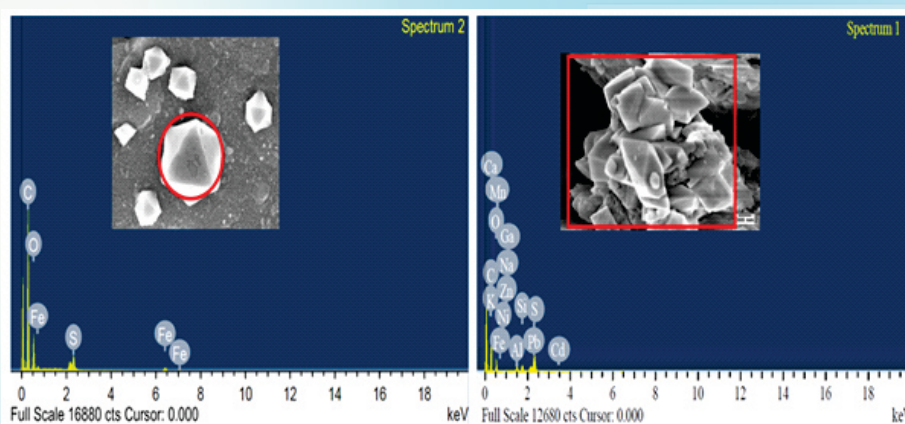
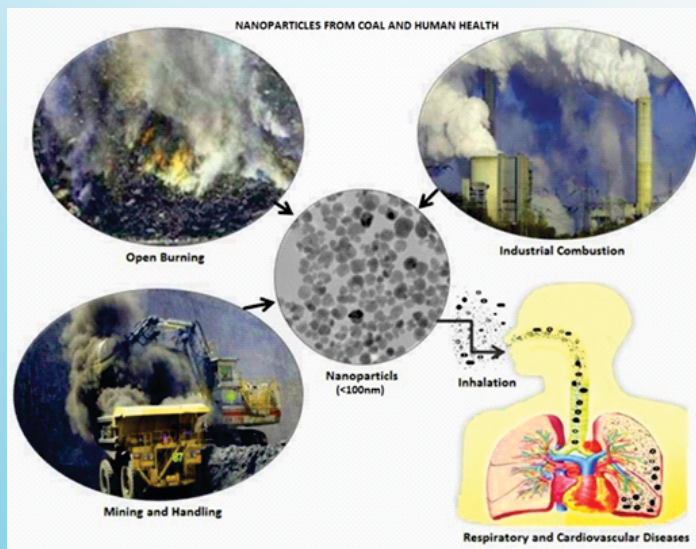


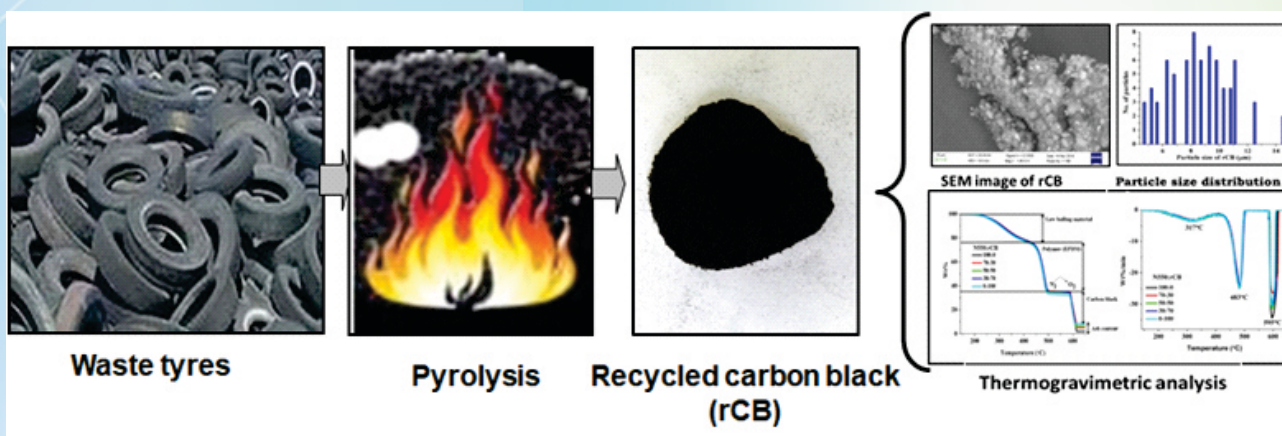
- ❖ Geochemistry and Nanomineralogy of Feed Coals and Their Coal Combustion Residues from Two Different Coal-Based Industries in Northeast India: The chemistry, mineralogy, and petrology of industrial feed coals (tea processing and brick-making industries) are very important parameters for understanding the process conditions in a thermal plant. The EDS analysis revealed the presence of nanosphere of Al-Si-Fe-S and Al-Si-Mg-As compounds with potentially hazardous elements (PHEs) including Hg, As, Pd, Cd, Sn, Ni, and Co in one fly ash samples. (Energy Fuels, 32 (2018), 3697-3708)



- ❖ Ambient nanoparticles/nanominerals and hazardous elements from coal combustion activity: Implications on energy challenges and health hazards: The existing knowledge on nanominerals/nanoparticles in coal and coal fly ashes (CFAs) are demonstrated. We reviewed the advanced level characterization techniques for coal and coal residues. Some aspects of health hazards caused due to coal combustion activities are included in this study. (Geoscience Frontiers, 9 (2018), 863-875)



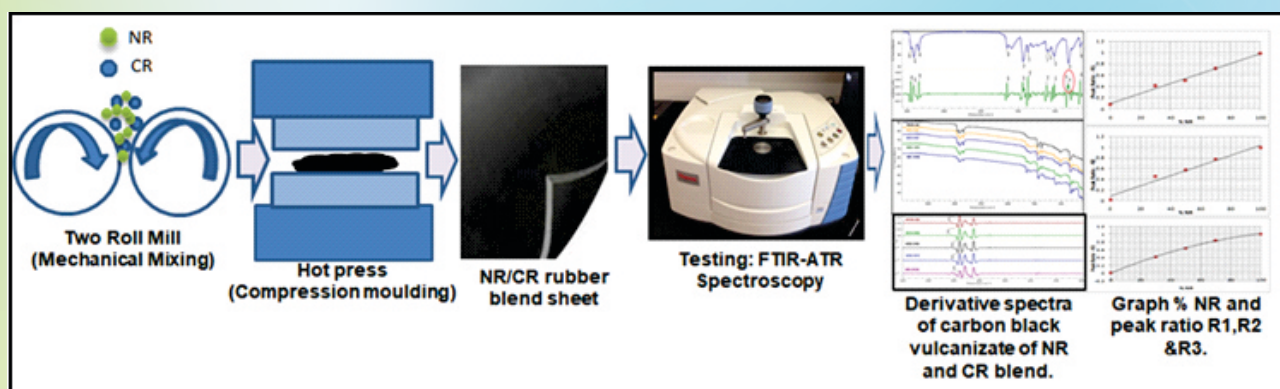
- ❖ A potential utilization of end-of-life tyres as recycled carbon black in EPDM rubber (Waste Management, 74 (2018), 110-122)
- End-of-Life Tyres pyrolysis was performed in a rotary kiln quartz reactor.
- Pyrolysis was studied from a cleaner production and circular economy approach.
- The effect of temperature, heating rate and particle size was studied.
- Heating values of liquid and gaseous products were determined.
- Char activation with KOH increased total specific surface area to 402 m²/g.



- ❖ A unique application of the second order derivative of FTIR-ATR spectra for compositional analyses of natural rubber and polychloroprene rubber and their blends (Polymer Testing, 62 (2017) 447-453).
- The infrared spectra of natural rubber (NR), polychloroprene rubber (CR) and their respective carbon black-filled vulcanizates were recorded by using FTIR-ATR on a Germanium crystal.
- It is difficult to quantify the individual elastomers in NR-CR blend by the conventional techniques, using TGA and FTIR pyrolyzate.

- The 2nd derivative of the spectra was obtained for analysis. The important infrared bands for the identification of these materials were assigned, and compositional analyses of the blends were carried out by using the second order derivative spectra.

The current work on the application of this new methodology was observed to exhibit highly promising results for NR–CR blend and will probably work for other conventional elastomer blends, such as: NR/SBR, NR/BR, etc. which we intend to validate in future.



- ❖ Variations in particulate matter over Indo-Gangetic Plains and Indo-Himalayan Range during four field campaigns in winter monsoon and summer monsoon: Role of pollution pathways (Atmospheric Environment, (2017), 154, 200-224): This is a part of the study carried out as a part of National Campaign on aerosol deposition across the Indo-gangetic gion of India led by CSIR-NPL, New Delhi.

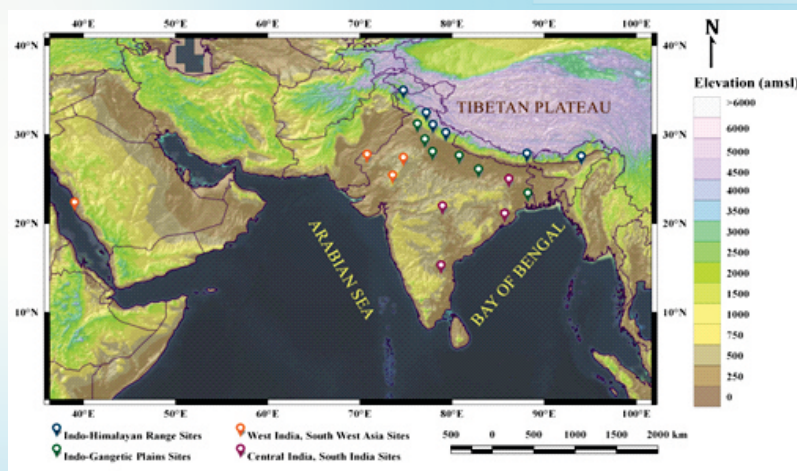


Fig: Digital elevation map of the study area containing locations of the various sampling sites

Project Title: Small Community Level Low Cost Process from Local Biomass for Iron and Fluoride Removal from Bore Well Water of Assam (LOCAL-MASS)

Project No: GPP-296

Funding Agency: Department of Science and Technology (DST), Govt. of India

PI & Members: Dr Rajib Lochan Goswamee (PI), Mr JJ Bora (Co-PI), Ms S Sharma, Ms J Saikia

Objectives:

- ❖ Development of a process for a small community of 2 to 3 families for defluoridation of water
- ❖ Introduction of novelty in toxic sludge handling through economic lime-silica reactions.
- ❖ Integration of affected people through NGO, state Public Health Engineering department and MSME industry in the technology development process

Salient Achievements:

- ❖ Establishing of efficacy of developed defluoridation plant in tap water based field simulated system in a capacity of 500L/day plant
- ❖ Establishment of simultaneous Fluoride and Arsenic removal system and immobilisation of spent adsorbents
- ❖ Preparation of ceramic barriers using local materials and characterization of some selected shapes as membrane
- ❖ Reductant free synthesis of silver nanoparticles over weed carbon and their efficacy as disinfectant

Project Title: Catalytic Evaluation of Cooperative and Red-Ox Non-Innocent Metal-Complex in Organic Transformations

Project No: GPP-315

Funding Agency: Department of Science and Technology (DST), Govt. of India

PI & Members: Dr Biswajit Saha (PI)

Objectives:

- ❖ Synthesis of redox active bifunctional catalysts
- ❖ Evaluation of catalytic activity of the redox active metal–ligand cooperative catalyst.

Salient Achievements:

- ❖ New ligands have been synthesized and characterized by NMR, IR, HRMS, CV and Single Crystal X-Ray diffractometer. Few metal complexes are synthesized and catalytic activity of such metal catalysts are going on.

Project Title: Reduced Graphene Oxide Nanosheets Decorated with Metallic/Bimetallic Nanoparticles: A Multifunctional Materials for Photothermal Therapy of Cancer Cells.

Project No: GPP-316

Funding Agency: Department of Biotechnology (DBT), Govt. of India

PI & Members: Manash Ranjan Das (PI)

Objectives:

- ❖ Functionalization of the graphene surface by NH₂ terminated polyethylene glycol (PEG) and Polydopamine

- ❖ Synthesis and characterization of the Au-Pd bimetallic NPs on the functionalized graphene sheets adopting solution chemistry approach using eco-friendly reducing agents
- ❖ Synthesis and characterization of the Au-Ag bimetallic NPs on the functionalized graphene sheets
- ❖ Characterization of the bimetallic NPs-graphene composite materials by XRD, XPS, HAADF-STEM, FESEM, HRTEM etc.
- ❖ Investigation of photothermal therapy of cancer cells using Au-Pd and Au-Ag bimetallic NPs-graphene composite materials in vitro process
- ❖ Investigation of photothermal therapy of cancer cells using Au-Pd and Au-Ag bimetallic NPs-graphene composite materials in vivo process
- ❖ Degradation of Au-Pd and Au-Ag bimetallic NPs-graphene composite in the biological fluid to investigate renal as well as hepato biliary clearance and their bio-toxicity
- ❖ Bio-toxicity of the both Au-Pd and Au-Ag bimetallic NPs-graphene composite will also be investigated

Salient Achievements:

- ❖ The graphene sheet is successfully functionalized by NH₂ terminated polyethylene glycol (PEG) and Polydopamine
 - ❖ The Au-Pd bimetallic NPs is synthesized on the functionalized graphene sheets
 - ❖ Characterization of the Au-Pd bimetallic NPs on the functionalized graphene sheets is completed
 - ❖ In vitro photothermal therapy of cancer cells using Au-Pd bimetallic NPs-graphene composite is completed.
1. Characterization of dopamine functionalized graphene sheets and Au-Pd nanoparticles on functionalized graphene sheets

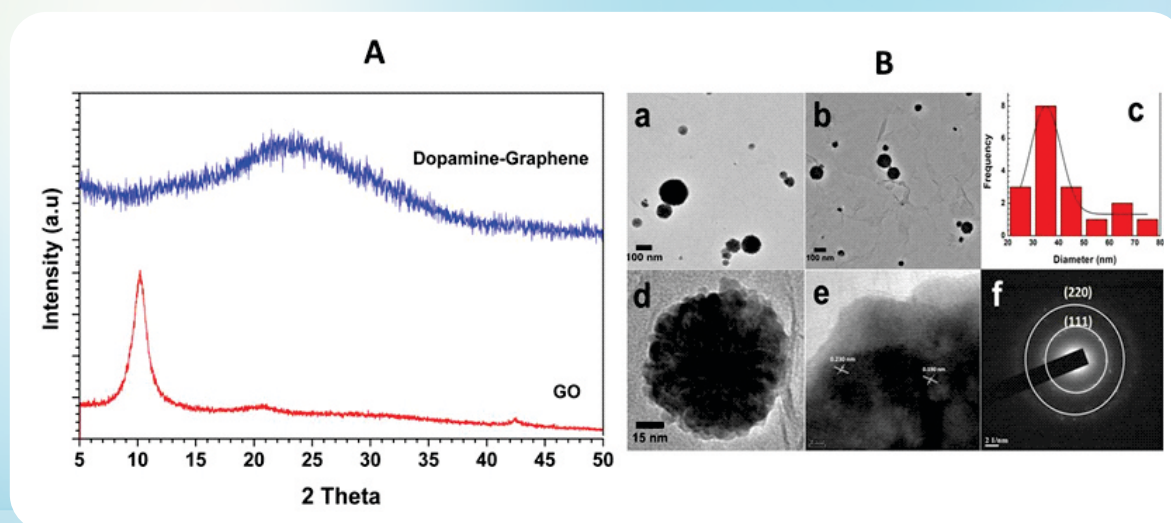


Fig. 3 (A) XRD pattern of graphene oxide and dopamine functionalized graphene (B) TEM and HRTEM images of Au-Pd bimetallic NPs on functionalized graphene sheets

2. In vitro photothermal activity of Au-Pd bimetallic NPs on polydopamine functionalized graphene sheets

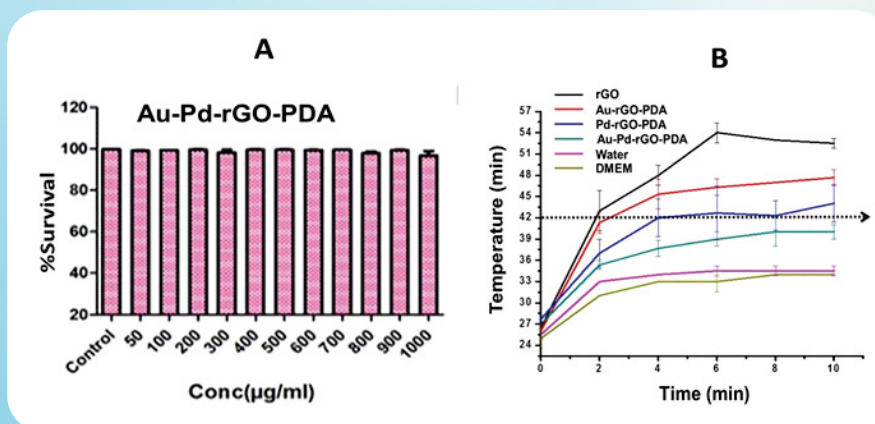


Fig: (A) Biocompatibility of Au-Pd bimetallic NPs-dopamine functionalized graphene sheets (B) Photothermal therapy effect of Au-Pd bimetallic NPs-functionalized graphene sheets on HeLa cells

Project Title: Novel Magnetically Separable 2D Graphitic Carbon Nitride Nanocomposite for Photocatalytic Degradation of Dyes for Environmental Remediation of Textile Industry Effluent

Project No: GPP-321

Funding Agency: Department of Science and Technology (DST), Govt. of India

PI & Members: Dr Lakshi Saikia (PI)

Objectives:

- ❖ Synthesis of two dimensional (2D) graphitic carbon nitride by thermal polymerization technique.
- ❖ Exfoliation of g-C₃N₄ to prepare sheet like structure and generation of pores on it by soft and hard templating methods.
- ❖ Preparation of magnetically separable g-C₃N₄ composite and generation of semiconductor nanoparticles on the composite
- ❖ Characterization of the synthesized nanocomposites by FESEM, HRTEM, AFM, Raman, PXRD etc.
- ❖ Photocatalytic degradation of textile dyes like methylene blue, crystal violet, reactive orange 16 etc. and non-azo dyes using sun light and their mechanistic investigation, theoretical study and field implementation of the same.

Salient Achievements:

- ❖ In this study, we developed a simple strategy for synthesis of magnetic ZnFe₂O₄@g-C₃N₄ heterojunction catalysts with different mass ratios of g-C₃N₄ and ZnFe₂O₄ and their application towards heterogeneous photo-Fenton process. Several characterization techniques were employed to study phase, purity, morphology, spectroscopic, thermal

properties of our synthesized nanocatalysts. Also the photocatalytic performance in heterogeneous reaction was investigated in terms of the degradation of Rhodamine B dye by H_2O_2 as a clean oxidant under visible light irradiation. This research provides a novel practical approach for efficient photocatalytic dye degradation by using heterogeneous photo-Fenton system ($ZnFe_2O_4@g-C_3N_4/H_2O_2/vis$). This work intensifies the fundamental of understanding the efficiency of as prepared hybrids for the treatment of nonbiodegradable organic pollutants in water.

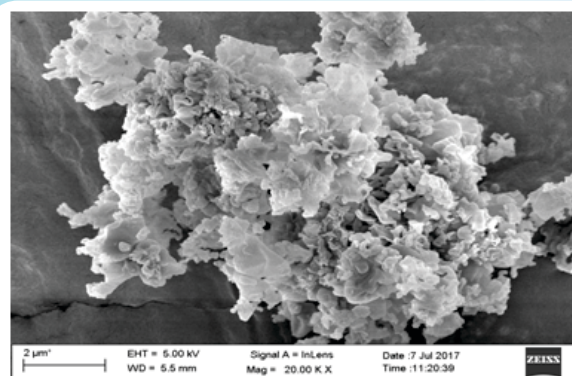
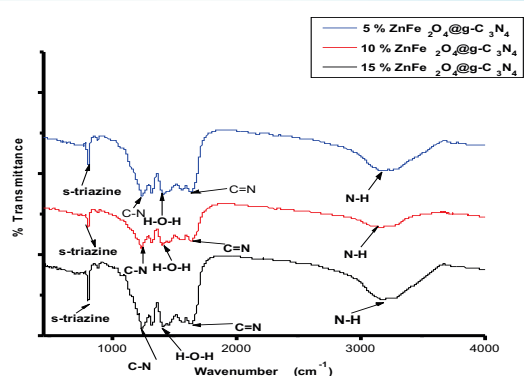
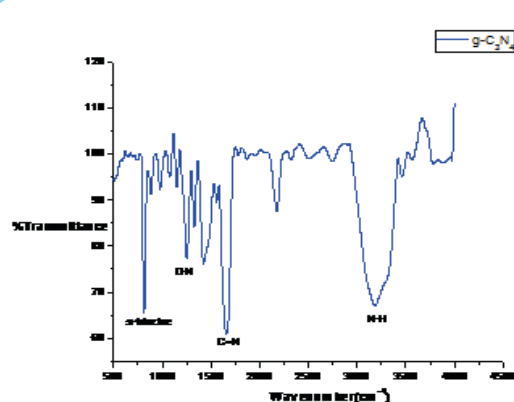
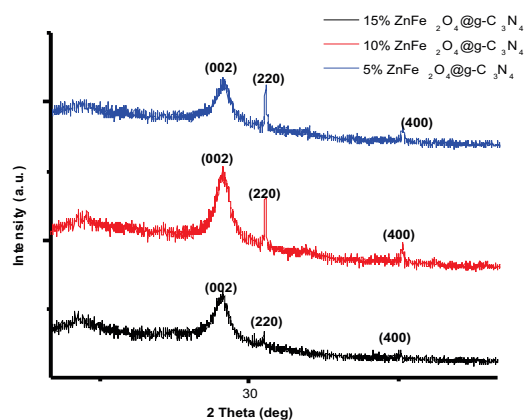
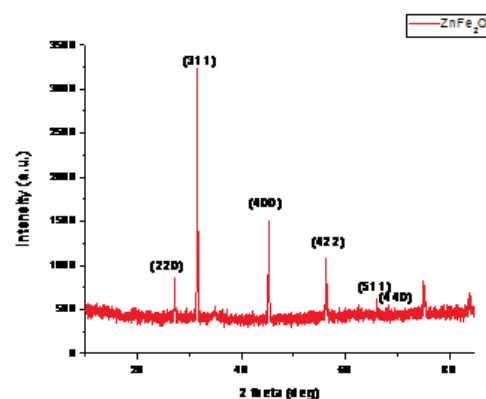
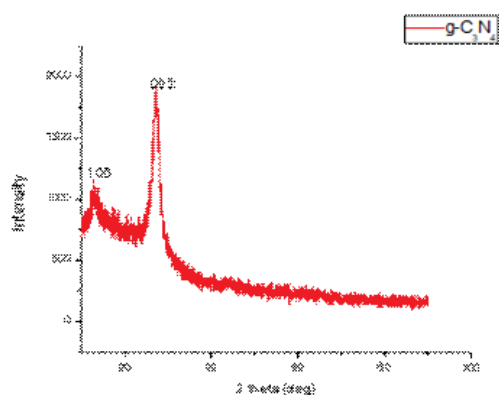


Fig: PXRD patterns of (a) g-C₃N₄, (b) ZnFe₂O₄, (c) ZnFe₂O₄@g-C₃N₄; FTIR comparison spectra of, (d) g-C₃N₄, (e) ZnFe₂O₄@g-C₃N₄; FE-SEM of (f) g-C₃N₄

Project Title: NCAP-WGIII: Carbonaceous Aerosol Emissions, Source Apportionment and Climate Effects

Project No: GPP-325

Funding Agency: Ministry of Environment, Forests and Climate Change, New Delhi

PI & Members: Dr Binoy Kumar Saikia (PI), Dr P Saikia (Co-PI), Mr T Das

Objectives:

- ❖ Identification of a regionally representative location for particle sampling for BC source apportionment.
- ❖ Particle sampling for a two year period, including QA/QC protocol development and implementation. Filters are to be passed on to the associate institution for full chemical analysis and source apportionment modelling.
- ❖ Analysis of seasonal variations in source contributions to PM_{2.5} as related to meteorology and emissions. Data generation for final receptor modeling results for North-Eastern India site. Detailed activity timeline charts and budget are given in the following section.

Salient Achievements:

- ❖ Pre-emission inventory survey conducted in different districts of Northeast India.

Project Title: Approach Towards Tailoring the Interfacial Structure and Property of Lignin for Flexible Bio-Polymer Film Application

Project No: GPP-330

Funding Agency: Department of Science and Technology (DST)-SERB, Govt. of India

PI & Members: Dr Ajit Singh (PI)

Objectives:

- ❖ Isolation of lignin from paper mill black liquor
- ❖ Functionalization of above lignin with molecules such as acrylate, amine etc.
- ❖ Use of deep eutectic solvent system to control lignin aggregation
- ❖ Flexible film preparation from above lignin and bio-polymers (polylactic acid, chitosan etc.)

Salient Achievements:

- ❖ Black liquor obtained from Kraft pulping was identified as a major source for the lignin isolation and isolation was carried out in laboratory. This lignin was used for the demethylation with HBr and further functionalized with reactive molecules such as acrylate and epoxides. Characterization and optimization is in process.

Project Title: Red-Ox Active Ferrocene Functionalized N-Heterocyclic Carbene-Molybdenum Complex for Catalytic Nitrogen Triple Bond Reduction

Project No: GPP-333

Funding Agency: Department of Science and Technology (DST), Govt. of India

PI & Members: Dr Biswajit Saha (PI)

Objectives:

- ❖ Syntheses of ferrocene functionalized NHC ligands
- ❖ Preparation of [Fe-Mo] catalysts
- ❖ Ammonia synthesis from dinitrogen by [Fe-Mo] catalysts at ambient condition

Salient Achievements:

- ❖ Newly sanctioned: Work in Progress

Project Title: Development of Low Cost Biodegradable Plastics from Indian Agricultural-Food Processing Starch Wastes for Food Packaging and Other Value Added Applications

Project No: GPP-337

Funding Agency: Department of Science and Technology (DST), Govt. of India

PI & Members: Dr Jayaramudu Jarugala (PI)

Objectives:

- ❖ The main objective of this project is to replace/substitute existing petroleum derived plastic films with eco-friendly, biodegradable plastic films produced from renewable resource based polymers and agro-food processing starch waste materials.
- ❖ It is proposed to reduce the cost of biodegradable plastics (poly propylene carbonate) using a low cost agro-food processing waste of potato and banana peel starch waste.
- ❖ In addition to that the two fold nanofillers such as cellulose nanocrystals and silica nanoparticles shall be obtained from a single feed stock of an abundantly available rice husk agriculture waste.
- ❖ These nanofillers shall be utilized to improve mechanical thermal, barrier properties of PPC/starch blends. Also the grape fruit seed extract also used to impart the antimicrobial, antioxidant and UV absorbance properties of PPC/starch blends.
- ❖ The biodegradable plastic films will be melt processed and the effect of starch, grape fruit extract, cellulose nanocrystals and silica nanoparticles on performance of the films shall be investigated.
- ❖ The physico-mechanical and thermo-mechanical performance of the developed films will be evaluated using ASTM standards. Biodegradation of films will be carried out according ASTM D 6348. Finally optimized of new formulations were used to test food packaging, agricultural mulching films applications.

Salient Achievements:

- ❖ Newly sanctioned: Work in Progress

Project Title: Development of Flexible Composite Material Using Coconut Husk and Leather Waste for Industrial Application

Project No: CLP-288

Funding Agency: Coir board, MSME, Govt. of India

PI & Members: Dr Dipul Kalita (PI), Dr T Goswami (Co-PI), Mr D Neog, Dr Ajit Singh, Dr D Dutta

Objectives:

- ❖ Feasibility study and evaluation of possible methodologies of utilizing coconut husk in combination with leather waste materials to synthesize flexible composite and converting the flexible composite material into different leather goods and footwear materials.
- ❖ Characterization of leather waste composite material synthesized using coconut husk.
- ❖ Comparison of properties of composite material synthesized using coconut husk and leather waste materials and other conventional materials.
- ❖ Examination of application potential of flexible leather waste composite material as industrial materials

Salient Achievements:

- ❖ Flexible composite sheets were made from the mixer of coconut husk and leather waste at different ratios.
- ❖ The flexibility and physical strength properties of the composite were found better at 50:50 ratio (leather waste: coconut husk).
- ❖ The process for manufacturing composite sheets was optimized using handmade paper making machineries. The results of the different tests were found encouraging.

BRANCH LABORATORY IMPHAL & BRANCH LABORATORY ITANAGAR

The CSIR-NEIST, Substation, Imphal was established in 1973 with the main aim to undergo research and development of oil yielding plants. After renaming the RRL to NEIST, the Substation has been upgraded to the status of **Branch Laboratory, Imphal** in 2012 with many more activities and research areas such as Biodiversity, Bioprospection, Designing and development of products based on ethnic designs and materials, Seismic observatory, Weather monitoring station, etc. The Branch Laboratory will be focusing more on motivation and transfer of technology of CSIR to NGOs, Organizations, Entrepreneurs, etc. **The Branch Laboratory, Itanagar** was established in the year of 1981 and started to functioning in 1983. The mission of the Branch Laboratory-Itanagar (BLIT), Arunachal Pradesh is to promote advances in plant and microbial research for the benefit of society and people of Arunachal Pradesh and North East India. The branch will accomplish this through research, educational, and societal activities that foster a multi-disciplinary interchange of ideas and cutting-edge technologies and their applications. Activities of the Branch Laboratory-Itanagar will contribute to the basic research and the translation of basic research for applications to the health care, agriculture, environment, and livelihood of the people.

A) National Collaboration

(i) In-house, Grant in aid & Consultancy Projects

Project Title: Sustainable Utilization of medicinal, aromatic, aquatic and economic plants: b) Development of agro-technology & chemical investigation of selected medicinal, aromatic and edible plant of Arunachal Pradesh.

Project No: OLP-2006

Funding Agency: CSIR, New Delhi

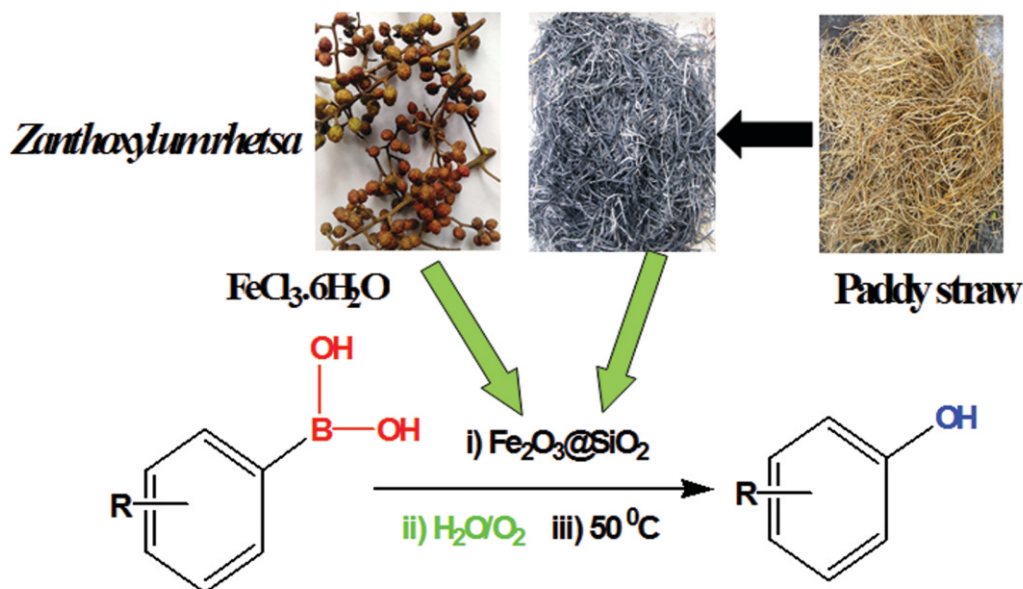
PI & Members: Dr Jagat Chandra Borah (PI), Dr C Tamuly, Dr N Velmurugam, Dr B C Baruah, Mr J Bora, Mrs M Hazarika, Mr AJ Gogoi

Objectives:

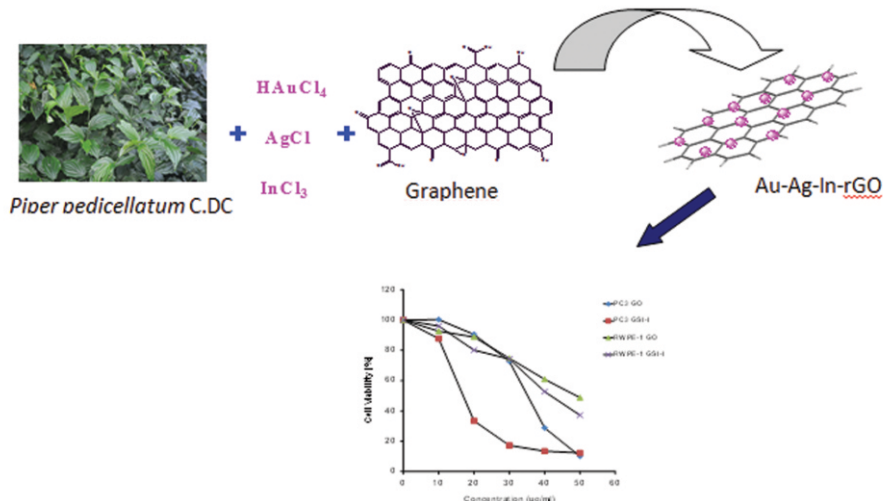
- ❖ To introduce various medicinal, aromatic and edible plants.
- ❖ To developed new/better strain of medicinal/ aromatic plants.
- ❖ Development of agro technology for commercial cultivation.
- ❖ Chemical investigation of unexplored medicinal, aromatic and wild edible plant of Arunachal Pradesh and its value addition..
- ❖ Evaluation of antioxidant activities, phenolic content, flavonoids content of selected medicinal/edible plant and parts thereof.
- ❖ Evaluation of nutraceuticals and mineral content of selective medicinal/edible plant species.
- ❖ To generate knowledge, enhance the value of knowledge and its application for agro based industrial development in the rural sector.
- ❖ To generate employment opportunities for socio economic uplift in the rural sector

Salient Achievements:

- ❖ Organized 37 nos of training programme on cultivation of mushroom in NEIST Branch Itanagar and different place of Arunachal Pradesh.
- ❖ A total 4000 pkts (approx. 300 gm/ pkt) mushroom spawn were supplied to 150 individual beneficiaries and 11 SHGs comprising 15-25 members in each group covering five district in Arunachal Pradesh (Papumpare, upper Subansiri, Lower Subansiri, Kurung Kume, West Kameng, East Siang, West Siang and Dibang Valley) and two district in Assam (North Lakhimpur and Dhemaji) during the reporting period.
- ❖ Several SHGs and individuals have produced mushroom and selling in local market. They earned about 6-7 lakh rupees during this period.
- ❖ About 50 nos employment was generated through cultivation of mushroom and production of vermicompost.
- ❖ The beneficiaries earned about 3-4 lakh rupees by selling the vermicompost under the guidance of NEIST Branch Itanagar.
- ❖ Biogenic synthesis of $\text{Fe}_2\text{O}_3@\text{SiO}_2$ nanoparticles and its application in *ipso*-hydroxylation of arylboronic acid to phenols in presence of water is reported here. The *ipso*-hydroxylation reactions were carried out with excellent yield with mild reaction condition in all cases.



- ❖ Biosynthesis of Ag-Au-In nanoparticles decorated in reduced graphene oxide surface is reported here. The materials showed excellent α -glucosidase inhibitory activity and Cytotoxicity activity against PC3 prostate cancer cells



Project Title: Expanding endophytes of *Paris polyphylla* as a model to study co-evolution relationships with emphasis on functional metabolites production

Project No: GAP-323

Funding Agency: Department of Science and Technology, DST-SERB-ECR Project

PI & Members: Dr Natarajan Velmurugan (PI), Dr B C Baruah

Objectives:

- ❖ Collection and identification of *Paris polyphylla* from high-altitude mountain forests of Arunachal Pradesh
- ❖ Isolation and characterization of endophytes from *P. polyphylla*
- ❖ Screening of endophytes for the production of saponins and other bioactive compounds along with phytochemical investigation of *P. polyphylla*
- ❖ Transcriptomics analysis – Understanding the molecular mechanisms of co-evolution relationships with emphasis on functional metabolites production
- ❖ Effect of selective endophytes on bioactive compounds production in *P. polyphylla*

Salient Achievements:

- ❖ Documented the presence of endangered medicinal plant *P. polyphylla* in high altitude forest/mountain ranges of Bomdila region of Arunachal Pradesh. Phytochemical characterization of rhizome of *P. polyphylla* was completed and we have isolated around 200 endophytes from the rhizomes of *P. polyphylla*.

Project Title: Development of bioprocessing and metabolic engineering of haptophycean microalgae for the direct production of C18-hydrocarbons as jet fuels

Project No: GAP-742

Funding Agency: Department of Science and Technology, DST-INSPIRE-Faculty Project

PI & Members: Dr Natarajan Velmurugan (PI)

Objectives:

- ❖ The main purpose of this project related to analyzing the intracellular lipid accumulation of biomass, examining, and monitoring cellular activity and cell viability, isolating cells that over producing target compounds and developing transformation and metabolic engineering techniques suitable for haptophycean microalgae
- ❖ We are developing the biotechnology processing, transformation and metabolic engineering technologies for the direct production of C18-hydrocarbons in haptophycean microalgae which can be directly useful for jet fuels

Salient Achievements:

- ❖ High-Throughput Screening (HTS) methodology for screening and isolation of high-level intracellular lipid bodies producing oleaginous green microalgae and haptophytes was established

Project Title: Development of green campus in schools of Manipur, NorthEast India

Project No: GPP-310

Collaborating University/Institute: GB Pant National Institute of Himalayan Environment & Sustainable Development, Almora, Ministry of Environment, Forest & Climate Change, Govt. of India

Funding Agency: GB Pant National Institute of Himalayan Environment & Sustainable Development, Almora, Ministry of Environment, Forest & Climate Change, Govt. of India.

PI & Members Dr H B Singh (PI), Dr S P Saikia

Objectives:

- ❖ Cultivation of at least 20 biologically & economically significant plants in the campus of 5 selected schools of Manipur.
- ❖ Creation of awareness amongst students & teachers about the importance & conservation of biodiversity.
- ❖ Providing sheds, enhance aesthetic look of campus & checking noise pollution & available the fruits of the trees to the students & teachers for consumption.

Salient Achievements:

- ❖ Conducted an awareness program on cultivation of economically important plants in the campus of 5 selected schools of Manipur on March 7, 2017 by inviting Headmasters/Headmistress, coordinating teachers & 5 club member students from each school. Cultivated & maintenance of 332 economically important plants under 18 species in each of the 5 selected school campuses (total = $332 \times 5 = 1660$ saplings).

Project Title: Anthropogenic impacts and their management options in different ecosystems of the Indian Himalayan region

Project No: GPP-327

Funding Agency: SERB -Department of Science and Technology (DST), Govt. of India

PI & Members: Dr H B Singh (PI)

Objectives:

- ❖ To monitor snow melt and/or headwater contribution in total river water flow, their seasonal behaviour and quality due to climate change.
- ❖ To assess the impacts due to erratic seasonal behavior of river/stream water flow on overall land use pattern, the developmental projects such as HEPs & riverine aquatic biodiversity.
- ❖ To enhance capacity building of the stakeholders including women in terms of increasing their resilience & adaptive capacity due to climate change for their sustainable livelihood options.
- ❖ To suggest mitigating measures and management options due to anthropogenic impacts for policy implications.

Salient Achievements:

- ❖ Conducted 3-days program on Stakeholders' training workshop-cum-field consultation meeting under NMHS at the BLIM during Dec 1-3, 2017 under the externally funded project "Anthropogenic impact & their management options in the Indian Himalayan region, Imphal river", funded by GBPNIHESD, Ministry of Environment, Forest & Climate Change, Govt. Six talks were delivered on watershed, forest resource, Manipur river system and seasonal dynamic of river water in the technical session from Depts like Loktak Development Authority, Forest Dept, Planning Dept, GBPNIHESD and Kullu. The program was attended by 47 officials and villagers from the Imphal river watershed. A field survey was also conducted in the watershed area of Imphal river.

Project Title: Expanding endophytes of *Paris polyphylla* as a model to study co-evolution relationships with emphasis on functional metabolites production

Project No: GPP-323

Funding Agency: SERB -Department of Science and Technology (DST), Govt. of India

PI & Members: Dr Natarajan Velmurugan (PI), Dr B C Baruah

Objectives:

- ❖ Collection and identification of *Paris polyphylla* from high-altitude mountain forests of Arunachal Pradesh
- ❖ Isolation and characterization of endophytes from *P. polyphylla*
- ❖ Screening of endophytes for the production of saponins and other bioactive compounds along with phytochemical investigation of *P. polyphylla*

- ❖ Transcriptomics analysis – Understanding the molecular mechanisms of co-evolution relationships with emphasis on functional metabolites production
- ❖ Effect of selective endophytes on bioactive compounds production in *P. polyphylla*

Salient Achievements:

- ❖ We have documented the presence of endangered medicinal plant *P. polyphylla* in high altitude forest/mountain ranges of Bomdila region of Arunachal Pradesh. Phytochemical characterization of rhizome of *P. polyphylla* was completed and we have isolated around 200 endophytes from the rhizomes of *P. polyphylla*.

Project Title: Diastereoselective synthesis of Lamellarin alkaloid natural product fused spirooxindoles and its analogues. A series of evaluation of its biological activities against *Mycobacterium tuberculosis* and other bacterias

Project No: GPP-334

Funding Agency: SERB -Department of Science and Technology (DST), Govt. of India

PI & Members: Dr P Yuvaraj (PI), Dr B C Baruah

Objectives:

- ❖ Synthesis of focused natural products based libraries.
- ❖ Screening for a diverse range of biological activities.
- ❖ Structure-activity relationship studies (SAR).
- ❖ Iterative improvement of leads.
- ❖ In-depth studies of lead compounds.
- ❖ Commercialization of lead compounds

Salient Achievements:

- ❖ Newly sanctioned: Work in Progress

R&D Management

Research Planning & Business Development Division

Earlier, Management Sciences consisted of three major divisions namely, Human Resource Development Division, Information & Business Development Division and Planning & Project Monitoring Division. Each division had individual core activities to support the R&D fraternity of the Institute as well as to support the Director and Administration. Later, the three divisions were merged to form a new division named, Research Planning & Business Development Division (RPBD) with an aim to bring synergism in overall activities and objectives of the division. The divisional activities are being streamlined to ensure better performance with optimum use of resources.

RPBD will continue to work in areas focused at developing business of the Institute, human resources, planning & allocation of resources and evaluation of outcomes of R&D projects. The division will continue to serve as a window to the outside world and maintain liaison with public, industrial houses, government & private agencies, entrepreneurs, etc.

In addition to that the Knowledge Resource Centre (KRC) and Information Communication technology division also provide significant and regular support to the Director and administration.

Information and Business Development Activities

The Division continued to serve as a window of the Institute to the outside world and coordinated the overall business development activities. The division discharged the dual responsibility of maintaining liaison activities with industrial houses, entrepreneurs, govt. departments, private and public sector institutes etc., on the one side and disseminating the Institute's services, expertise and capabilities for economic and societal benefits of clients, customers and users on the other side. The division also made efforts to consolidate the gains of Institute's R&D in order to meet the needs and requirements of the entrepreneurs/users/clients who seek assistance from the Institute from time to time.

Exhibitions/workshop organised:

The Division disseminated information regarding institutional technologies by its products display & posters, banners etc on different exhibitions and invitation by the entrepreneurs on various occasions. The division also organized workshops/seminar etc. During the year 2017-18, the group organized/participated in 6 nos. of exhibitions on various occasions.

Students' Visits Organised:

Gyanjyoti program

Under the Hon'ble Chief Minister's Gyanjyoti Program, Govt. of Assam, CSIR-NEIST organized students visit to the Institute on 22 October, 2017. About 322 students of from Govt schools of Lakhimpur, Dhemaji, Karbi Anglong and Dima Hasao districts of Assam along with 20 teacher guides and 17 Officials/organizers visited the institute and interacted with the scientists.

Rashtriya Madhyamik Siksha Abhiyan

Under Madhyamik Siksha Abhiyan, Govt of Assam, about 2500 students from various Govt. schools of Jorhat District along with teacher guides visited the CSIR-NEIST Jorhat during 8 November, 2018.

Rashtriya Aviskar Mission

Under Rashtriya Aviskar Mission, Govt of Nagaland, around 144 students from various Govt. schools of Nagaland along with 10 teacher guides visited the various labs of CSIR-NEIST Jorhat and interacted with the scientists on 15 December, 2018.

In addition to that, about more than 2000 Students along with teacher guides from different Universities, Colleges, Technical Institutes & Schools of North Eastern Region visited CSIR-NEIST as a part of their educational tour.



Mr Madhujya Saikia, Senior Technical Officer, interacting with students and guide teachers of Gyanjyoti program

Publications:

During the period the division brought out the following regular and need based publications on different occasions.

- **Annual Report 2016-17** - Annual report of the institute was brought out and released on the National Technology Day on 11 May, 2017.
- **Highlights 2017-2018** - Highlights 2017-18 of the institute (which is compilation of institute's activities) was brought out and released on the CSIR-NEIST Foundation Day celebration on 18 March 2018.
- **NEIST News** (Four-Monthly online newsletter)
- **INFOWATCH** (Online Monthly Bulletin)
- **CSIR-NEIST Diary 2018**
- **Calendar 2018**
- **Season's Greetings Cards**



CSIR-NEIST Publications at a glance

Filing Patent Application:

The division is responsible for processing of the Institute's patent application for filing in India and abroad and for this is continuously coordinating with IPU, CSIR, New Delhi.

Processing of New Project Proposals:

The division is also responsible for processing of new project proposals. The proposals so received are forwarded to the respective committee for scrutiny. During the year 2017-18, the division processed 74 nos of Project Proposals of all the divisions.

Technology Transfer:

The division is also responsible for licensing of the technologies developed by the institute. It is responsible for drafting of technology/knowhow transfer agreement and acts as bridge between the clients and the technology teams responsible for demonstrating the knowhow package. Ten (10) nos of technologies were transferred to 14 Parties during the year.

Testing & Analysis:

The division is also responsible for processing of samples received by the Institute for testing and analysis. On completion of the analysis, the reports are issued by the division to the respective parties.

MoU/Agreement:

The division processed and executed 29 nos of MoUs/Agreements with various organizations/universities on different occasions for technology transfer, collaborative research, transfer of materials for research and other S&T activities.

Human Resource Development Activities

The Division provides human resources and knowledge management solutions of the institute to realize the R&D output. To enhance the competencies of existing human resources of the institute the division imparts the training in and outside the country, organizes workshops / lecture seminars, etc. The division imparts training and motivates students of the NE region in particular and the country in

general. The division undertakes extensive recordkeeping of the employee and researchers, competency development through need based training, strive for collaborative projects, etc.

Research Workers / Project Fellow:

The division encourages young talent for joining in the fellowships under various national and international schemes of CSIR and other funding bodies to carry out basic research in frontier areas of science from the country and from abroad. Presently, a few of them are working in various capacity under such schemes viz., Women Scientist Scheme (WSS) of DST, Senior Research Fellow and Junior Research Fellow of CSIR, UGC and other funding bodies, DST Inspire faculty, CSIR-TWAS Fellow, DBT Ramalingaswami Re-entry fellow, DST Ramanujan fellow and NPDF. The division also arranges to engage a few lecturers / teachers of nearby colleges and other Institutes as Guest Workers for their research work leading to PhD. The number of such research workers under various capacity during the periods are enlisted viz., 19 SRF, 30 JRF, 02 Young Scientist Scheme (YSS), 02 CSIR-TWAS Fellow, 01 DST Inspire Faculty, 01 DBT Ramalingaswami Re-entry fellow, 01 DST Ramanujan fellow, 04 DST-NPDF, 02 DBT Trainee, 11 Guest workers and 74 Project workers. Based on review of their progress of research work a few of them were registered to pursue Ph D degree from Dibrugarh University, Gauhati University, Assam University and our own Academy of Scientific and Innovative Research (AcSIR).

Academy of Scientific and Innovative Research (AcSIR): The division is the functionary unit of AcSIR in the Institute and has formulated and structured the activities of AcSIR.

Database Management:

The division maintains different databases on manpower of the institute viz., research workers, Ph D recipients, manpower, apprentice trainees, etc. The division provides information of Group IV scientist to RAB, to CSIR, visits of scientist abroad to ISTAD, CSIR.

Infrastructure Management:

The division manages different activities of the Boys' hostels, of the institute.

Project/dissertation to students:

The division arranges facilities for multi-theme and multi-level training programme viz., summer training, industrial training, practical training, dissertation, etc. for the selected students from different universities, colleges and institutes of the country up to a maximum period of six months. During this period 198 Student Trainee (summer & winter Season) completed their training in different division.

Apprenticeship Training Programme:

The division conducted the training programme for Graduate degree holders (Chemical & Mechanical), Laboratory Assistant (Chemical Plant) and ITI trade certificate holders in different trades like Fitter, Welder, Plumber, Draughtsman (Mechanical), Electrician and COPA. During this period 22 Apprentice trainees engaged under Apprenticeship training programme.

Cash Award to Bright SC/ST Students:

The division organized a programme to motivate the Bright SC/ST Students from North Eastern States. In this year 10 Students were awarded.

Planning and Project Monitoring Activities

The Division involves in the R&D management in terms of planning and allocation of resources and monitoring the outcomes of R&D projects. The division serve as the main centre for appropriate dissemination of information regarding FTT projects (MLP-1001, MLP-1002, MLP-1003, MLP-1004), Mission Mode Projects (HCP-007, HCP-0010, HCP-0011), CSIR-integrated Skill Development Program (NWP-100) and In-house projects (OLPs) as well as the other externally funded projects like (GAP, CNP, CLP and SSP) to the management and as well as the concerned scientists. The division provides proper logistic support to the management in respect of successful implementation and completion of the projects which reflects in the growth of the institute. The division also prepares the annual performance target of the projects and the laboratory as a whole by focusing the R&D thrust areas which are in accordance with the CSIR vision and National mission. The division also acts as a link between CSIR HQ and the Institutewith respect to formulation of Planned Projects & their execution & regular monitoring and reporting of progress. The division is also entrusted with preparation of various documents such as Man-month distribution of projects, Task Assignment of staff, Manpower Profile, etc. The division updates the information of various projects and reports are prepared regularly for management support and other purposes. Processing of purchase indents and maintenance of Lab Notebooks are other activities of the division.

The division is actively involved on the following activities:

External Cash Flow (ECF): The Institute undertakes projects funded by various external agencies. The details of funds received from these agencies were regularly recorded and monitored. Monthly statements of department wise ECF positions of the institute were prepared highlighting receipts from Govt Departments, Public and Private Organizations. Total ECF generated during 2017-18 was **1173.207** lakhs which comprised receipts from GovtDepts/ Ministries, Public Sector Industries and Private Sector organizations to the extent of **93.39%, 3.57% and 3.05%** respectively. ECF of the institute from different projects and services are shown below:

EXTERNAL CASH FLOW (ECF) FOR THE YEAR 2017 - 2018

S1	Category	Govt	Indian	*CPSE	**SPSE	Foreign	Foreign	Others	Total
No			Industry			Company	Agency		01/04/2017 To 31/03/2018
1	Collaborative	24.158	10.487	0.000	0.000	0.000	0.000	0.000	34.645
2	R&D Consultancy	0.000	0.620	0.000	11.962	0.000	0.000	0.000	12.582
3	Grant-in-aid	1066.500	0.000	23.490	0.000	0.000	0.000	0.000	1089.990
4	Premia	0.000	8.125	0.000	0.000	0.000	0.000	0.000	8.125
5	Sponsored R&D	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	Technical Service	4.978	11.450	2.143	4.252	0.000	5.042	0.000	27.865
Total:		1095.636	30.682	25.633	16.214	0.000	5.042	0.000	1173.207

* CPSE : Central Public Sector Enterprise

**SPSE : State Public Sector Enterprise

The Division wise ECF are as follows:

Division	ECF(in Lakh)
Chemical Science and Technology	144.68
Geo-Science Science and Technology	23.50
Biological Science and Technology	703.7
Materials Science and Technology	185.33
Engineering Science and Technology	64.40
Extension Centres (Branch Laboratory Itanagar & Branch Laboratory Imphal)	41.88
Research Planning and Business Development	9.72
Total	1173.21

Expenditure Monitoring: The expenditure of all the projects were monitored as per the budget allocation and uploaded the details of receipt & expenditure in PPM portal so that the fund position of a given project is readily accessible by concerned PI and management for effective management. The division facilitates in preparing Utilization Certificate and Statement of Expenditure of the externally funded projects.

Goods & Services Tax (GST): The division regularly carries out activities for the payment of GST accrued from the various scientific and technical services rendered by the institute on monthly basis. Total Service Tax realized during the year 2017-2018 is Rs. **10.76** Lakhs.

Project Status: Status of Project Contracted and Completed during 2017-2018 are as follows:

Sl No.	Sources Project	Project Contracted		Project Completed	
		Contract Value(Rs.in Lakh)	No. of Projects	Contract Value (Rs.in Lakh)	No. of Projects
1.	Grants-in-Aid	1428.45	11	51.86	4
2.	Collaborative	40.03	1	19.42	1
3.	Consultancy	8.17	2	0	0
	Total	1476.65	14	71.28	5

Audit Queries: The division responds to various audit queries (ISO, CSIR HQ & CAG) and Parliament queries in relation to all type of projects.

Contribution to Lab Reserve Fund: The division has taken initiative to transfer the overhead and Non-

Refundable Balance amount of Rs 35.9 Lakhs from ongoing as well as closed Externally Funded Projects to LRF in the financial year 2017-2018.

Research Utilization Data: Research Utilization Data deals with the revenue generated from the projects and other activities funded by external funding agencies undertaken by the institute. Yearly and Quarterly reports were furnished to CSIR Headquarters regularly.

PPM Portal: The division hosted and maintained a portal for display of all the project related reports on-line. The website is linked to the NEIST Intranet and at present displays reports on Projects- (Completed, on-going, in proposal stage), Research Utilization Data, External Cash Flow, Expenditure details of all ongoing funded and network projects, Goods and Service Tax, Employee List, Central Plan Scheme Monitoring System etc. Principal Investigators of projects can access and monitor on-line the expenditure incurred in their projects. For analysis of outcome of funded projects, the on-line form has been designed and the Principal Investigator fills it on completion of their projects. The reports available on-line have proved to be efficient technical support for the management and scientists.

Human Resource Portal: The division also hosted and maintained a portal to keep track of the manpower position in order to facilitate the top management to formulate the policy on human resource.

ERP System: CSIR-NEIST adopted the Enterprise Resource Planning (ERP) system and running it successfully. The division is mainly involved in updating project related data and mapping of NEIST staff with the roles of the staff, in CSIR Enterprise Transformation Portal.

Monthly/ Quarterly Performance Report: Monthly/ Quarterly Performance Report of NEIST contains information about the performance of the Institute on various parameters like papers, patents, development of technology, awards & appreciations received by scientists & staff members. Reports are regularly sent to CSIR HQ. These reports are also helping the management in reviewing its own performance as a monitoring tool.

Miscellaneous activities:

- a. The division maintains the CSIR-NEIST Website and involved in regular updation as and when required.
- b. Form-16 for all income tax assesses were generated.
- c. The division actively associated with the celebration of the CSIR Foundation Day on 26 September, 2017 and organized an essay and quiz competition on science topics among the staff of CSIR-NEIST & their wards.
- d. The division also involved in organizing the CSIR-NEIST Foundation Day celebration on 18th March 2017.
- e. Regular monitoring of different projects through divisional review meetings, all scientists meeting, review of Mission Mode and FTT projects, Young Scientists meet and various VCs related to FTT projects, mission mode projects, etc.
- f. Communication for awarding "THE CSIR-NEIST GOLDEN JUBILEE SCHOLARSHIP FOR UNDER GRADUATE STUDENTS (SCIENCE) OF NE INDIA"

- g. Compiled the Task Assignment of staff members for the year 2017-2018 and also prepared the list of Mentors for Scientists (Pay Band-3), Reporting and Review officers for Technical personnel of your division/Section has been prepared for the year 2017-18
- h. Prepared and uploaded various documents in the C-DIS Portal.

Knowledge Resource Centre

The Knowledge Resource Centre (KRC) continued to provide library and information services to R&D divisions, Research Fellows, outside students and individuals like from universities of NE region and R&D institutes. During the period, the KRC added 52 numbers of scientific books, 40 numbers of Hindi books to its stock and subscribed to 16 numbers of Indian print journals. Apart from these subscribed Scifinder, ACS journals, ASTM DL through NKRC and other 9 numbers of online journals individually subscribed from Elsevier. Also purchased Anti-plagiarism software for checking the similarity index of research papers & subscribed the BIS packs for one year which can be access through Intranet. The KRC also collected Annual reports from various R&D and academic institutions.

The KRC continues to maintain a database on publications and presentation of papers from the laboratory on the basis of which various reports with Bibliometrics analysis of laboratory's publications were carried out and when required by the management. KRC also providing the *Online Public Access Catalogue (OPAC)* with the help of ICT members which is now available in intranet.

संस्थान में राजभाषा गतिविधियां

RAJBHASHA HINDI ACTIVITIES IN THE INSTITUTE

हिन्दी दिवस समारोह का आयोजन

प्रत्येक वर्ष के भांति इस वर्ष भी सीएसआईआर-उत्तर-पूर्व विज्ञान तथा प्रौद्योगिकी संस्थान, जोरहाट ने राजभाषा हिंदी को कार्यालयीन कार्य में उत्तरोत्तर वृद्धि करने के लिए संस्थापन में राजभाषा हिंदी सप्ताह का आयोजन किया एवं संस्थान के विशाल सभागार में नगर राजभाषा कार्यान्वयन समिति एवं हिन्दी भाषा के विकास के लिए समर्पित संगठन "पूर्वाशा हिन्दी अकादमी", जोरहाट के संयुक्त तत्वाधान में विभिन्न कार्यक्रमों के साथ 14 सितम्बर को हिन्दी दिवस समारोह भव्य रूप से मनाया गया ।

हिन्दी सप्ताह का शुभारंभ 4 सितम्बर 2017 किया गया । राजभाषा सप्ताह के दौरान प्रतिदिन हिन्दी में कार्य करने के प्रति लगाव बढ़ाने के लिए कई प्रकार के प्रतियोगिताओं का आयोजन किया गया । हिन्दी कार्यशालाएँ आयोजित की गयी । सप्ताह का समापन 14 सितम्बर 2017 को हिन्दी दिवस समारोह के रूप में किया गया । निर्धारित समय के अनुरूप इस कार्यक्रम का शुभारंभ हिन्दी अधिकारी एवं सचिव, नगर राजभाषा कार्यान्वयन समिति श्री अजय कुमार ने भारत सरकार के गृह मंत्री के हिन्दी दिवस संदेश पढ़कर किया । समारोह के मुख्य अतिथि असमियाँ मूल की हिन्दी कवियित्री एवं लेखिका श्रीमति रूनु बरुआ उपस्थित थीं । श्रीमति बरुआ "पूर्वाशा हिन्दी अकादमी", जोरहाट की अध्यक्ष हैं । संस्थान के लिए यह पहला अवसर था जिसमें आम जन मानस में हिन्दी के प्रचार प्रसार से जुड़े गैर सरकारी संगठन "पूर्वाशा" को भी हिन्दी दिवस मनाने के लिए इस मंच पर आमंत्रित किया । संगठन के सक्रिय सदस्यगण कार्यक्रम में उपस्थित थे । इस अवसर पर मुख्य अतिथि ने निस्ट के अधिकारियों एवं कर्मचारियों को हिन्दी में काम करने के लिए प्रोत्साहित किया । असमियाँ एवं हिन्दी भाषा में समरूपता की व्याख्या की । उन्होंने महापुरुष शंकरदेव की भाषा ब्रजबूली के उल्लेख करते हुए हिन्दी के साथ तालमेल को समझाया ।

निस्ट, जोरहाट के निदेशक डॉ डी रामाय्या ने अपने सम्बोधन में सभी कर्मिकों एवं "पूर्वाशा" के सदस्यों को हिन्दी दिवस की शुभकामना दी एवं कार्यालय में राजभाषा हिन्दी के प्रचार-प्रसार पर बल दिया । राजभाषा नियम के अनुसरण में संस्थान में राजभाषा हिन्दी गतिविधियों एवं सुविधाओं का उल्लेख किया । संस्थान में चल रहे हिन्दी कार्यक्रम का ब्योरा भी प्रस्तुत किया । इस अवसर पर संस्थान के मुख्य वैज्ञानिक श्री सुबोध चन्द्र कलिता ने अपना स्वागत भाषण प्रस्तुत करते हुए "पूर्वाशा" एवं सदस्यों का आभार व्यक्त किया । कार्यक्रम के अंत में पुरस्कार वितरण समारोह का संचालन श्री अजय कुमार, ने किया । उन्होंने संस्थापन में 4 से 14 सितम्बर के दौरान आयोजित राजभाषा हिन्दी सप्ताह के अंतर्गत विभिन्न प्रकार के हिन्दी प्रतियोगिताओं हिन्दी श्रुत लेखन, हिन्दी प्रश्नोत्तर री के विजेताओं के नामों की घोषणा की और मुख्य अतिथि महोदय के कर कमलों से उन्हें पुरस्कार एवं प्रमाणपत्र से सम्मानित किया गया । हिन्दी शिक्षण योजना भारत सरकार के अंतर्गत प्रबोधध्वनीध्वजा हिन्दी भाषा पाठ्यक्रम पास स्टावफ सदस्यों को प्रमाण पत्र प्रदान किया गया ।



मुख्य अतिथि के रूप में बोलते हुए हिन्दी कवियित्री एवं लेखिका श्रीमति रेणु बरुआ एवं मंचासीन (दायें से) निस्ट, जोरहाट के मुख्य वैज्ञानिक डॉ सुबोध कलिता एवं संस्थान के निदेशक डॉ डी रामाय्या ।

संस्थान में राजभाषा हिंदी सप्ताह का आयोजन

विगत वर्ष के भांति इस वर्ष भी संस्थान में राजभाषा हिंदी सप्ताह मनाया गया। हिंदी सप्ताह के दौरान अधिकारियों, कर्मचारियों के प्रोत्साहन हेतु प्रत्येक कार्यदिवस में निम्नलिखित प्रतियोगिताएं एवं कार्यशालाएं आदि आयोजित की गयी ताकि उनमें एक प्रेरणा और उत्साह की उत्पत्ति हो सके :

4/9/2017 : प्रथम सत्र में हिंदी सप्ताह का शुभारंभ कार्यक्रम आयोजित हुआ जिसमें संस्थान के प्रत्येक वैज्ञानिक प्रभागों के नामित राजभाषा प्रतिनिधियों ने भाग लिया। द्वितीय सत्र में हिंदी कार्यशाला का आयोजन किया गया।

5/9/2017 : “कंप्यूटर पर हिंदी यूनिकोड एवं गूगल हिंदी का प्रयोग” विषय पर हिंदी कार्यशाला का आयोजन किया गया।

6/9/2017 : “डिजिटल इंडिया” विषय पर हिंदी लेख लेखन प्रतियोगिता आयोजित किया गया।

7/9/2017 : हिंदी के ज्ञान को केन्द्रित करते हुए हिंदी विवज (प्रश्नोत्तरी) प्रतियोगिता आयोजित की गयी। रुचिपूर्ण एवं ज्ञानवर्धक आयोजन के कारण इसमें काफी प्रतिभागी भाग लेते हैं। इस साल भी आयोजन ज्ञानवर्धक एवं आनंददायक रहा। भारतीय स्टेट बैंक के प्रबन्धक (राजभाषा), श्री अजय कुमार सिन्हा ने ‘कौन बनेगा करोड़पति’ के तर्ज पर विवज का संचालन किया। प्रतिभागी मुग्ध हो गए।

8/9/2017 : हिंदी श्रुतलेखन प्रतियोगिता आयोजित किया गया। अतिथि निर्णायक की भूमिका श्री रेवती कुमार, प्रबंधक (राजभाषा) सेंट्रल बैंक ऑफ इंडिया, आंचलिक कार्यालय, जोरहाट ने निभाया।

संस्थान में हिंदी कार्यशालाओं का नियमित आयोजन

राजभाषा नियम एवं सीएसआईआर मुख्यालय के दिशानिर्देश में संस्थासन के वैज्ञानिकों, तकनीकी अधिकारियों, तकनीशियनों, प्रशासन के अधिकारियों एवं कर्मचारियों के लिए तिमाही हिंदी कार्यशाला का आयोजन किया जाता है। प्रभावी कार्यान्वयन की दृष्टि से समय-समय पर कार्य एवं पद की एकरूपता को ध्यान में रखकर समूह बनाकर कार्यशाला में प्रशिक्षण दिया जाता है। वर्ष के दौरान निम्नलिखित प्रमुख कार्यशालाएं आयोजित की गयीं :

4 एवं 5 सितंबर 2017 : संस्थान के सभी प्रभागों के राजभाषा प्रतिनिधियों के लिए हिंदी कार्यशाला सह टेबुल वर्कशॉप का आयोजन किया गया। मुख्य विषय राजभाषा हिंदी का महत्व, प्रशिक्षण, कार्यालय में कार्यान्वयन मॉनिटरिंग आदि से संबंधित था।

19 एवं 20 दिसंबर 2017 : संस्थान के सभी नव नियुक्त सभी वैज्ञानिक, तकनीकी एवं सहायक के लिए हिंदी कार्यशाला सह टेबुल वर्कशॉप का आयोजन किया गया। मुख्य विषय राजभाषा हिंदी का महत्व, कार्यालय में कार्यान्वयन एवं कंप्यूटर पर यूनिकोड हिंदी अनुकूलता एवं गूगल हिंदी का प्रयोग था। कंप्यूटर पर सरलता से हिंदी में कार्य करने की विधि बताया गया।

11 एवं 12 अप्रैल 2018 : संस्थान के प्रशासनिक, लेखा एवं प्रबंधन कार्यालय में कांटेक्ट आधार पर कंप्यूटर पर कार्यरत कर्मचारियों के लिए हिंदी कार्यशाला प्रशिक्षण आयोजन किया गया। मुख्य रूप से कार्यालय में कार्यान्वयन एवं कंप्यूटर पर यूनिकोड हिंदी अनुकूलता एवं गूगल हिंदी का प्रयोग था।

व्याख्यान संगोष्ठी में सहभागिता, अन्य संस्थाओं के कार्यालयों के हिंदी कार्यशाला में विशेषज्ञ

श्री अजय कुमार, हिंदी अधिकारी एवं सचिव, नगर राजभाषा कार्यान्वयन समिति, जोरहाट को निम्नलिखित केंद्र सरकार के कार्यालयों में राजभाषा हिंदी के विशेषज्ञ संकाय सदस्य मुख्य अतिथि के रूप में उल्लेखित तिथि को आमंत्रित किया गया एवं उन्होंने तदनुसार प्रस्तुति दी :

ऑयल एवं नेचुरल गैस कारपोरेशन लि., असम एवं असम अराकान बेसिन, जोरहाट : 11 जुलाई 2017 को उनके द्वारा आयोजित “वाद विवाद” प्रतियोगिता में मुख्य निर्णायक की भूमिका के लिए आमंत्रित किया गया। 19 सितंबर 2017 को हिंदी पखवाड़ा समापन समारोह में मुख्य अतिथि के रूप में आमंत्रित किया गया।

दिल्ली पब्लिक स्कूल, जोरहाट : हिंदी एवं संस्कृत के शिक्षकों की नियुक्ति हेतु चयन समिति के विषय विशेषज्ञ के रूप में 28 अप्रैल 2017 को आमंत्रित किया गया।

भारतीय जीवन बीमा निगम, मण्डल कार्यालय, जोरहाट : 23 फरवरी 2018 को अधिकारियों प्रबन्धकों के लिए आयोजित एक दिवसीय हिंदी कार्यशाला में मुख्य प्रशिक्षक की भूमिका के लिए आमंत्रित किया गया।

भारतीय विमानपत्तखन प्राधिकरण, रंरैया, जोरहाट : 22 फरवरी 2018 को “राजभाषा कार्यान्वयन में आई टी टूल्स का विवरण” विषय पर आयोजित कार्यशाला में व्याख्यान के लिए आमंत्रित किया गया।

क्षेत्रीय रेशम अनुसंधान केंद्र, केंद्रीय रेशम बोर्ड, जोरहाट : 23 जून 2017, 14 अगस्त 2017 एवं 30 दिसंबर 2017, को आयोजित हिंदी कार्यशाला में कई विषयों के साथ मूलतः “हिंदी व्याकरण धटिप्पणी एवं मसौदा” विषय पर व्याख्यान हेतु आमंत्रित किया गया।

भारत सरकार, गृह मंत्रालय, राजभाषा विभाग, नई दिल्ली : विभाग के संयुक्त सचिव द्वारा बिहार की राजधानी पटना में 10 मार्च 2018 को आयोजित “पूर्व एवं पूर्वोत्तर क्षेत्रीय राजभाषा सम्मेलन” में सचिव, नगर राजभाषा कार्यान्वयन समिति, जोरहाट के रूप में प्रस्तुति के लिए आमंत्रित किया। तदनुसार जोरहाट राजभाषा विकास का ब्योरा सम्मेलन में प्रस्तुत किया।

हिंदी शिक्षण योजना द्वारा हिंदी भाषा प्रशिक्षण पाठ्यक्रम केंद्र का संचालन

	परीक्षा फॉर्म भरे	परीक्षा में बैठे	परीक्षा में उत्तीर्ण	पुरूस्कृत परीक्षार्थी
प्रबोध	10	06	06	05
प्रवीण	31	22	22	21
प्राज्ञ	08	07	07	07

जुलाई 2017 सत्र : हमारे संस्थान के अलावा भारतीय स्टेट बैंक, जोरहाट एवं उसके अन्य शाखाएं, सेंट्रल बैंक, यूको बैंक, ओ.एन.जी.सी. एवं वर्षा वन अनुसंधान संस्था न, जोरहाट से प्रशिक्षण हेतु नियमित ६ प्राइवेट नामित किए गए तथा नवम्बर 2017 को आयोजित परीक्षा में भाग लिया । कुल प्रशिक्षित आकड़े दर्शाए गए हैं ।

	परीक्षा फॉर्म भरे	परीक्षा में बैठे	परीक्षा में उत्तीर्ण	पुरूस्कृत परीक्षार्थी
प्रबोध	11	09	09	09
प्रवीण	21	19	19	18
प्राज्ञ	20	16	16	14

नस्टव, जोरहाट में गठित राजभाषा कार्यान्वयन समिति (राकास) की बैठकें :

प्रावधान के अनुसार संस्थान में प्रभावी राजभाषा कार्यान्वयन के लिए राजभाषा कार्यान्वयन समिति गठित है । नियमानुसार प्रत्येक तीन माह में बैठक आयोजित की जाती है एवं कार्यान्वयन की मोनिटरिंग भी की जाती है । इस वित्तीय वर्ष में उल्लेखित तिथि 22/05/2017, 23/08/2017, 11/12/2017 एवं 14/02/2018 को बैठक आयोजित की गई एवं महत्वपूर्ण निर्णय लिए गए ।

नगर राजभाषा कार्यान्वयन समिति (नराकास), जोरहाट की बैठकें :

नगर राजभाषा कार्यान्वयन समिति (नराकास), जोरहाट भारत सरकार, गृह मंत्रालय, राजभाषा विभाग, नई दिल्ली द्वारा बड़े बड़े शहरों में अवस्थित केंद्र सरकार के कार्यालयों में राजभाषा हिंदी के प्रयोग को सुनिश्चित करने के उद्देश्य नगर राजभाषा कार्यान्वयन समिति की स्थापना की जाती है । बड़े एवं सक्षम कार्यालय के प्रधान को अध्यक्ष नामित किया जाता है । स्थानीय सभी केंद्रीय कार्यालय इसके सदस्यत्व में होते हैं एवं प्रत्येक वर्ष इसकी बैठक आयोजित की जाती है । वर्ष 2009 में भारत सरकार ने नगर राजभाषा कार्यान्वयन समिति, जोरहाट का कार्यभार निदेशक, निस्टय, जोरहाट को सौंपा तथा सचिवीय कार्य हेतु श्री अजय कुमार, हिन्दी अधिकारी, निस्टय, जोरहाट को नामित किया । स्थायी केंद्रीय कार्यालय, सैन्य संगठन, वायु सेना, राष्ट्रीय युक्त बैंक, स्वयंसेवक सेवा संस्था, प्रतिष्ठान, परिषद समिति के सदस्य, हैं जो नियमित आयोजित बैठक में राजभाषा हिंदी पर चर्चा के लिए भाग लेते हैं ।

समिति की ३३वीं बैठक : नगर राजभाषा कार्यान्वयन समिति, जोरहाट की 33वीं बैठक गुरुवार 1 मार्च 2018 को संपन्न हो गया । भारत सरकार, राजभाषा विभाग (कार्यान्वयन) के अनुसंधान अधिकारी श्री बदरी यादव की उपस्थिति में बैठक की अध्यक्षता डा. डी रामाय्या, निदेशक, निस्ट, जोरहाट ने किया ।

कार्यक्रम का संचालन समिति के सचिव श्री अजय कुमार ने किया । उपस्थित कार्यालयों के प्रधान एवं प्रतिनिधियों ने अपना परिचय दिया । तत्पश्चात् समिति के अध्यक्ष ने उपस्थित कार्यालय प्रधान एवं प्रतिनिधियों का हार्दिक स्वागत किया एवं समिति के लक्ष्य को दोहराया । राजभाषा हिंदी का कार्यालयों में प्रगति पर चर्चा के दौरान सभी कार्यालयों ने अपने-अपने प्रयास, प्रोत्साहन गतिविधियां एवं आने वाली समस्याओं को समिति के सामने रखा । प्रगति एवं समस्या दोनों की समीक्षा की गयी । समिति के अध्यक्ष एवं सचिव दोनों ने सरकार के त्रिभाषा सूत्र संबंधी दिशानिर्देश को पटल पर रखा । किसी भी केंद्रीय सरकार के कार्यालयों के बाहर स्थित बोर्ड तीन भाषाओं अर्थात् सबसे ऊपर असमिया, हिन्दी और अंत में अङ्ग्रेजी लिखा होना चाहिए । यहाँ तक कि अक्षर के आकार में भी भिन्नता नहीं होनी चाहिए । तीनों भाषा के आकार समान एवं उपयुक्त क्रम में ही होना चाहिए । सरकारी कार्यालय मूल कार्य जन सेवा है, अतएव जन साधारण को समझने में आसानी हो । खासकर बैंक को अपने कार्यालय के अंदर भी क्षेत्रीय भाषा अर्थात् असमिया एवं हिन्दी का प्रयोग करना चाहिए ताकि सामान्य जन को सुविधा हो । कार्यालयों में काम करने वाले हिन्दीतर भाषी अधिकारियों कर्मचारियों को निस्ट परिसर में भारत सरकार, राजभाषा विभाग द्वारा संचालित हिन्दी शिक्षण योजना के पाठ्यक्रम में नामांकन करने के लिए कार्यालयों से अनुरोध किया गया ताकि हिन्दी में काम करने के योग्य बन सकें ।



वर्ष 2016-17 के लिए राजभाषा विभाग द्वारा निर्धारित मानदंडों के आधार पर सदस्य कार्यालयों के बीच उत्कृष्ट राजभाषा कार्यान्वयन करने वाले चार कार्यालय को शील्ड एवं प्रशस्ति पत्र से पुरुस्कृत किया गया। पुरुस्कृत कार्यालयों में भारतीय स्टेट बैंक, यूको बैंक, वर्षा वन अनुसंधान संस्थान एवं केंद्रीय मुगा एरी अनुसंधान एवं प्रशिक्षण संस्थान सम्मिलित हैं। अध्यक्ष डॉ डी रामाय्या एवं राजभाषा विभाग के प्रतिनिधि श्री यादव ने भारतीय स्टेट बैंक, प्रशासनिक कार्यालय, जोरहाट के मुख्य प्रबन्धक श्री डी बी दास एवं राजभाषा अधिकारी श्री अजय कुमार सिन्हा को पुरस्कार प्रदान किया।

इस प्रकार पुरस्कार यूको बैंक, अंचल कार्यालय, जोरहाट के वरिष्ठ प्रबन्धक राजभाषा श्री अमरदीप कुलश्रेष्ठ, केंद्रीय मुगा एरी अनुसंधान एवं प्रशिक्षण संस्थान, जोरहाट के वैज्ञानिक डॉ राजेश कुमार एवं वर्षा वन अनुसंधान संस्थान, जोरहाट के वैज्ञानिक डॉ राजीव कुमार कलीता ने प्राप्त किया। पुरुस्कृत कार्यालय ने राजभाषा हिन्दी के विकास के लिए अपने उल्लेखनीय कार्य को प्रस्तुत किया ताकि अन्य कार्यालय अनुकरण कर सकें। इस प्रकार के अन्य कार्यालयों ने भी अपने प्रयास को रखा। बैठक में नगर राजभाषा कार्यान्वयन समिति, जोरहाट द्वारा प्रकाशित पत्रिका "अनुनाद" ई-पत्रिका के पंचम अंक के प्रिंट वर्जन का लोकार्पण किया गया। पत्रिका में राजभाषा गतिविधियों के साथ साहित्यिक रुचि के आलेख रहते हैं। केंद्रीय रिजर्व पुलिस बल के कमांडेंट श्री रंजन कुमार बरुआ, केंद्रीय अद्योगिक सुरक्षा बल के उप कमांडेंट श्री ए के गौतम, असम राइफल्स के उप कमांडेंट श्री जितेंद्र सिंह, 41 सब एरिया के श्री सूर्यकांत श्रीवास्तव, रबर बोर्ड के विकास अधिकारी श्री ओ साबू एवं नाबार्ड बैंक के सहायक महाप्रबंधक के वाइफ के साथ साथ नेशनल ब्यूमरो ऑफ सॉयल सर्वे एण्डश लेण्डड यूज प्लानिंग, इन्दिरा गांधी मुक्त विश्वविद्यालय, क्षेत्रीय कार्यालय, एन एस एस ओ कार्यालय, केंद्रीय विद्यालय, निस्ट, ओएनजीसी, बी एस एन एल, केंद्रीय जल आयोग, इंडियन बैंक, डाक विभाग, केंद्रीय उत्पाद एवं सेवा कर कार्यालय, आयकर कार्यालय, बैंक ऑफ बरोदा के प्रतिनिधियों ने भाग लिया एवं अपने कार्यालय के हिन्दी प्रगति को प्रस्तुत किया। अपने साक्षिप्त सम्बोधन में श्री यादव ने सभी कार्यालयों से अपील किया कि वे राजभाषा हिन्दी के कार्यान्वयन में समुचित ध्यान दें एवं किसी प्रकार के सहयोग के लिए सचिव नराकास से संपर्क करें।

अंत में यूको बैंक, अंचल कार्यालय, जोरहाट के वरिष्ठ प्रबन्धक राजभाषा श्री अमरदीप कुलश्रेष्ठ ने अपने वक्तव्य के साथ धन्यवाद ज्ञापित किया।

S&T Services & Facilities Created

Shri Hitendra Nath Goswami, Hon'ble Speaker, Assam Legislative Assembly inaugurated Skill Development Training Centre at CSIR-NEIST, Jorhat



Shri Hitendra Nath Goswami, Hon'ble Speaker, Assam Legislative Assembly inaugurated the Skill Development Training Centre at CSIR-NEIST on 8 July 2017 in presence of the Director, CSIR-NEIST, Dr D Ramaiah and staff members. The Centre has been created under the vision of National Skill India Programme and CSIR Skill Development Initiative with an aim to develop skilled human resources in various trades for socio-economic development of the country.

Banana Fibre Development Centre inaugurated at CSIR-NEIST Branch Lab, Imphal



The newly built center was inaugurated by honorable Minister of Industry Shri Th Biswajit, in presence of honorable Revenue Minister Shri Karam Shyam, Govt. of Manipur.

Spawn production and mushroom cultivation unit

Establishment of spawn production and mushroom cultivation unit at NEIST Branch Itanagar for skill development programme on mushroom cultivation for livelihood generation.



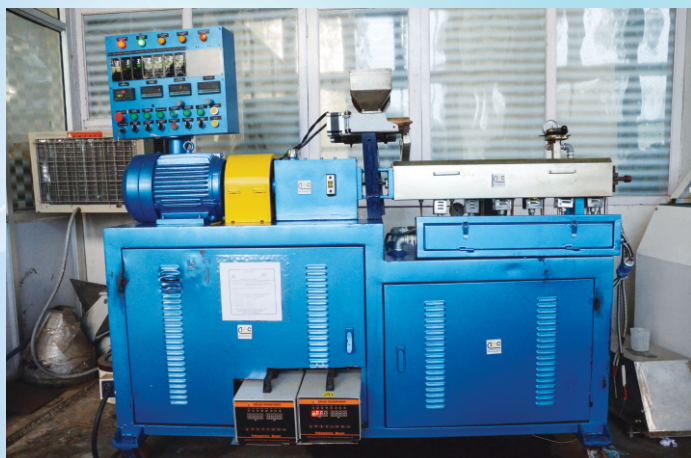
Newly established Mushroom spawn production and cultivation unit. SHGs are trained for cultivation of mushroom.

Vermicompost and Vermiwash facility



Newly established Vermicompost and Vermiwash facility for training and production at Branch Lab, Itanagar

Co-rotating Twin screw extruder



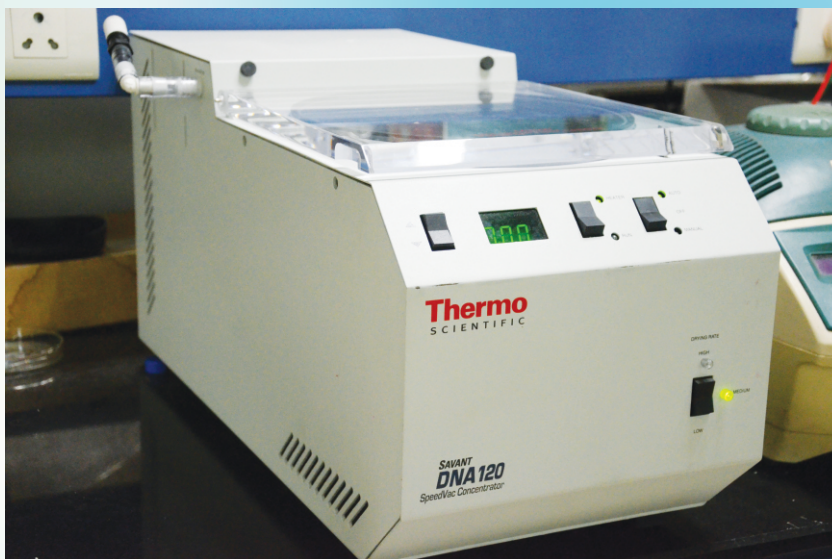
Universal Testing Machine for Fiber



Genome Station



SAVANT DNA Vacuum concentrator integrated system



CNC Turning Facility



CNC Milling Facilities



Workshops /Seminars Organized

Bioinformatics training-cum-workshop

Bioinformatics Group has conducted Training-cum-Workshop on "*Basic Bioinformatics Tools*" in the field of basic bioinformatics tools and Next generation sequencing analysis during 11 - 12 July, 2017 with the support of Department of Biotechnology (DBT) Govt. of India. The training-cum-workshop" was successfully organized at BIF Center, BSTD-Biotechnology, CSIR-NEIST where 29 Nos. of M.Sc. student, Ph. D. scholars & faculty members participated in the workshop.



Project Development Workshop on Technology Empowerment of North-East: Water, Energy and Communication Solutions (TENE-WECS) held at CSIR-NEIST



A three-day Project Development Workshop on 'Technology Empowerment of North-East: Water, Energy and Communication Solutions (TENE-WECS)' was held at CSIR-NEIST during 2-4 November 2017. The workshop was organized by CSIR-NISTADS, New Delhi in association with CSIR-NEIST and