NITM

Chronicle

Issue 9; April 2021

Highlights:

- TOYCATHON 2021
- REPUBLIC DAY 2021
- INNOVATION 2021
- HACKATHON 2021
- 2ND RESEARCH CONCLAVE 2021

F2F

with Dean (Research and Consultancy), NIT Meghalaya

Team: How many research and consultancy projects our institute was getting before the pandemic and what are the statistics after the pandemic?

Dean(R&C): If we look at statistics in terms of number of publications, number of conferences, it has not affected that much. There were a little bit more publications in 2019-20 in terms of research publications in SER, SCOPUS indexed journals.

In consultancy projects, most of the consultancies we get are from state governments, their related organizations, and sometimes IAF, India Army, Power Grid Corporation, etc.

Dr. Gitish K. Dutta, Dean (R&C), NIT Meghalaya

In terms of values, in 2018-19 it was around 78 lac, in 2019-20 it was a little less around 38 lac, in 2020-21 it was again around 70 lac. In consultancies, the number is decreasing because of shutdown as we are not getting that number of consultancy projects we earlier used to get. Mostly construction-related works from state governments, organizations are affected, but in terms of values, we are not affected that much.

If we look at statistics in terms of the sponsored research projects, in 2018-19, it was around 2.9 Cr, in 2019-20 we got 2.8 Cr and in 2020-2021 we got around more than 1 Crore from different organizations like SCRB, DST, ISRO, etc. Similarly, we have signed several MOUs with different organizations for collaborative research for the use of infrastructure facilities.

In terms of research facilities, we are facing little problems because as a new institute, we don't have that infrastructure as others already have. But after shifting to a permanent campus, this will be resolved as there we will have CIA (Central Instrument Facilities) and have all kinds of equipment.

Because students are not on campus, they are facing problems in some experimental works, as research scholars are not allowed to come into campus due to COVID. But we are doing well if we look at other institutes, our exams got completed on time and the result was declared on time.

Team: How can B.Tech students get involved in research projects? How will Batch 2020 and Batch 2021 students get interested in research-related activities?

Dean(R&C): We hope that the situation will improve and we will try to call students back, and we also have a COVID response team. A vaccination drive was also organized in the institute. Most of the Ph.D. students took the 1st dose of the vaccine. After coming back to campus B.Tech students can continue their experimental work.

For B.Tech, students are doing numerical and simulation-related projects using software like MATLAB, ANSYS as we have a cloud license. Professors are explaining the theory part and making videos in the labs and then collecting data and sending it back for analysis. Hence, trying to implement some part of NEP, so there will be interdisciplinary projects for B.Tech students. We should focus on some hot research fields like ML, quantum computing, Biomedical engineering, etc.

Team: What happened to those research projects which got stopped due to the pandemic and either students passed out from college or are still not allowed to come to college? What are the steps taken for those projects?

Dean(R&C): 32 sponsored projects are ongoing, sponsored by various organizations like SCRB, DST, ISRO, etc. Some international projects are also there. We have asked for an extension from funding agencies and for most of the projects, they have agreed to extend the date.

From TEQIP-3 also, we are getting funds. Those funds are used to equip the lab and to build the infrastructure. We are one of the best performing institutes under TEQIP-3 and it is above the national average.

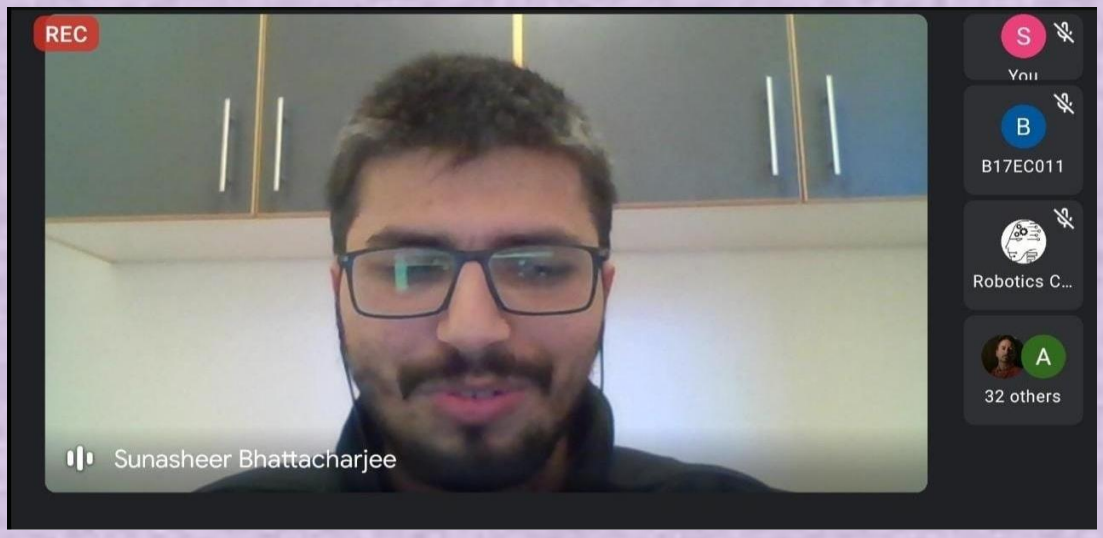
Team: What is our contribution to research projects related to the pandemic?

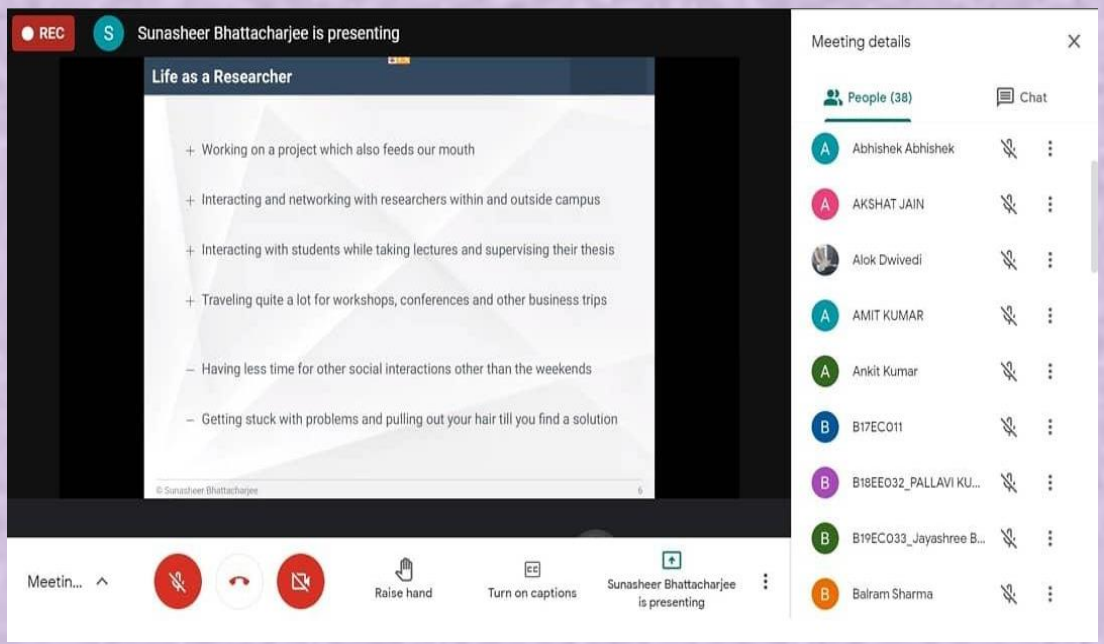
Dean(R&C): We have contributed to COVID-19 research also, submitted some projects like portable mechanical ventilator, Dr. Rakesh Roy has made antiviral gloves, and also got it patented and it was also highlighted by our Ministry of Education.

Alumni Talk

Yabhatriki, the Robotics Club of NIT Meghalaya, has always been working to build a suitable robotics environment in our Institute. Freshers have consistently been a primary focus. They are steadily being familiarised with robotics and its associated assets for the future, making them realize that robotics isn't limited to a particular domain or department and has many scopes for contribution.

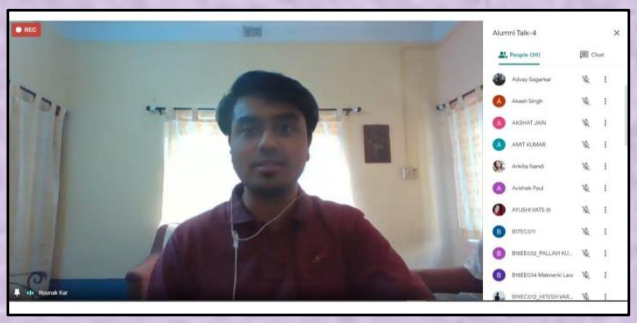
Third Session of Alumni Talk: The Alumni Talk session was with **Mr. Sunasheer Bhattacharjee** (B.Tech 2010-2014), organized on January 03, 2021. He is pursuing a Ph.D. at the Faculty of Engineering**, Kiel University**, Germany. He is also employed as a Research and Teaching Assistant at the Chair of Information and Coding Theory. The guest delivered a talk on "Carving a Career in Scientific Research'', discussing his roadmap of pursuing research as a career.

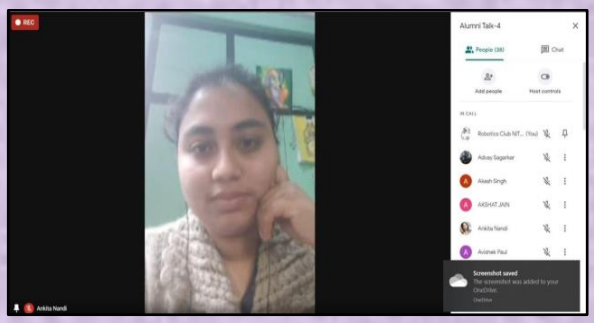




Fourth Session of Alumni Talk: For the fourth session of our ALUMNI TALK series organized on January 10, 2021, the guest, **Mr. Rounak Kar**, B.Tech 2014-2018, Cloud Consultant, **Microsoft**, had a marvelous interaction on “Transitioning to corporate life” with the students.

The session was graced by the presence of another dear alumnus, **Ms. Ankita Nandi**, President Gold Medalist, during B. Tech 2014-2018, currently pursuing Ph.D. at Indian **Institute of Science (IISc) Bangalore**, who also shared her experiences while clearing students' doubts.





Rounak Kar **Ankita Nandi**

A session with Abhishek Acharya: Mr. Abhishek Acharya, B.Tech **2013-2017,** had an interactive session with the second-year students on DATE. He is the Co-Founder of **Nibrus Technologies** and has been contributing there since March 2019.

Industry Based Projects

To be in tune with the working environment and demand of industries, we took the initiative to collaborate with industry people. We are proud to have got great mentors from industries who are our alumni. The following two major projects have been started under their guidance:

→Learning ROS

This project is developed to enhance the knowledge of ROS (Robot Operating System) in Robotics. Also, it is helpful in learning how to design and to get into CAD designing of the end product. It provides an understanding of the main process-flow from ideas to product development.

Essential skills of the project are –

1. It can move from one place to another by ROS commands.
2. It contains all valuable sensors like a laser, lidar, IMU, GPS, Vision, etc.
3. It can navigate through the entire room without colliding.
4. It will follow the shortest root with the help of PID control.

➔ **Connected Plug Project**

This project revolves around the design and development of an IoT-based product with three to four AC intelligent sockets. Some of the cool features of the product are mentioned below:

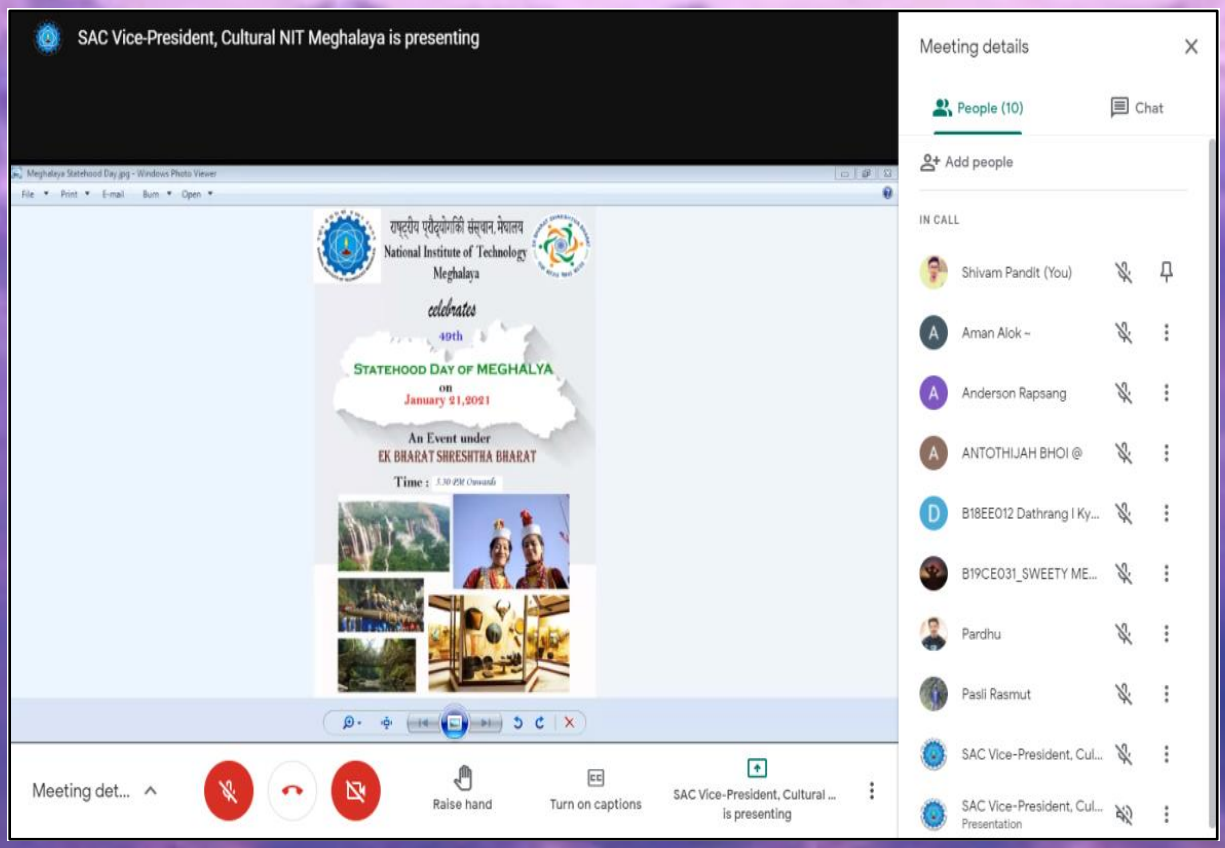
- The electrical parameters of all AC sockets should be monitored.
- The monitored parameters should be communicated to an online hosted server at a particular frequency (such as 1Hz) and visualized in a web-based application.
- In case of any abnormal behavior of any electrical parameters, the socket should be cut from the main supply. The same should be communicated back to the online hosted server.
- Every device should have a unique ID, and users should be able to register their device on a web portal with the same unique ID.
- Users should be able to configure a few important parameters of their device through a web portal.

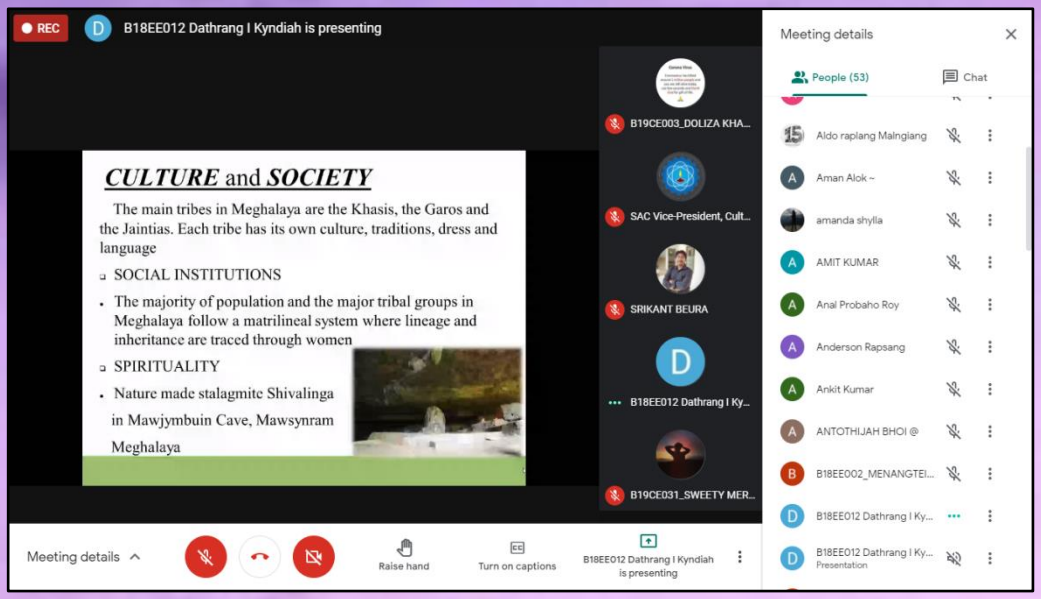
Statehood Day of Meghalaya

The Ek Bharat Shreshtha Bharat (EBSB) Club under the Cultural Committee of the Student Activity Center, NIT Meghalaya, celebrated the "49th Statehood Day of Meghalaya" on January 21, 2021. Due to the ongoing pandemic, the event was celebrated in virtual Mode through Google Meet.

Dr. Biplab K. Debnath, Vice-President, Student Activity Center hosted the event. First, the Dean (SW) addressed the meeting, emphasizing the importance of observing such an important day in the state's history and urging it to be proud of its diverse culture. This was followed by a short address by the Director (in-charge), NIT Meghalaya. Then, a few cultural activities followed, such as a Jaintia song by Antothijah Bhoi, a Khasi recitation by Iphijinia Jyrwa, a presentation on Meghalaya by Dathrang I Kyndiah, followed by a Khasi recitation by Doliza Kharlyngdoh, and a Khasi song by Sweety Merry Jyrwa Nongsiej.

The event ended shortly, and Dr. Paresh Nath Chatterjee, President, Student Activity Centre (SAC), presented with the vote of thanks and applauded the students for their commendable performance despite the online mode.

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CULTURE and SOCIETY
The main tribes in Meghalaya are the Khasis, the Garos and the Jaintias. Each tribe has its own culture, traditions, dress and language
SOCIAL INSTITUTIONS
The majority of population and the major tribal groups in Meghalaya follow a matrilineal system where lineage and inheritance are traced through women
SPIRITUALITY
Nature made stalagmite Shivalinga in Mawjymbuin Cave, Mawsynram Meghalaya
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SAC Vice-President, Cult...
SRIKANT BEURA
B18EE012 Dathrang I Ky...
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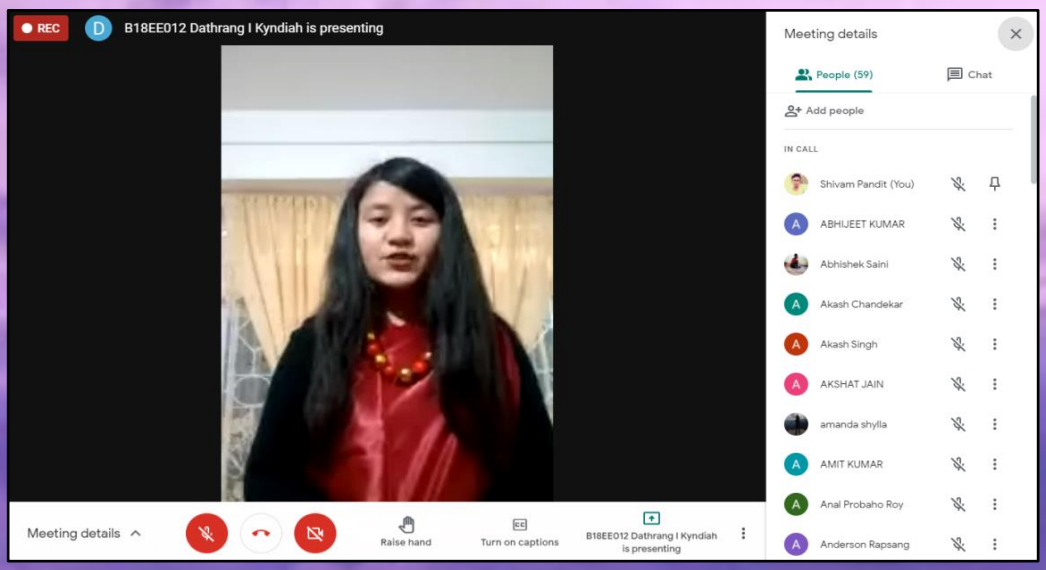
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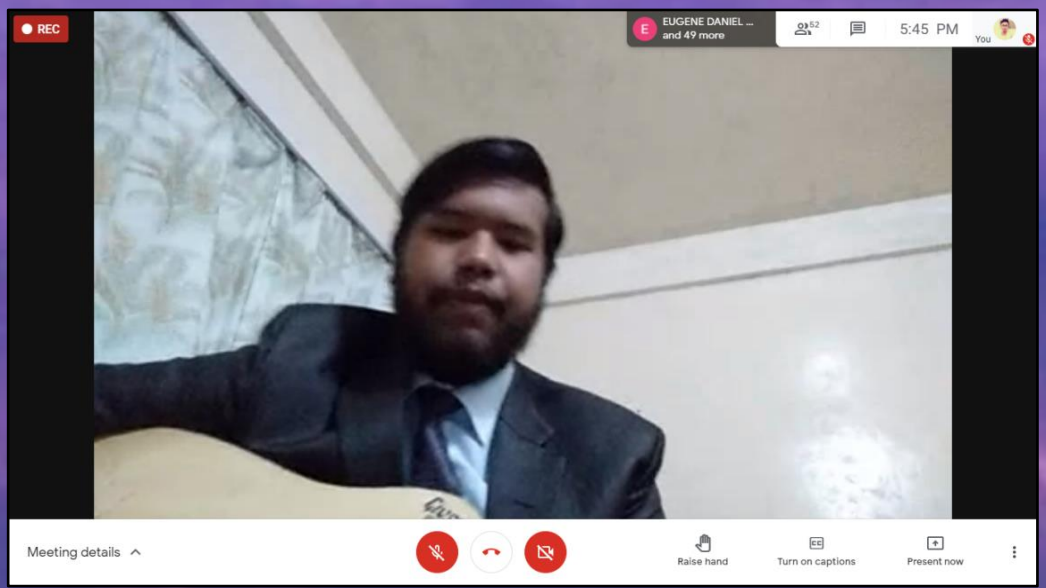
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Present now

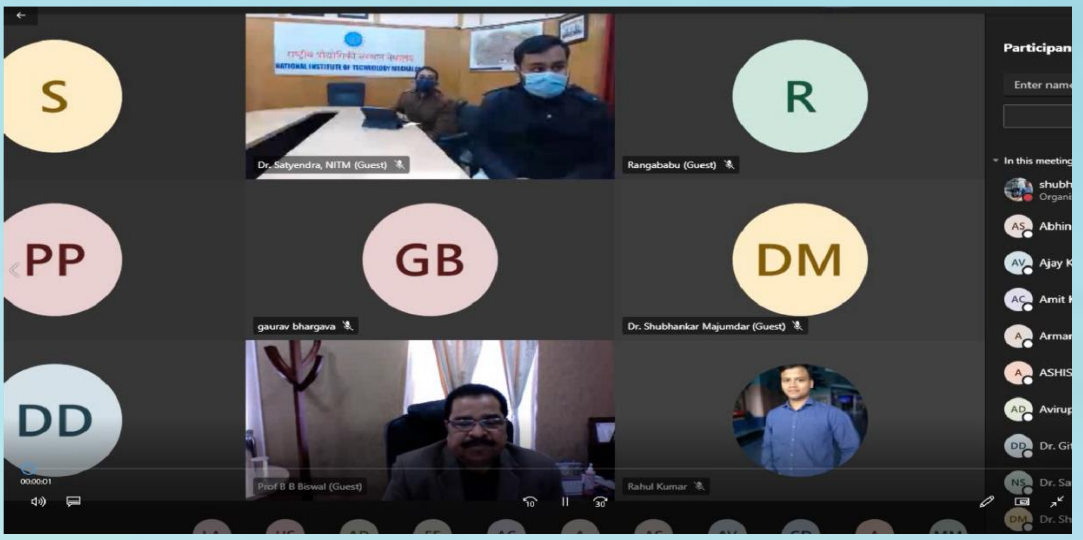
A Brief report on five-day online FACULTY DEVELOPMENT PROGRAMME (FDP) on
Emerging trends in RF, Energy Devices, and Circuits
held during Feb 22-26, 2021.
Sponsored by: AICTE, India (Under the MoU between NIT Meghalaya & AICTE)

Hosted: Online Mode

Aiming to provide intense training on RF and energy device and circuits, a five-day workshop on 'Emerging trends in RF and Energy device and Circuits' held during Feb 22-26, 2021, by the Department of Electronics and Communication Engineering, NIT Meghalaya, having a rank of 61 as per NIRF 2020. The event was hosted online.

Speaking on the inaugural occasion, Prof. B. B. Biswal, Director of NIT Meghalaya, said, "The 21st century is only two decades old, and, certainly, one of the most powerfully transformative technologies and enablers for the human society of this century is going to be emerging devices and circuits. It is a well-established idea that compound semiconductor-based devices are set to transform global productivity in the upcoming sixth-generation (6G) wireless technology and power technology. According to Masayoshi Son (CEO of Softbank), "People usually compare the computer to the human being's head. I would say that hardware is the skull, the semiconductor is the brain within the head, the software is the wisdom, and data is the knowledge". It is no secret that this transformation is being, to a large extent, for radio frequency (RF) and power technology fuelled by robust semiconductor materials such as Gallium Nitride, Gallium Oxide, photo-electro-chemical materials, etc.

However, traditional Complementary Metal-oxide-semiconductor (CMOS) technology is not efficient for RF and power technology. The use of compound semiconductors highly impacts this field. There are numerous developments of compound semiconductors material in the various RF and Power application areas. RF and power technologies are the backbone of our human society."



On the first day of the FDP (22/02/2021)

Dr. Avirup Dasgupta, IIT Roorkee, delivered a lecture on “Design Considerations and Compact Modelling of GAAFETs for Upcoming Technology Nodes”, Dr. Ankush Bag, IIT Mandi spoke on “Ga2O3 based power electronics”, Dr. G. S. Javed, Intel Corporation, presented a lecture on “RF Energy Harvesting”.

On the second day of the FDP (23/02/2021)

Dr. P. K. Tiwari, IIT Patna, gave the lecture on “Self Heating effects in Multi-gate MOSFET”, Dr. Nijwm Wary, IIT Bhubaneswar, spoke on “CMOS circuit design for high-speed serial wireline link” Dr.Mahendra Sakare, IIT Ropar, presented a lecture on “Broadband CMOS circuit design techniques”.

On the third day of the FDP (24/02/2021)

Dr. Jawar Singh, IIT Patna, delivered a lecture on “VLSI Architecture for In-memory and Neuromorphic Computing”, Prof. Soumen Das, IIT Kharagpur, spoke on “Wearable Biosensors – MEMS perspective”, Dr. Sutripto Majumder presented a lecture on “Emerging Trends in the Nanostructured materials for energy conversion devices and its implementation for water splitting”.

On the fourth day of the FDP (25/02/2021)

Dr. Digbijoy N. Nath, IISc Bangalore, delivered a lecture on “Basics of GaN HEMT for Power Electronics”, Dr. Rahul Kumar, BITS Pillani, spoke on “III-As nanostructure for solar cell and GaAs/Sapphire for microwave photonics”, Dr. Sunil Pandey, Intel, presented a lecture on “Recent Challenges in LNA Design for Ultra-Wide Band (UWB) Application”.

On the last day of the FDP (26/02/2021)

Prof. Sudeb Dasgupta, IIT Roorkee, delivered a lecture on “Neuromorphic Computing for Low Power”, Prof. Yogesh Chauhan, IIT Kanpur, spoke on “RF Wireless, 5G and GaN HEMT: Characterization and Modelling using ASM-HEMT”, Dr. Manish Mathew, CSIR- CEERI Pilani, presented a lecture on “III-Nitrides photonic devices and their applications”.

The event was basically designed to bring the colleges and universities' electronics engineering faculties/teachers through online mode in a single platform and share the information on RF and energy devices and circuits recent trends. Around 110 colleges and universities' faculties participated in the online Faculty Development Program from various parts of India.

Dr. Shubhankar Majumdar, assistant professor in electronics and communication engineering, Coordinator of the event. Dr. Satyendra Singh Yadav, assistant professor in electronics and communication engineering, Co-coordinator of the event. The workshop was organized jointly by the Department of Electronics & Communication Engineering, NIT Meghalaya, and AICTE under the MoU.

Students' Achievements

- Two students from NIT Meghalaya: **Ritik Mani Yadav (B19CS027)** and **Keshav Krishna (B19CS024),** participated in Quizophile, a national-level quiz event organized by Trendfienza, the national fest of Christ College on March 30, 2021. A total of 40 teams participated, and the students bagged the 1st Runner up prize.

- **Sidhartha Kumar (B19ME001)** participated in an online quiz organized by the Regional Outreach Bureau, Shillong, on Twitter, on January 30, 2021, on the theme "*Swachh Bharat*" and "*Swachh Shillong*," and was declared one of the winners of the quiz.

GOVERNMENT OF INDIA
MINISTRY OF INFORMATION & BROADCASTING
REGIONAL OUTREACH BUREAU, SHILLONG

Certificate

This is to certify that Shri / Smt/ Ms. Siddhartha Kumar has been chosen as the winner in the Online Quiz on SWACHHTA organized through Twitter during the Swachhta Pakhwada of Ministry of Information & Broadcasting on January 30, 2021.

Place: Shillong

Director

#SwachhBharat
#SwachhShillong

GATE Achievements

The following students studying in the various departments of the National Institute of Technology Meghalaya have qualified for the GATE - 2021 Examination held in February 2021.

Name	Roll	Department	Score	Rank
Ankita Bhowmick	P19HS001	HSS	532	225
Priya Gurung	S19CH005	Chemistry	49.33	1236
Emmanuel Vemuri	B17EE033	EE	373	
Nikita Agarwal	T19CS007	CSE	535	3180
Sanchiano Suja	B17CS011	CSE	246	32474
Plabon Saikia	S19CH002	Chemistry	36.67	3542
Adarsh Verma	B17CE010	CE	361	14656
Pardip Dowrah	B17EE009	EE	328	13493
Vivekanand Mohapatra	S19PH001	Physics	433	1544

Publications/ Achievements: PhD scholars

- **Namrata Deka:** N. Deka, J. Barman, P. Gawas, H. Parse, B. Kakade, V. Nutalapati, **G. K. Dutta**, Nitrogen-Doped Microporous Carbons Synthesized from Indole-Based Co-polymer Spheres for Supercapacitor and Metal-Free Electrocatalysis. *Energy Fuels*, **2021**, *35*, 2785-2794.

- **Deepak Gupta:** Computational, dielectric and electro-optical analysis of an orthoconic antiferroelectric mesogen having superstructure in its reduced symmetry phase, Deepak Gupta, Przemysław Kula, Ayon Bhattacharjee, Ferroelectrics.

- **Deepak Gupta:** Investigation of a partially fluorinated chiral antiferroelectric liquid crystalline material with large negative dielectric anisotropy, Deepak Gupta, Przemyslaw Kula, Ayon Bhattacharjee, Journal of molecular liquids.

- **Priyanki Kalita:** Title of the paper: Potential liquid crystal-based biosensor depending on the interaction between liquid crystals and proteins. The work has been carried out by Ms. Priyanki Kalita under Prof. Ayon Bhattacharjee, Department of Physics, and NIT Meghalaya. The studies were taken in collaboration with Prof. Ranjan K Singh, Department of Physics, and Banaras Hindu University. Journal name: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy.

- **P. Gupta:** S. Allu, D. P. Karothu, T. Panda, N. K. Nath, Organic Molecular Crystals with Dual Stress-Induced Mechanical Response: Elastic and Plastic Flexibility, Crystal Growth Des. Publication Date: March 10, 2021, https://doi.org/10.1021/acs.cgd.0c01119.

- **S. W. Hussain:** and A. Dandapat, “Match-line controlled content addressable memory: low-power and high-speed searching,” Thesis work presentation in Student Research Forum, 34th International Conference on VLSI Design & 20th International Conference on Embedded Systems 2021 (VLSID 2021), India (Virtual); during February 20 - 24, 2021, Recognition: Top 12 Thesis Works.

Journal Publications

P. Gupta, S. Allu, D. P. Karothu, T. Panda, N. K. Nath Organic Molecular Crystals with Dual Stress-Induced Mechanical Response: Elastic and Plastic Flexibility, Cryst. Growth Des. Publication Date: March 10, 2021, https://doi.org/10.1021/acs.cgd.0c01119. (Department of Chemistry, NIT Meghalaya.)

Book Chapter

A. Singha Roy, S. Sarmah, S. Das, Effects of Glycation on Serum albumin, in A Closer Look at Glycation, Nova Science Publishers, 2021, pp 21-78. ISBN: 978-1-53619-176-9 (Department of Chemistry, NIT Meghalaya.)

Events/ workshops/ conferences organized by the department

Workshop on "Astroparticle Physics and Cosmology"

Department of Physics, NIT Meghalaya a Five-day online workshop on "Astroparticle Physics and Cosmology" sponsored by TEQIP-III, during March 12-16, 2021

Seminar on Theoretical and Computational Chemistry

Department of Chemistry, National Institute of Technology Meghalaya organized a one-day seminar on Theoretical and Computational Chemistry funded by TEQIP-III on March 13, 2021.

Oral/ poster presentation award received by faculties/students

- **Rishika Chakraborty:** Best Poster Award at Research Conclave 2021, Department of Chemistry, NIT Meghalaya.

- **Poonam Gupta:** Best Research Work Demonstration Award at Research Conclave 2021, Department of Chemistry, NIT Meghalaya.

- **Poonam Gupta:** Best Oral Presentation Award at Research Conclave 2021, Department of Chemistry, NIT Meghalaya.

Report on Research Conclave 2021, NIT Meghalaya

NIT Meghalaya celebrated its second Research Conclave 2021 on 28th February 2021 and 1st March 2021. Chief Guest Shri P. L. N Raju graced the inauguration ceremony, Director NESAC, who has given an inspirational talk on "Space research for building the nation, " which is addressed by Prof. Harish Das, Director I/C the students to be passionate about their research activity and target towards quality research outputs. Dean R&C- Dr. Gitish K. Dutta and Dean Academics Prof. Gayadhar Panda have shared their views on the research conclave. The first day of the event concluded with unveiling the souvenir of the 2nd Research conclave 2021.

The second-day event started with poster presentations from 9 AM onwards. Prof. Sushmita Mitra gave the first expert talk, **ISI Kolkata,** on " From Learning to Deep Learning." Two similar words started from 10:30 AM by **Prof. Radhakant Padhi**, **IISc Bangalore**, and **Prof. Samaresh Bhattacharya**, **Jadavpur University**. Professor Padhi delivered his talk on "Advanced guidance of Aerospace Vehicles," and Professor Samaresh Bhattacharya, Jadavpur University, delivered his speech on "The Pain and Gaining of doing Research."

During the conclave, overall, 78 young research scholars (full time, project fellows, and part-time sponsored) showcased their research work in the form of poster presentations, 24 students presented the oral paper presentations across two parallel tracks consisting of Track-1 (Electrical, Mechanical, Civil Engineering and Computer science and Engineering, Electronics and Communication Engineering), Track-2 (Mathematics, Physics, Chemistry, Humanities, and Social Science). Two students demonstrated their research work in short video form.

There were 18 Panel members to judge all the technical sessions. There were 13 Panel members from NIT Meghalaya, four from NEHU, and one from EFLU Shillong. The names of the external Panel members are Dr. Subash Acharya ECE Dept, NEHU, Prof. Ghanashyam Bez, Chemistry Dept NEHU, Dr. A. K. Maji I.T Dept, NEHU, Dr. Rajkumar Sunil Singh, Basic science and Humanities Dept, NEHU, Dr. Rosy Yumnam, English Dept, EFLU Shillong) and the NIT Meghalaya Panel members are Dr. Sanjoy Debbarma, EE Dept, Dr. Diptendu Sinha Roy, CS Dept, Dr. Bikash K. Sarkar, ME Dept, Dr. Sushmita Sharma, CE Dept, Dr. Manideepa Saha, MA Dept, Dr. K. SenthilKumar, PH Dept, Dr. Prabir Saha, EC Dept, Dr. Kishore Debnath, ME Dept, Dr. Alok Chakrabarty, CS Dept. , Dr. Saikat Mukherjee, MA Dept. , Dr. Wandahun Longtrai Reenbohn, PH Dept. , Dr. Paresh Nath Chatterjee, CY Dept. , Dr. Paonam Sudeep Mangang, HS Dept.

Mr. Pratikanta Mishra, Electrical Engineering got **1st prize, Mr. Moirangthem Santoshkumar Singh,** Electronics and Communication Engineering, got **2nd prize, Ms. Natasha Kakati,** Civil Engineering, received **third prize in Poster Presentation, Engineering discipline. Similarly in Science, Humanities and Social Science Discipline Ms. Rishika Chakraborty** from chemistry Department got **1st prize, Ms. Binandita Barman** from Mathematics 2nd **prize and Mr. Deepak Gupta** from Physics Department stood third prize. In oral paper presentations, Mr. Sheikh Wasmir Hussain, Electronics and Communication Engineering got **1st prize with a cash prize of Rs 5000, Mr. Kaibalya Prasad Panda**, Electrical Engineering got **2nd prize with a cash prize of Rs 2000** and Mr**. C. Lalengmawia,** Computer Science and Engineering Department stood third prize with a cash prize of Rs 1000 in the Engineering track. **Oral paper presentations in Science, Humanities and Social Science Discipline, Ms. Poonam Gupta**, Chemistry got **1st prize with a cash prize of Rs 5000, Ms. Arundhati**

Ashangbam, HS, got **2nd prize with a cash prize of Rs 2000 and Mr. Susmay Nandi**, Mathematics received the third prize with a cash prize of **Rs 1000. Ms. Poonam Gupta**, Chemistry, stood **1st in Research Work Demonstration, with a cash prize of Rs 5000. The Institute Best Research Award for the year 2021 was presented to "Mr. Kaibalya Prasad Panda," from the Dept. of Electrical Engineering, with a cash prize of Rs 10000 for publishing six reputed SCI journals and seven conferences as the first author and has filed two patents.**

Institute Best Research Award for the year 2021 :
Mr. Kaibalya Prasad Panda

Research Work Demonstration :	
Prize	**Name**
1st	**Ms. Poonam Gupta**

Winners in Engineering Discipline :		
Events	**Prize**	**Name**
Poster Presentation	**1st**	**Mr. Pratikanta Mish**
	2nd	**Mr. Moirangthem Santoshkumar Singh**
	3rd	**Ms. Natasha Kakati**
Oral Paper Presentation	**1st**	**Mr. Sheikh Wasmir Hussain**
	2nd	**Mr. Kaibalya Prasad Panda**
	3rd	**Mr. C. Lalengmawia**

Winners in Science, Humanities, and Social Science Discipline :		
Events	**Prize**	**Name**
Poster Presentation	**1st**	**Ms. Rishika Chakraborty**
	2nd	**Ms. Binandita Barman**
	3rd	**Mr. Deepak Gupta**
Oral Paper Presentation	**1st**	**Ms. Poonam Gupta**
	2nd	**Ms. Arundhati Ashangbam**
	3rd	**Mr. Susmay Nandi**

The dignitaries of the valedictory function, our Director in Incharge, Prof. Harish Das, Chief Guest, Shri Santanu Borgohain, Joint Director, NEILIT, Shillong, our TEQIP coordinator, Prof. Ayon Bhattacharjee, and Dean (AA), Prof. Gayadhar Panda congratulated all the awardees and handed over the prizes for the winners. Further, Dean (AA), Prof. Gayadhar Panda, gave a concluding remark by congratulating the students, faculty, and staff for the successful conduction of the second Research Conclave 2021.


2ND RESEARCH CONCLAVE
RESEARCH CONCLAVE 2021

Workshop on Role of Computational Fluid Dynamics technique for the solution of Industrial Problems

The Department of Mechanical Engineering, National Institute of Technology Meghalaya, organized a five-day workshop on **"Role of Computational Fluid Dynamics technique for the solution of industrial problems"** during **March 08-12, 2021,** sponsored by **TEQIP-III**. **Prof. Bibhuti Bhusan Biswal**, Director, NITM, was the patron of the workshop. The Workshop coordinators were Dr. Bikash Kumar Sarkar, Assistant Professor, Department of ME, and Dr. Harish Chandra Das, Department of ME.

The resource person Dr. Vivek Vitankar, Founder Director Fluid Dimension, Pune, delivered his lecture and demonstrated industrial problems. Dr. Manoj Kumar Moharana and Dr. Souvick Chatterjee shared their expert knowledge in different technical sessions. Dr. Ravi Aglave, Director, Energy & Process (Simulation) at Siemens Digital Industries Software, Dr. Jonas Edman, Director, Global Academic Business Development for Simcenter Star CCM+ at Siemens Digital Industries Software and Dr. Thomas Eppinger, Technical Specialist CPI/Reaction Engineering at Siemens Digital Industries Software delivered the Keynote speech in the workshop.

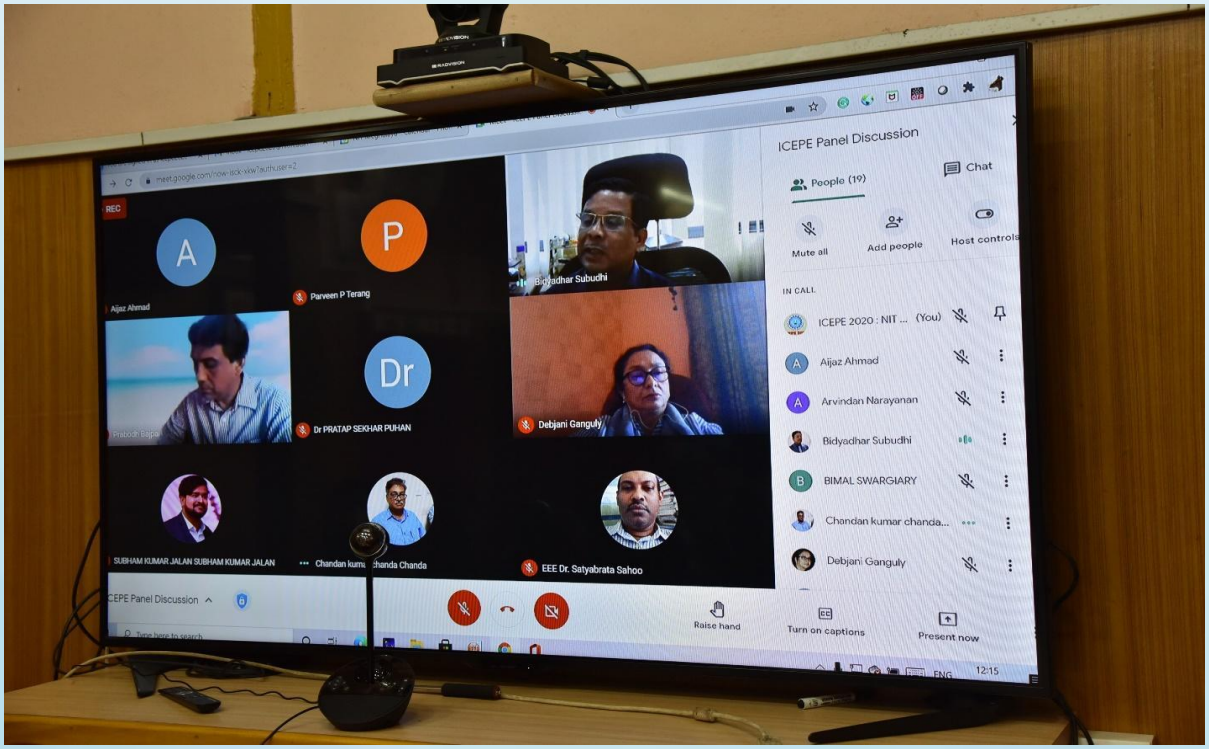
In almost all industrial and natural processes, fluid flow is an inherent aspect, along with mass and energy transport. Computational Fluid Dynamics (CFD) can be used for visualizing the fluid flow, thermal, and species transport in any engineering domain. The success of CFD is its ability to simulate flow within proximity of working conditions. This workshop was organized to keep students equipped with modern industrial needs.

The participants acquired knowledge on **"CFD analysis of Conjugate heat transfer and Micro-Channel Heat Sink, CFD analysis of Toxic gas dispersion and Chimney exhaust gas analysis, CFD analysis of flow over body and drag coefficient calculation, Introduction to geometry creation and discretization in Star CCM+"** etc. In this program, 131 participants attended the workshop.

Some Photographs of the workshop

3rd International Conference on Energy, Power, and Environment

The Department of Electrical Engineering, National Institute of Technology Meghalaya, organized the 3rd IEEE International Conference on **"Energy, Power, and Environment (ICEPE 2020)"** from **March 05-07, 2021, sponsored** by **the IEEE Applications Society IEEE Kolkata Section**. The conference's central theme was "**Towards Clean Energy Technologies**," focusing on promoting research in various areas of Renewable Energy Integration. There were various technical events such as Keynote Talks and Plenary Sessions from eminent speakers. About 300 technical paper submissions were received worldwide, and only 149 were accepted for presentation after an extensive review process. Finally, 135 papers were presented at the conference.



Some Photographs of the conference

TEQIP-III Sponsored one-day Seminar on Theoretical and Computational Chemistry

The Department of Chemistry, National Institute of Technology Meghalaya, organized a one-day seminar on **"Theoretical and Computational Chemistry"** on **March 13, 2021,** sponsored by **TEQIP-III**. **Prof. Bibhuti Bhusan Biswa**l, Director, NITM, was the patron of the workshop. Dr. Amit K. Paul, Assistant Professor, Dept. of Chemistry, convened the seminar.

The one-day seminar aimed to deliver on concepts that would help understand Theoretical and Computational Chemistry basics. The panel provided in-depth knowledge in Electronic Structure Theories, DFT Calculations, MD Simulations on Chemical and Biological Systems, Statistical Mechanics, and Quantum Dynamics. The various resource persons were: Prof. Debasis Mukhopadhyay from the University of Calcutta, who gave a talk on Electronic Structure Theories; Dr. Biplab Sarkar, North Eastern Hill University, who talked about DFT Calculations; Dr. Jagannath Mondal from TIFR Hyderabad, who presented on Molecular Dynamics Simulations on Chemical and Biological Systems; Dr. Rajarshi Chakrabarti from IIT Bombay who spoke about Statistical Mechanics and Dr. Manabrendra Sarma from IIT Bombay who talked about Quantum Dynamics.

In addition, this seminar also encouraged young and upcoming researchers for theoretical research, which may provide new research endeavors in the challenging domains of this field.

TEQIP-III Sponsored Workshop on Astroparticle Physics and Cosmology

The Department of Physics, National Institute of Technology Meghalaya, organized a five-day workshop on **"Astroparticle Physics and Cosmology"** from **March 12-16, 2021,** sponsored by **TEQIP-III**. Prof. Bibhuti Bhusan Biswal, Director, NITM, was the patron of the workshop. The Organizing Secretaries for the event were Dr. Arpita Nath, Assistant Professor, Dept. of Physics, and Dr. K. Senthilkumar, Assistant Professor, HOD (in-charge), Dept. of Physics. The event was coordinated by Dr. Alekha C. Nayak, Assistant Professor, Dept. of Physics.

The five-day workshop was designed to address recent developments in particle physics, astrophysics, and cosmology, which served as an interdisciplinary platform for researchers to share and enhance their research activity. A total of 16 resource persons from various institutes, including two researchers from abroad universities, delivered plenary talks on various aspects of physics and cosmology such as Dark Matter, Neutrino Physics, Gravitational Waves, and Cosmic Microwave Background.

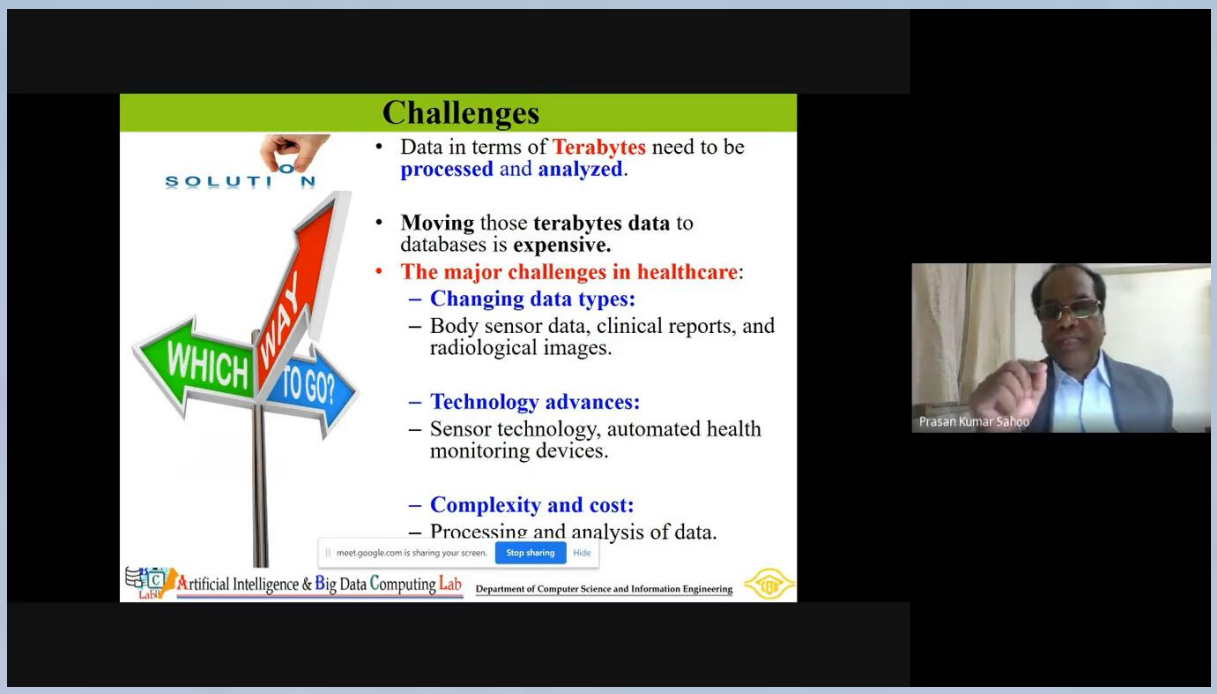
Report of AICTE Sponsored Five-Days Online Short Term Training Programme (STTP)

AICTE Sponsored **Five-Days Online Short Term Training Programme (STTP) on Artificial Intelligence and its Societal Applications** was successfully organized by the **Department of CSE**, NIT Meghalaya during **March 22-26, 2021**. The programme was inaugurated by Dr. Diptendu Sinha Roy, Associate Professor, and co-coordinated by Dr. Vipin Pal, Assistant Professor, and Dr. Surmila Thokchom, Assistant Professor. The inaugural session was presided over by **Prof. B. B. Biswal**, Director, NIT Meghalaya, and **Prof. Prasan Kumar Sahoo**, Director, Artificial Intelligence & Big Data Computing Lab. At the same time, **Prof. Prasun Dutta**, Department of Computer Science and Information Engineering, Chung Gung University, Guishan, Taiwan, was the honored Chief Guest.

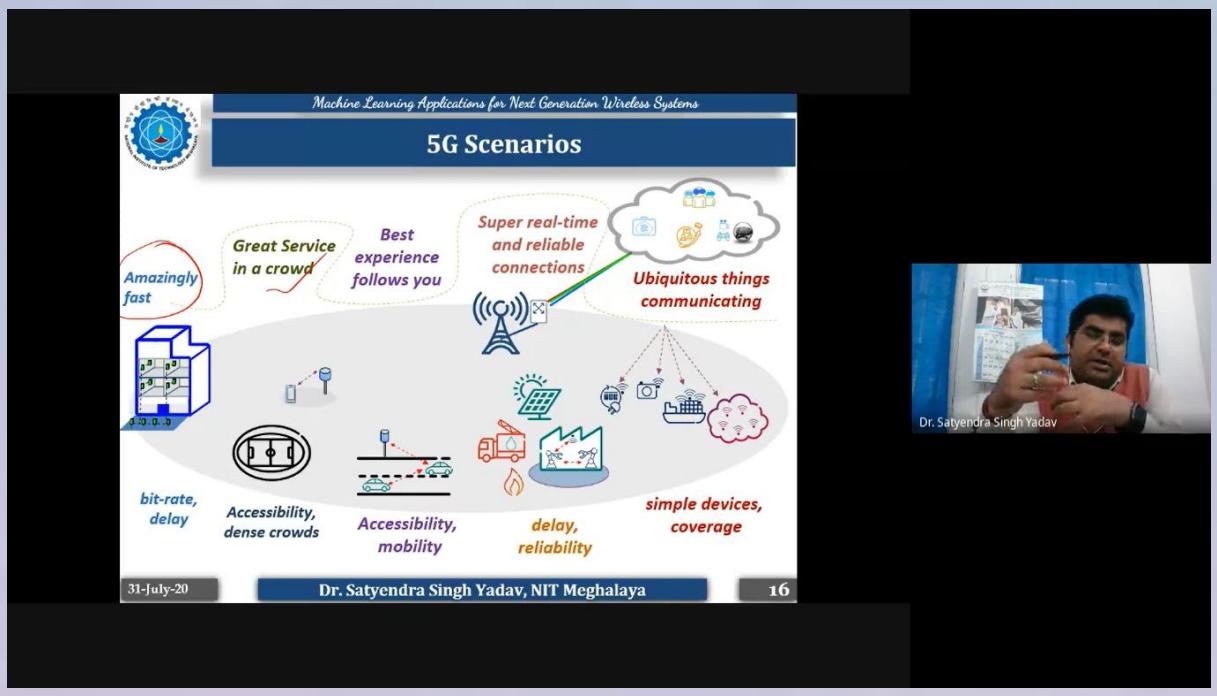
The inaugural session was followed by **15** expert lecture sessions spread out over five days, with three lectures each day. On the day I, the first session was taken by Prof. Prasan Kumar Sahoo on the topic of "**Medical Images Analysis with Deep Learning for Disease Prediction,"** the second session was on the topic "**Text Mining"** by Dr. Toyota, and session three was delivered on the topic of "**Deep learning for Medical Applications"** by Dr. Kuldeep Singh. On day two, the first session was on the subject of "**Deep Learning in Healthcare – How It's Changing The Game"** by Dr. A. K. Luhach, the second session was taken on the topic of **"Violence Recognition using the Convolutional Neural Network"** by Dr. C. Maurya, and session three was taken by Mr. Subhash Kumar on the case of "**Applications of Artificial Intelligence in Power System."** On day three, session one was on the topic of **"Machine Translation"** by Dr. Thoudam Doren Singh, session two was on the topic **"Introduction to Deep Learning"** by Dr. Manoj Kumar, and session three was on the topic **"Data Stream Mining"** by Dr. D. Chutani. On day four, the first session was taken by Dr. Amit Agarwal on the topic **"Application of AI on Social Media Text,"** the second session was on the topic **"e-Governance and NIC: Catering to the needs in Covid 19 times"** by Mr. T. Dkhar, while the third session was on the subject of **"AI for Automatic Grid Monitoring and Control"** by Dr. D. S. Roy. On the last day of the programme, the first session was taken on the **"Importance of AI in Mobile Service Management"** by Mr. Sabyasachi Pal, the second session was on the topic **"AI for 5G"** by Dr. Satyendra Singh Yadav, and the last session was taken on "**Road Environment Perception for Autonomous Driving"**

by Dr. D S Roy. At the end of the previous day's lecture, an online quiz was mandatory for every candidate to pass, to be awarded a certificate.

Day 01, Session 01:



Day 05, Session 14:



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