I am very glad to welcome you to yet another issue of Technodaya, NITAP Newsletter.

Last two months, Oct-Nov, many academic, research and outreach activities were convened at NITAP to envision a few milestones of our mission.

In academic collaboration, MoUs with NPTI, Guwahati, NEAPS, Jorhat & SCC, Ziro were signed for academic & research exchange and collaboration. Dr. Paul, Director, Indo-German Science & Technology Centre visited NITAP for research collaboration. As research & development, faculty members of NITAP presented 13 research proposals at NECTAR and the result is yet to be announced. I wish them best of luck. As an outreach programmes, NITAP co-organized two conferences with University of Rajasthan and Siksha ‘O’ Anusandhan, Bhubaneswar. Dept of MH organized EDP&TC for ITI, Yupia, Dept of BAS organized FDP for school teachers of Arunachal Pradesh and Inter-School Science Exhibition by Addovedi Committee and Start-up Cell. For students, Peace Club and MESS were inaugurated. Ms. Tassar Pana, PhD Scholar from CE got first prize for her paper presented at IIT Kanpur. Congratulations to her!

It’s pleasure to share a good news with you that TEQIP, NITAP secured first position on fund expenditure among all NITs. It ensures that the performance of NITAP is outstanding.

With the note, I seek the whole-hearted cooperation of all NITAPians in achieving institute’s vision and mission.

With Best Wishes
Prof. Pinakeswar Mahanta
Director, NIT Arunachal Pradesh
Academic Activity

Memorandum of Understandings (MoU)
1. Memorandum of Understanding has been signed between NITAP represented by the Principal, Dr. Fr. Allwyn and Saint Claret College, Ziro (SCCZ), represented by the Principal, Dr. Pinakeswar Mahanta, and North East Agro Products & Services (NEAPS), Jorhat, Assam on 13th Nov, 2019. In this endeavour, NEAPS will collaborate with NITAP in different academic and administration affairs like faculty/student exchange, training program.

2. Memorandum of Understanding has been signed between NITAP and National Power Training Institute (NPTI), Guwahati on 30th Oct 2019. In this endeavour, NPTI and NIT will jointly work to accelerate, expand and achieve the national mission and aspiration in the area of electric power through trainings.

3. A MoU has been signed between NITAP and North East Agro Products & Services (NEAPS), Jorhat, Assam on 12th Nov, 2019. In this endeavour, NEAPS will collaborate with NITAP in different academic and administration affairs like faculty/student exchange, training program.

Visit of Eminent Professors
1. Dr. R. Paul, Director, Indo-German Science & Technology Centre visited NITAP, Yupia Campus and delivered research opportunities in Indo-German collaboration among faculty members and research scholars, 04 Nov 2019.


4. Dr. Sunil Kumar, Senior Scientist and Co-coordinator, AcSIR, Solid and Hazardous Waste Management Division, CSIR-NEERI, Nagpur delivered lectures at Dept of ECE, NITAP, 16th Oct 2019.

5. Dr. Vivekananda Mukherjee, Associate Professor, Dept. of EE, IIT(ISM) Dhanbad delivered lectures on “Artificial Intelligence & Machine Learning” at Dept of ECE, NITAP, 09 Nov 2019.

6. Prof. Fazal A. Talukdar, Professor, Dept of ECE, NIT Silchar, visited as an external examiner for Ph.D viva voce and defence of Mr. Deboraj Muchahary.

7. Prof. S. K. Srivastava, Professor, Department of Chemistry, IIT, Kharagpur visited as an external examiner for Ph.D viva voce and defence of Mr. Saikat Ghosh.

8. Prof. T. Punniyamurthy, Professor, Department of Chemistry, IIT, Guwahati visited as an external examiner for Ph.D viva voce and defence of Mr. Bholanath Dolai.

9. Dr. Adikanda Parida, Associate Professor, Dept. of EE, NERIST Dr. Anup Nandy, Assistant Professor, Dept of CSE, NIT Rourkela delivered lectures on “Artificial Intelligence & Machine Learning” at Dept of ECE, NITAP, 22 – 26 Oct 2019.

10. Prof. T. Punniyamurthy, Professor, Department of Chemistry, IIT, Guwahati visited as an external examiner for Ph.D viva voce and defence of Mr. Saikat Ghosh.


Paper Publications / Presentations


11. Chukhu Chunka, Subhasish Banerjee, Rajat Subhra Goswami “Technique to generate the secure symmetric key under variable keys environment using Genetic Algorithm” International Journal of Engineering and Advance Technology (IJET) (Scopus indexed).

12. Chukhu Chunka, Subhasish Banerjee, Rajat Subhra Goswami “A Novel Key Generating Scheme of Automatic Variable Key” IEEE International Conference on Advanced Networks and Telecommunications Systems 16-19 December 2019, Goa, India (paper Accepted)

14. Berlin M and Suresh Kumar G “Numerical Experiments on Configuration and Transport of Benzene with Biological Clogging in Vadose Zone” in Environmental Processes, 8, 841-858. (Scopus indexed) 2019


<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Project Title</th>
<th>Investigator &amp; Co-Investigator Name</th>
<th>Area</th>
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<tbody>
<tr>
<td>3</td>
<td>Promotion of Kiwi Fruit Cultivation in Arunachal Pradesh Through Intervention of Improved Kiwi Juice Beverage Production Technologies and Marketing Linkages</td>
<td>Prof. Pinakeswar Mahanta, Director, NITAP &amp; Dr. Pallabi Kalita Hui, Assistant Professor, Department of Biotechnology, NITAP</td>
<td>Food Technology</td>
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<td>4</td>
<td>Design and Analysis of Self-Assembled Nanowire Based Superlattice InGaN/GaN Solar Cells</td>
<td>Dr. Sanjeev Kumar Metya (Asst. Professor, ECE, NITAP) &amp; Dr. Nikhil Deep Gupta (Asst. Professor, ECE, VNIT Nagpur)</td>
<td>Renewable Energy</td>
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<td>5</td>
<td>Rotating Fluidized Bed Dryers with Static Geometry for Drying of Small Grain Products</td>
<td>Dr. Anup Paul, Assistant Professor, Mechanical Engineering NITAP &amp; Dr. Pankaj Kalita Assistant Professor, Center of Energy IIT Guwahati &amp; Prof. Pinakeswar Mahanta Professor &amp; Director, NITAP</td>
<td>Renewable Energy</td>
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<td>6</td>
<td>A Spatiotemporal Analysis of Arunachal Pradesh Landscape Change and its Implications in Forest and Water Resources using an Integrated Cellular Automata Models along with Markov Chain</td>
<td>Dr. A. V. Kumar Assistant Professor, Mathematics, NITAP</td>
<td>Forest Resources</td>
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<td>7</td>
<td>Production of Eco Bricks in North-East region of India using Waste Bamboo Material</td>
<td>Dr. A. K. Atta (Asst. Professor, Chemistry, NITAP) &amp; Dr. Mainak Mallik (Assoc. Professor, Civil Engineering, NITAP)</td>
<td>Bamboo Technology</td>
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<td>8</td>
<td>Experimental and Model Development on Nitrate Migration in Soil along with the Application of Pesticide from Agricultural Field</td>
<td>Dr. M Berlin (Asst. Professor, Civil Engineering, NITAP)</td>
<td>Water Conservation and Hygiene &amp; Sanitation</td>
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<td>9</td>
<td>Impact Assessment of the Ranganadi HEP</td>
<td>Dr. K. R. Singh, Dr. P. K. Swain, Assistant Professor, Dept. of BAS &amp; Mr. Brajagopal Datta, Assistant Professor, Dept. of EE</td>
<td>Renewable Energy</td>
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<td>10</td>
<td>Prediction of Flood in Pare River, Arunachal Pradesh Using Advanced Machine Learning Techniques</td>
<td>Dr. Deepak Gupta, Asst. Professor Dept. of CSE, NITAP &amp; Dr. M. Berlin, Asst. Professor Dept. of Civil Engineering NITAP</td>
<td>Flood Forecast for Disaster Management</td>
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<td>11</td>
<td>An Unconventional Agro Waste Management and Environmental Sustainability: Using Biomass Pellets Based Clean Bio-Fuel Production</td>
<td>Dr. S. K. Jana, Assistant Professor, Dept. of Biotechnology &amp; Prof. Pinakeswar Mahanta Professor &amp; Director, NITAP</td>
<td>Renewable Energy</td>
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<td>12</td>
<td>Improving Energy Efficiency of Lighting System with LED Illumination Controller</td>
<td>Dr. Abhik Banerjee Assistant Professor Department of Electrical Engineering, NITAP &amp; Brajagopal Datta Assistant Professor Department of Electrical Engineering, NITAP</td>
<td>Renewable Energy</td>
</tr>
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<td>13</td>
<td>Development of Paper-based Sensors using Biocompatible Carbohydrates for the Detection of Heavy Metal Ions in Water</td>
<td>Dr. Ananta Kumar Atta Assistant Professor of Chemistry, NITAP &amp; Dr. S. S. Bag, Professor of Chemistry, IIT Guwahati</td>
<td>Water Conservation and Hygiene &amp; Sanitation</td>
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### Support for Institute

**TEQIP III Cell**

**Achievement**

TEQIP, NITAP secured first position on fund expenditure among all NITs. It utilised 74.85% of total allocation up to 30 Sep 2019.

**Faculty Empowerment**

8. Sanjay Mandal, Deputy Registrar attended Management Capacity Enhancement Programme, funded by TEQIP-III at IIM Trichy, 4-6 Nov, 2019.
9. Dr. Sahadev Roy, Assistant Professor (ECE) & Coordinator of Industry Institute Interaction Cell (IIC), participated in India International Science Festival 2019, industry-academia conclave at Biswa Bangla Convention Centre, Kolkata, 5-8 Nov 2019.
10. Dr. Jumrik Taipodia, Dept. of CE, attended ‘Quantification of Seismic Hazard & Mitigation of Induced Effects in NER’, funded by TEQIP-III at IIT Guwahati, 8-9 Nov 2019.
research to evolve sustainable project for people with eco friendly climate resilient technology, funded by TEQIP-III at IIT Guwahati, 15-16 Nov, 2019.


20. Dr. M. Berlin, Dr. P.K Mohanty, Dr. K. R Singh & Mr. Sanjay Mandal attended ‘Interaction Session on Action Plan on Academic Activities’, funded by TEQIP-III at DUET, Dibrugarh, Assam, 27 Nov, 2019.

21. Dr. Mainak Malik successfully completed online course on “Structural Dynamics for Civil Engineers – SDOF Systems” in NPTEL Online Certificate Course conducted by IIT, Kanpur.

Industry Institute Interaction Cell (IIIC)
Dr. Sahadev Roy, Assistant Professor (ECE) and Coordinator of IIIC visited Indian Spinal Injuries Centre for possible collaborative research with Dr. H.S. Chhabra, Chief of Spine Services & Medical Director, Indian Spinal Injuries Centre on 15 Nov 2019.

Awards and Honours
1. Prof. Pinakeswar Mahanta, Director, NITAP is one of the international advisory committee members in the international conference on “Water, Energy and Biodiversity (WEB) for Sustainable Development of BIMSTEC Countries” during December 12-14, 2019 at Agartala, Tripura by The Institution of Engineers (I), Tripura State Centre and Other North Eastern State Centres of IEI in association with other national and international organizations.

2. Prof. Pinakeswar Mahanta, Director, NITAP is one of the advisory committee members in the two day National Seminar on “Flexible Generation, Storage Solutions, Grid Integration and Stability” during 09 - 10 Jan, 2020 organised by National Power Training Institute, North Eastern Region, Ministry of Power, Government of India.

Co-organizer
1. NITAP was co-organizer of 1st International Conference on Applied Mathematics in Science and Engineering (AMSE-2019), which was organized by Siksha ‘O’ Anusandhan (Deemed to be University) Bhubaneswar, 24-26 Oct 2019.

2. NITAP was co-organizer of International Conference on New Vistas in Pure and Applied Mathematics and Statistics, which was organized by University of Rajasthan, Jaipur, 24-26 Nov, 2019.

Training and Placement
1. The following details of placement for August and September 2019:

<table>
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<tr>
<th>Sl. No.</th>
<th>Name of the Company</th>
<th>Numbers of Students Placed</th>
<th>Departments</th>
<th>Package Offered (in Lakhs)</th>
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<td>BT</td>
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<td>1</td>
<td>Infosys</td>
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<tr>
<td>2</td>
<td>Samsung</td>
<td>03</td>
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<tr>
<td>3</td>
<td>L&amp;T Construction</td>
<td>05</td>
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2. Prof. Sankar Nath Shome, Prof. in Charge, Training and Placement and Dr. Manash Pratim Dutta, Faculty in Charge, Training and Placement visited BCPL, OIL, ONGC and Assam Gas Company Ltd. on Nov 27-28, 2019 for discussion on opportunities and scope for NITAP students to be engaged to these organizations for internship as well as placement after B. Tech.

Student Activities
1. Deboraj Muchahary has defended his Ph.D thesis entitled “Theoretical analysis and modelling of ZnO/Si heterojunction solar cell”
2. Saikat Ghosh has defended his thesis entitled “Doxorubicin encapsulated hydroxyapatite nanoparticle and its nanocomposite with polymer for bioengineering applications” on 01 Nov 2019 under Dr. Nabakumar Pramanik as Supervisor.

3. Bholaanath Dolai has defended his thesis entitled “Carbohydrate-based colorimetric and fluorometric sensors for Cu” and Au” ions in aqueous medium” on 01 Nov 2019 under Dr. A. K. Atta as Supervisor and Dr. Nabakumar Pramanik as Co-Supervisor.

Travel Support under Young Scientist
1. Dr. Deepak Gupta, Assistant Professor, Dept of CSE got the travel support under Young Scientist for presenting research paper titled “Regularized Universal twin support vector machine for classification of EEG Signal” in IEEE International Conference on Systems, Man and Cybernetics (SMC) 2019, Italy from 06 October, 2019 to 09 October, 2019 from Science & Engineering Research Board (SERB), New Delhi.

2. Dr. Deepak Gupta, Assistant Professor, Dept of CSE has been awarded as Editorial Review Board Member of Journal of Applied Intelligence, Springer. [SCI Indexed with Impact Factor 2.88].


Best Paper Award
Ms. Tassar Pana, PhD Scholar in Civil Department was awarded 1st Runner Up (Oral Presentation) for her paper titled “A State of Art Review on Subsurface Profiling using MASW Survey” in the Symposium on Recent Advances in Sustainable Geotechnics held at IIT, Kanpur, 17-20 Oct 2019 organized by IGS Kanpur Local Chapter and IIT, Kanpur.

Tassar Pana receiving 1st prize from Dr. Richard J Bathurst, professor of Royal Military College of Canada.

Field/Industry/Institute Visit
1. EE Final Year Students and Dr. Rajib Jana, Assistant Professor, Dept of EE visited High Voltage Lab Visit at Central Power Research Institute, Guwahati, 10 Oct, 2019.

2. 45 fourth year B.Tech students and faculty members of Dept of CE visited NHPC, 18/10/19.
7. Sayan Pakira and Anurag Singh, Dept. of CHE, attended ‘SRIJAN 1.0’, funded by TEQIP-III NIT Silchar, 8-10 Nov, 2019.

**Inter School Science Exhibition**

NITAP organized a Science Exhibition on 1st Nov 2019 in the tech fest, Addovedi ‘19. In the Inter School Science Exhibition many schools of Arunachal Pradesh, VKV Chimpu, VKV Vivek Vihar, Lekhi Public School, New Galaxy Academy, ABC Alphabet School, Garden Dew Academy, Govt. Higher Secondary School, Itanagar and Doimukh and also TOCIC IIT Guwahati, BDC TIT Guwahati and Maverick Technologies participated and exhibited their science projects.

Winner of the Science Exhibition was Lekhi Public School demonstrated the concept of Renewable Energy. Runner ups of the competition were VKV, Vivek Vihar and VKV, Itanagar.

**Prize Distribution**

Winner of the Science Exhibition at NITAP

**Entrepreneurship Development Program & Technical Communication (EDP&TC)**

**Entreprenuership Development Program & Technical Communication 2019 (Sponsored by TEQIP-III)** was organized by Dr. M. M. Singh & Dr. K. Vijayakumar, Assistant Professor, Dept. of Management &
Plastic Free Campaign (Swachhata Hi Seva 2019)

As a mark of Gandhiji’s 150th Birth Anniversary, as per instruction from MHRD, Environment Management Plan (EMP) under TEQIP III has organized a month-long Plastic Free Campaign from 11th Sep to 27th Oct 2019 in association with Swachh Bharat Abhiyan (SBA), Ek Bharat Shreshtha Bharat (EBSB) and Hollong Eco Innovative Club (HEIC), NITAP. Various activities were carried out such as Plastic free banner making, Plastic free awareness rally, Garbage bins distribution, Workshops, Shramdaan, Bamboo dustbin installation, Cleaning drives etc.

Vivekananda Kendra College of Teacher Education College Visit

Students from Vivekananda Kendra College of Teacher Education College, Nirjuli visited NITAP on Oct 24, 2019 for having an interaction about the technical curriculum with engineering faculty members as part of their practical educational survey.

Training Programme

Dr. Shubhajit Das, Assistant Professor, Dept. of Mechanical Engineering conducted a training programme on advanced workshop practice and CNC to the 5th semester students of Mechanical Engineering Department, Dhemaji Polytechnic, Simen Chapori, Assam during the period from 6th to 8th Nov 2019. A total of 44 students participated in the training program.

Health Check-up cum Awareness Camp

Health Check-up cum Awareness Camp followed by lectures on “Health Awareness, Nutrition and Obesity” in the Seminar Hall was organized by Medical Unit, NITAP association with Four Seasons Wellness Centre, Guwahati from 4th to 5th Nov, 2019 for all students (UG, PG & Research Scholars), staff, faculty members and officers. The purpose of the awareness camp was to provide consultation on nutrition awareness to the participants.

Mechanical Engineering Student Society (MESS)

The first student chapter of NITAP, Mechanical Engineering Student Society (MESS) was officially inaugurated by the Director Dr. Pinakeswar Mahanta on Oct 19 2019. It’s the first of its kind in our college whose goal is to come with co-curriculum activities and volunteering projects and start clubs at NITAP in addition to hosting workshops, seminars, and debates. On that day, Prof. Vasant Bharve, as a keynote speaker, delivered lectures on “Engineering Relevance on Mankind” in the workshop.

Office Bearers

Mr. Obang Jerang
President

Mr. Kautilya Sargadam
Vice-President

Mr. Amit Kumar
General Secretary

Dr. Sandip Kr Mandal
Faculty Advisor
Shri Koushik Chandra Saha (CSE/19/21) got first prize in drawing competition held during NCC CATC Camp from 18 Oct to 27 Oct 2019 at RGGP College, Itanagar. The theme was NATURAL WORLD.

Our Alumni

Ambika Choudhury is a Technical Journalist in Analytics India Magazine, who loves writing about Machine Learning and Artificial Intelligence. She has published 338 articles on various topics. Her published articles can be read in the link ambika.choudhury@analyticsindiamag.com.

K Dinesh
Research Scholar
Department of Management Studies
Indian Institute of Technology Delhi

Announcement

6th Convocation of NITAP

6th Convocation of National Institute of Technology, Arunachal Pradesh is scheduled on 14th Dec (Saturday) 2019 at 11.00 a.m. in Technology Enhanced Learning (TEL) Centre at NIT Arunachal Pradesh, Yupia Campus, Shri Kiren Rijiju, Honourable Union Minister of State, Ministry of Youth Affairs and Sports (Independent Charge) and Ministry of State of Minority Affairs, Govt of India will be the Chief Guest and will deliver the Convocation Address

All are invited!

2nd Alumni meet at NITAP

Date: 13 December 2019
Time: 06.00 p.m.
Venue: Tiger Hall, NIT Arunachal Pradesh, Yupia Campus.
Contact Details: Dr. Deepak Gupta, Assistant Professor, Dept of CSE, NITAP,
Email: deepak@nitap.in
Phone: 9485230593

All alumni are invited!

NATIONAL INSTITUTE OF TECHNOLOGY ARUNACHAL PRADESH
Yupia, District - Papumpare, Arunachal Pradesh – 791112