Expenses Payable	7749.00
19	Vehicle Hiring Charges payable	145817.00
20	Temporary Advance (2016-17)	1440.00
21	Water Charges Payable	305860.00
	Total	107314727.57

NATIONAL INSTITUTE OF TECHNOLOGY, MEGHALAYA**ANNEXURE D : DETAILS OF BALANCES IN SAVINGS BANK / CURRENT / FIXED DEPOSIT
ACCOUNTS WITH BANKS AS ON 31-03-2024**

[Amount in ₹]

Particulars	Purpose	Account No.	Amount
Current Bank Accounts			
Bank of India	Project	503010210000005	5621.54
Indian Bank	-	7267841597	115254.15
Union Bank of India	Transit House	101221010000038	79232.33
State Bank of India	SBI Collect - Fees Collection	35711256956	167918484.09
State Bank of India	Holding Account	41218128544	25936741.06
State Bank of India	Main Account	32047142365	88114307.46
Total (A)			282169640.63
Savings Bank Accounts			
Canara Bank	General Account	1184101015456	28869436.00
ICICI Bank	NITM Fee (IRG)	332701000053	87940037.00
ICICI Bank	Corpus Fund	747701000081	183180649.00
ICICI Bank	Sustainability Fund	332701000955	4596895.00
ICICI Bank	Imprest Account	747701000206	75314.00
State Bank of India	Hostel Mess Account	37768297245	14731746.72
State Bank of India	SBI FITI	40036592826	5539.00
State Bank of India	SBI Power Jyoti - Fees Collection	34973520929	427782.00
State Bank of India	Recruitment	38070817950	3224790.46
State Bank of India	Project and Consultancy	37935741794	30802.00
State Bank of India	MEITY	40002051159	173871.50
UCO Bank	Fees Account	23730110003381	14894727.46
UCO Bank	Project - Khwairakam	23730110013106	6928.50
UCO Bank	Project - Paresh	23730110015872	-1416.00
UCO Bank	Project - K Dutta - DEITY	23730110016640	1311.00
UCO Bank	Project- RECPTL	23730110019580	-4458.74
UCO Bank	Project - Visvesvaraya	23730110015353	214371.09
UCO Bank	Research and Development	23730110010280	65861909.05
UCO Bank	Gitish K Dutta	23730110015209	12418.83
UCO Bank	Gitish K Dutta	23730110015889	90670.15
UCO Bank	Rajarshi Ray	23730110016657	0.01
Indian Overseas Bank	General Account	05410001042010	4077883.00
Yes Bank	General Account	15288700000360	131927.40
Total (B)			408543134.43
Term Deposits			
Canara Bank			151000000.00
Indian Overseas Bank			64867270.00
Total (C)			215867270.00
Cash In Hand			
Imprest Account			45000.00
Total (D)			45000.00
Total (A+B+C+D)			906625045.06

Registrar

Notes

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Notes

[illegible]

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NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA

BIJNI COMPLEX, LAITUMKHRAH, SHILLONG 793003