



# NEIST NEWS

उत्तर-पूर्व विज्ञान एवं प्रौद्योगिकी संस्थान, जोरहाट  
NORTH-EAST INSTITUTE OF SCIENCE & TECHNOLOGY, JORHAT

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## HON'BLE CHIEF MINISTER OF ASSAM SHRI TARUN GOGOI VISITED NEIST JORHAT



Dr P G Rao is briefing about NEIST to Sri Tarun Gogoi, Chief Minister, Assam



The Chief Minister interacting with Scientists in the NEIST Exhibition Hall

Sri Tarun Gogoi, Hon'ble Chief Minister of Assam accompanied by his officials paid a visit to NEIST-Jorhat on 1 February, 2008. The Chief Minister was accorded a warm reception at the entrance by the Director, Dr P G Rao and his officials. Soon after, the Chief Minister had a brief meeting in the Conference Room in which the Director Dr Rao made a presentation about the NEIST activities and apprised the Chief Minister of the various latest research works being undertaken for the development of the state as well as the North East. The Chief Minister also took a keen interest in the research activities and evinced more specific interest in the areas of Biotechnology and Geosciences. He visited both the departments and interacted with the scientists concerned on some specific issues. He was later on taken to the NEIST Exhibition Hall where he was shown the various displays and exhibits and also presentations of the individual departments were made by the departmental scientists for the knowledge of the Chief Minister. The Chief Minister was learnt to have expressed satisfaction and happiness for all the good works being done at NEIST and expressed hope for future collaborations. The Chief Minister spent nearly an hour at NEIST.

**NATIONAL SEMINAR ON ASSAM GAS CRACKER DOWNSTREAM PROCESSING  
ORGANISED**



Seen on the dais(from left) Shri Sujit Bhujabal, Sri Dip Gogoi, Sri B K Handique, Dr G Thyagarajan, Dr P G Rao and Dr N N Dutta

A two-day national seminar on 'Assam Gas Cracker Downstream Processing' under the theme 'Technology based strategy for development of NE India' was held at NEIST-Jorhat during 15-16 February, 2008. Held at NEIST auditorium, the inaugural function of the seminar was presided over by Dr G Thyagarajan, Former Director, RRL (NEIST), Jorhat and Shri B K Handique, Hon'ble Minister of State for Chemicals and Fertilizers, Govt. of India was the Chief Guest who inaugurated the function while Shri Dip Gogoi, Member of Parliament took part in the event as the Guest of Honour. Notable among others present were Shri Sujit Bhujabal, Director, Department of chemical and Petrochemicals, New Delhi, Prof (Dr) S K Nayak, Director General, CIPET, Chennai, Shri R K Kashyap, Chief Operating Officer, Brahmaputra Cracker and Polymer Limited, Guwahati, Shri Vijay Merchant, Chairman, Environment Committee, Plastindia Foundation, Mumbai, Shri Ibotomba Shingh, Manager (Project), CIPET, Changsari, Assam, Shri O P Taylor, Managing Director, Assam Petrochemicals Ltd., Namrup, Assam, Shri Amar Seth, Vice President, Plastinda Foundation, Mumbai, Shri N B Narjaree, General Manager, Small Industry Development Bank of India, Guwahati, Shri A K Agarwal, Deputy Industrial Advisor, Department of Chemical and Petrochemicals and Shri Sumit Basu, Reliance Industries, Kolkata besides the scientific community of NEIST. In his welcome address Dr P G Rao, Director, NEIST-Jorhat and Chairman, Organising Committee accorded a very warm welcome to all the participants. Commenting on the theme of the seminar he said 'science has made self-sustaining and exponential growth over the years. He emphasised that science is not a separate entity of the society and hence it cannot be separately accountable for development, rather it constitutes an integral part of the social development as a whole. Despite best efforts in the past, the NE region has not been able to derive commensurate benefit of science. Therefore, today in the post-liberation era, renewed attempts have to be made to proceed vigorously to harness the resources towards free-market economy and global integration and for that suggestions from seminar experts like the ones in this seminar is of utmost necessity. He dedicated the seminar to the two of senior scientists of laboratory namely Dr P C Tamuly and Sri D K Dutta who were to superannuate towards the end of the month. Delivering his speech as the Chief Guest the Hon'ble Minister Shri B K Handique said that he was looking for such a seminar to be held which is very timely. He mentioned that by choosing the subject with special reference to the Assam Gas Cracker Project, the NEIST-Jorhat actually did a yomen service in the context of proverbial industrial backwardness. He informed that pleople of the region have wrong information about plastic. Plastic is not responsible for environmental clearance. Against the per capita consumption of 100 kgs of plastic in the western countries, its per capita consumption the in North East India is just only 1 kg. and plastic have percolated down to all the sectors of the economy. Under the circumstance and given the potential the plastic can play a major role for removing industrial backwardness of the region as well as employment generation and NEIST-Jorhat has a definite role to play in it, he said. The objectives of the Gas Cracker Project as divulged by the Minister are - (1) To tackle the unemployment situation - about 1 lakh jobs will be created within a span of two decades, (2) To integrate polymer into the downstream industries, (3) to put NE India in the national polymer based industries, (4) Indian plastic industry is at the cross-road and indian polymers to play significant role in the Asia-Pacific, the fastest growing economy in plastic industry sector. Speaking in the same vein the Guest of Honour Shri Dip Gogoi also appealed to develop technologies in the context of global free-market scenario based on the strategies for needbased technology structure, total quality management and environmental concerns. He complimented NEIST-Jorhat for sustaining efforts for the development of NE India. In his presidential speech Dr Thyagaran also mentioned that there is a misconception and misinformation in the mind of people about plastic as a polluting staff. To dispell the misconception it is necessary to have the environment treatment system in place before the actual start of the plant and in that connection he also suggested to integrate the environmental technology with that of the chemical technology in a manufacture unit. Citing examples, he

said that only two states in India namely Gujarat and Maharashtra have done it successfully and no other states have done it so. Regarding the Gas Cracker project in Assam he said that skilled professionals and technicians will get good employment. He advised the NEIST authorities to have Polymer Science in its future research planning. The seminar had three plenary lectures delivered by eminent experts, four technical sessions in the areas like Petroleum & Petrochemicals, Biotechnology & Bioprocess, Chemical/Fine Chemicals/Materials and Agro Technology/Agrobased Products and Rural Development which was followed by panel discussions of the panelists. A total of 16 technical papers were presented in the seminar. To commemorate the event a Souvenir was also brought out on the occasion which was formally released by the Chief Guest.

## NEIST PARTICIPATION IN CII NORTH EAST INDIA INVESTMENT SUMMIT

The Confederation of Indian Industry (CII) jointly with the Ministry for the Development of North Eastern Region (DoNER) and North East India Industry Ministers' Forum organised a two-day North East India Investment Summit during 11-12 January, 2008 which was held at Karmabir Nabin Ch Bordoloi Indoor Stadium, Sarusajai Sports Complex, Guwahati. The summit was attended by Dr P C Tamuly, Scientist F on behalf of the NEIST. The important personalities who attended the summit were Dr Joyram Ramesh, Minister of State for Commerce, Govt. of India and Sri Tarun Gogoi, Hon'ble Chief Minister of Assam, Mr Dipankar Chatterji, Chairman, CII, North East Council, Mr Pradyut Bordoloi, Minister for Industry, Commerce & Power, Govt. of Assam besides the Industry Ministers of North Eastern states, Political leaders, Govt. officials, Institutional and Industry Representatives and NRIs from USA, UK, Thailand, Austria, Singapore and Australia. Various issues and prospects in areas like pre-engineered building construction, health, development of urban infrastructure, tourism, hospitality and connectivity, technical and medical education were discussed for addressing the developmental issues related to North Eastern region. There was one-to-one interactions and Dr Tamuly interacted with NRI delegates on areas like low cost housing and the role the NEIST can play in various sectors like utilization of Assam Coal for power generation and seismic microzonation study for urban infrastructure development. The NRIs expressed their willingness to contact and visit NEIST for R&D support for development of NER.

## MOTIVATIONAL PROGRAMME FOR TALENTED SCHOOL STUDENTS



Dr Nalin Borthakur, Scientist, Dr P G Rao, Director, NEIST and Dr D C Goswami, Scientist 'G' in the inauguration of Motivational Programme at NEIST

A week-long Motivational Programme for Talented School Students was held in the laboratory during 03-08 January, 2008 for a few selected bright secondary school students. Specially designed for the talented young school students, the high interactive programme was participated by a total of thirty two bright students of secondary schools from Assam and Tripura and twelve of their escorting teachers. The inaugural session was presided over by Dr P G Rao, Director, NEIST-Jorhat in the presence of distinguished scientists, invitees, media persons and others in which Dr

Nalin Borthakur, a senior scientist of the laboratory took part as the Special Guest. Dr Rao gave a warm welcome to the participants and exemplified the opportunities given in this particular and other programmes of the institute and urged upon them to take advantage of the programmes. Dr Nalin Borthakur advised the students to imbibe the spirit of science and allow scientific methodology throughout their life. The participants were divided in groups visited various sections of the laboratory where scientific demonstrations were given by the appointed scientists. They were also allowed to opt for six projects under the disciplines Chemistry, Electronics and Telecommunication, Medicinal & Economic Plants, Paper & Boards, Plant Tissue Culture and Entomology with particular reference to Butterfly and groups worked on minor projects within the time frame. A science elocution competition was held in which the students delivered talks with projections and models on pre-distributed topics. A field visit for nature study was also organised to Deopahar, Numaligarh Refinery(NRL) and Naturalist late Dr Robin Banerjee's Nature Museum at Golaghat. An interactive popular science talk on nature and health care was also arranged for the students which was delivered by Dr Prabin Saikia of Bihpuria College of Lakhimpur. The students also visited the Biosphere spot and ancient engineering heritage sites at Sivasagar district. During their visit to the Assam Agricultural University and Tocklai Experimental Station, brief lectures and demonstrations on various disciplines of science were arranged. The students and their teachers met a panel of scientists of the laboratory and interacted with them on various topics of science. The panel included Dr P C Tamuly, Shri H P Sarma, Dr SC Nath, Dr BK Gogoi, Mr Wahid Ahmed, Dr Anjan Baruah, Dr P K Borah, Dr PC Sarmah, Dr Mina Borthakur, Mrs Alakananda Sengupta, Dr Ratul Saikia, Dr Mantu Bhuyan, Shri Dipankar Neog, Shri Khirod Buragohain and Dr P K Baruah.

## **NEIST DEVELOPED A NEW PROCESS FOR HERBAL AGARBATTI**

A new process for the production of Agarbatti from herbal preparations was recently developed in the laboratory. The Agarbatti has the mosquito repellent property. Being herbal based it is eco-friendly as well. Developed as a cottage level knowhow and priced at an affordable knowhow fee of just Rs. 20,000 only, the process is suitable for small and marginal entrepreneurs. The process has recently been released to a first client in Sivasagar district of upper Assam for commercial production of the Agarbatti.

## **NEIST EFFORTS FOR YIELD IMPROVEMENT OF GINSENOSE**

After an extensive research the NEIST - Jorhat has been able to improve the quality as well as yield of the ginsenoside alkaloid content of the rare wonder herb Ginseng through the application of Bioreactor method and cell-culture as reported in a section of local dailies. It is worth mentioning here that ,although rare, this herb is found wildly growing in the North-Eastern states. On the other hand, the laboratory has also been able to isolate a soil microbe from the soils in the nearby areas of Golaghat district of Assam which can suitably be employed for treating the deadly diseases like tuberculosis, etc. Ginsenoside is a very high value natural product which is used for enhancing human vigour and vitality, longevity, as general health tonic, anti-ageing agent and also as an aphrodisiac. The alkaloid content of Chinese and Korean Ginseng is of very superior quality unlike those found in India which have inferior quality and poor yield. Hence, research was undertaken in the laboratory to reverse the situation and to a considerable extent the laboratory succeeded in its efforts, the report said. However, at this stage the scientists are keeping themselves away from making the claim in order to maintain confidentiality. Vigorous research have been pursued further.

## **NIGERIAN DELEGATION VISITED NEIST JORHAT**



Dr P G Rao, Director with the members of Nigerian delegation

A Nigerian delegation under the Rotary International comprising of the members Ms Asibor Blessing Izehi, Ms Chima Nkechi Rosemary, Ms Akeju Grace, Mr Lawal Olaniyi Lateef and Mr Omotoyinbo Adedayo Matthew, the GSE Team Leader visited NEIST Jorhat on 18 January, 2008 under what is known as Rotary International Group Study Exchange Programme. The team had been in India for the past couple of days touring several places through the country. Visit to NEIST was a part of their itinerary. The idea behind the Rotary International Group Exchange Programme is basically to develop a mutual relationships with the fellow Rotarians of member countries of all over the world including India. The team for the purpose was carefully selected by Nigerian counterpart through some established selection procedure so as to be able to make the members act as ambassadors of Nigeria to India. The team was given a warm welcome by the Director Dr P G Rao and was apprised of the various on going scientific activities of the NEIST. They were also taken round the various departments of the laboratory.

## **IAS TRAINEE OFFICERS VISITED NEIST**



Dr P G Rao, Director with the visiting IAS trainee officers

A group of 19 IAS trainee officers including the accompanying officials from the Jorhat District Administration paid a visit to NEIST on 22 January, 2008 as a part of the programme of the Govt. of Assam for Familiarization of the North East at the instance of the Deputy of Commissioner of the Jorhat district and in pursuance of the directive of the Joint Director of Training, Assam Administrative Staff College, Khanapara, Guwahati. The trainee officers were received by the Head, Information & Business Development and were taken round the various departments of the laboratory for apprising them of the various ongoing research activities on the spot. A video film on the activities of

the NEIST was also screened at Applied Chemistry Hall of the laboratory for the benefit of the trainee officers. After their brief programme at NEIST, the trainee officers were accorded a warm send off.

### **36TH MEETING OF THE NEIST RESEARCH COUNCIL HELD**



A view of the 36th meeting of the Research Council of NEIST-Jorhat

The 36th meeting of the Research Council of NEIST-Jorhat was held during 7-8 February, 2008 in the Conference Room of NEIST-Jorhat under its new tenure Chairman Dr Harsh K Gupta, Former Secretary, DOD, NGRI, Hyderabad. Among other Members who participated in the meeting were Prof H R Wason, IIT, Roorkee, Mr P C Patnaik, Former Managing Director, NEITCO, Kolkata, Dr U K Mishra, Representative of Secretary, NEC, Shillong, Dr P G Rao, Director, NEIST-Jorhat and Dr L Nath, Member Secretary, NEIST Research Council. The Director welcomed the members which was followed by the opening remarks by the Chairman. The Director made a presentation of NEIST-Jorhat's activities to the members followed by which discussions on various on going suprainstitutional and in-house projects pertaining to the disciplines like Geosciences, Agro-science, Biological Science, Chemical sciences, Engineering science, Materials science, Branch Laboratory, Sub-station, etc.were held and approvals were accorded. It will be worthwhile to mention here that the Research Council is highest decision making body of the laboratory regarding its scientific and R&D activities.

#### **Process knowhow released**

(i)Low Dust Chalk Pencil to Sri Kulen Kalita, Science Teacher & Secretary Hamren Science Society, Hamren Karbi Anglong District of Assam.

(ii)Herbal Agarbatti with Mosquito Repellant Properties to M/s Premier Agro Products, Sivasagar.

### **EXPERIMENTAL CAPTIVE PRODUCTION OF HAND-MADE PAPER BOARD**



Handmade papers being produced in the NEIST Experimental Production Unit

The Cellulose Pulp & Paper division of NEIST has recently started producing Hand Made Paper from waste paper in an experimental production unit for captive consumption of the laboratory. The unit produced 250 file covers and boards in the first batch which would be handed over to stationery store for distributing among the various departments for their use. The division has put a target of producing 2000 file covers and boards during the year 2008-2009.

## Projects undertaken

### Network Project

(i) Environmental contaminants : new screening technologies and effect on Human health. Coordinating Laboratory : ITRC-Lucknow, Allocation (2007-2012) Rs. 201 lakh, Rs. 34 lakhs for current financial year. Nodal Scientist - Dr B G Unni, Scientist F, NEIST-Jorhat.

### Collaborative

(i) Studies on molecular strategy to detect most potent phytopathogenic fungi prevalent in North East India and development of herbal control measures in collaboration with Defence Research Laboratory, Tezpur on behalf of DRDO, Ministry of Defence, Govt. of India. (Total Cost - Rs. 5 lakh, Period - 2.5 years, PI- Dr B G Unni, Scientist F, Period - 5 years)

(ii) CSIR Rural Development Project of 11 Five Year Plan of IICT Hyderabad in collaboration with NEIST-Jorhat to train the sericulture farmers in sericulture in Assam. Coordinator - Dr B G Unni, Scientist F.

### Grant-in-aid

Development of Super High Strength Proppants undertaken on behalf of Oil Industry Development Board, Ministry of Petroleum & Natural Gas, Govt. of India, New Delhi. (Total Cost- Rs.33.50 lakh, PI- Dr D K Dutta, Scientist F, Period - 3 years )

Assessment of Air Quality in and around Coal Industries of North East India undertaken on behalf of the Department of Science & Technology, Govt. of India, New Delhi. ( Project Cost : Rs. 8.22 lakh, PI-Dr (Mrs) Puja Khare, Period - 3 years)

### Consultancy

Modification of coke oven undertaken on behalf of M/s Radha Code Pvt. Ltd., Guwahati. ( Total Cost - Rs. 3.25 lakh, PI-

### **Projects evaluated**

Dr H B Singh, Scientist-in-charge, NEIST Substation, Imphal, Manipur evaluated the following CAPART Projects :

- (i) Development of Paddy Straw Mushroom Technology (mid-evaluation : evaluated on January 6, 2008) submitted by Voluntary Service for Social Development, Pangei, Manipur (Assignment No. RT/MAN/13/30/2003/1703).
- (ii) Economic Upliftment of Tribal Farmers through Ginger Cultivation (pre-funding; evaluated on February 13, 2008) submitted by United Rural Development Service, Heirok, Manipur ( Assignment No. ARTS/MAN/13/44/2006/568)
- (iii) Innovative Community Development Project (pre-funding; evaluated on December 28-29, 2007) submitted by Sonapur Youth Welfare Association, Jiribam, Manipur (Assignment No. PC/MAN/13/49/2006/423)

Dr H B Singh, Scientist-in-Charge, NEIST Substation, Imphal was invited to act as an expert for evaluation (presentation) of NMPB, New Delhi Institutional Projects and evaluated 11 projects on February 3, 2008 which were submitted by (i) Forest Department, Manipur (ii) KVK(ICAR), Utlou, Imphal, (iii) IBSD, Imphal and (iv) Manipur University, Imphal.

### **Project sanctioned**

#### **Grant-in-aid**

Characterization beneficiation and utility study of some Graphite deposits from Arunachal Pradesh to be undertaken on behalf of Ministry of Mines, Govt. of India, New Delhi. (Total Cost - Rs. 26.30, PI - Shri Pinaki Sengupta, Scientist, Period- 3 years).

### **Patent Filed**

0349NF2003/IN : An improved process for the production of 3,4,5,6,7-hexahydro-1-(arylmethyl)isoquinolines. Authored by D Konwr, R N Das & N Borthakur. Filing Date- 16/11/2007.

### **SEMINAR/SYMPOSIA/MEETING ATTENDED**

**Dr P G Rao, Director, NEIST-Jorhat attended the following meeting :**

- (i) Meeting at the Office of Recruitment & Assessment at CSIR Complex, New Delhi on 28 January, 2008.
- (ii) Project Review Committee meeting of M/s Ogene Systems (I) Pvt. Ltd., for the ongoing Project titled 'Development of process for the manufacture of Nano Labeled DNA/RNA Compounds on 11 February, 2008 at Kolkata.
- (iii) National seminar on Recent Advances in Natural Products Chemistry held at Guwahati on 22 February, 2008 and delivered the key-note address.

**Dr B G Unni, Scientist attended the following meetings -**

- (i) 95th Session of Indian Science Congress held at Andhra University, Visakhapatnam on 5 January, 2008 as a special invitee and delivered a lecture on 'Biodiversity and Genetic variability of non-mulberry silkworm by Molecular Marker studies.
- (ii) Society of Neurochemistry held at National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore on 3 January, 2008.
- (iii) Fulbright Alumni Association North East Chapter on invitation held at the Conference Hall of Centre for Manipur Studies, Manipur University campus during 18-19 February, 2008 and delivered a talk on 'Genesis of the Fulbright Alumni Association North East Chapter, present structure, issues and dilemmas'.

Dr D Prajapati, Scientist F participated in the 44th Annual Convention of Chemists organized by Indian Chemical Society and held at Mahatma Gandhi Institute of Applied Sciences, Jaipur during 23-27 December, 2007 and presented a paper titled 'Regiospecific three component one-pot synthesis of structurally diverse dihydropyrido[2,3-d]pyrimidin-4-ones using microwave under solvent free conditions' authored by K J Borah and D Prajapati.

Dr H B Singh, Scientist, Sub-station, Imphal, Manipur attended the Educational Video Programme on Indigenous Medicinal Plants organised by the EMMRC, Manipur University as a resource person which is going to be telecast on Doordarshan and Vyas, the 24-Hr Higher Educational Channel.

## HONOURS & RECOGNITION

Dr P G Rao, Director, NEIST-Jorhat has been made the Member of the Programme Advisory Committee(PAC) as constituted by the Ministry of Earth Sciences for a period of two years from the date of its first sitting.

Dr J C Katakay, Scientist attended the following -

(i) Training programme on 'Water Quality Monitoring & Surveillance' under Rajiv Gandhi National Rural Drinking Water Mission organised by Nazira PHE Subdivision, Govt. of Assam, Office of the Asstt Executive Engineer at Lions Club, Nazira on 2 January as a Resource Person and delivered a talk on 'Water as a matter of survival - a resource becomes scarce'.

(ii) State function of the National Science Day organised by Assam Science Technology & Environment Council, Guwahati on 28 February 2008 at the Rabindra Bhawan, Guwahati and delivered the invited key note address on the theme 'Understanding the Planet Earth' in the function in which the Aryabhatta Science Centres at Block Level was inaugurated by Dr Himanta Biswa Sarma, Hon'ble Minister of Science & Technology and Health, Govt. of Assam.

B G Unni, Scientist attended a special meeting on 'Tea Genome Initiative' on invitation which was held at Tea Research Association, Tocklai, Jorhat on 5 February, 2008.

Dr Swapnali Hazarika, Scientist attended the following seminars -

(i) International seminar on 'Frontiers in Polymer Science and Technology (POLY-2007) during 1-3 November, 2007 at Administrative Staff College, Guwahati, Assam and presented a paper titled 'Synthesis of chiral polymer by Mukaiyama aldol polymerization and their characterization' authored by Swapnali Hazarika, Simpi Dutta and P G Rao.

(ii) 8th International Conference on Catalysts in Membrane Reactors during 18-21 December, 2007 at Central Glass & Ceramic Research Institute, Kolkata and presented a paper titled 'Quantitative structure activity relationship study of pervaporation aided lipase catalyzed esterification reaction' authored by Swapnali Hazarika, NN Dutta and P G Rao.

Dr H B Singh, Scientist-in-Charge, NEIST Substation, Imphal attended the following meeting

(i) IAC at Kolkata in connection with the 'Training-cum-production centre for non-leather footwear held at NEIST Substation, Imphal during 21-23 February, 2008.

(ii) As an expert on invitation for recruitment of Research Scientist, Senior Research Fellow and Technical Assistants of KVK (ICAR), Sylvan, Senapati, Manipur on 20 February, 2008.

Dr T Goswami, Scientist attended a special workshop on 'Sisal Fibre Technology for Sustainable Rural Employment Generation' held at AMPRI Bhopal during 22-28 February, 2008 and presented a paper on different fibres and products other than Sisal. An exhibition was also held in connection with the workshop where Dr Goswami exhibited the different fibres and fibre based products developed by NEIST utilizing the natural resources of NE region of India.

Dr S P Saikia, Scientist was invited to act as an External Examiner at the College of Horticulture & Forestry, Central Agricultural University, Pasighat, Arunachal Pradesh on 3 January, 2008.

Dr S P Saikia and Shri J J Bora, Scientists attended the training programme on 'Capacity Building' organised by the Department of Science & Technology, Govt. of Sikkim during 29 January to 2 February at Gangtok, Sikkim, 2008 as resource persons.

## Papers published

### International

- (1) KALITA D : Hydrocarbon plant-New source of energy for future, *Renewable and Sustainable Energy Reviews*, 2008, 12 (2), p-455-471.
- (2) CHUTIA M, MAHANTA J J, BHATTACHERYYA N, BHUYAN M, BORUAH P, SARMA T C : Microbial herbicides for weed management: Prospects, progress and constraints, *Plant Pathology Journal*, 2007, 6 (3), p-210-18.
- (3) PRAJAPATI D, GOHAIN M : Iodine a simple, effective and inexpensive catalyst for the synthesis of substituted coumarins, *Catalysis Letter*, 2007, 119 (1-2), p-59-63.
- (4) MAHANTA J J, CHUTIA M, BORDOLOI M, PATHAK M G, ADHIKARY R K, SARMA T C: *Cymbopogon citratus* L. essential oil as a potential antifungal agent against key weed moulds of *Pleurotus* spp. spawns, *Flavour and Fragrance Journal*, 2007, 22 (6), p-525-30.
- (5) BARUAH B P, KHARE P : Pyrolysis of high sulfur Indian coals, *Energy and Fuels*, 2007, 21 (6), p-3346-3352.
- (6) GOGOI S, HAZARIKA S, RAO P G, DUTTA N N : Esterification of lauric acid with lauryl alcohol using cross-linked enzyme crystals: Solvent effect and kinetic study, *Biocatalysis and Biotransformation*, 2006, 24(5), p-343-51.
- (7) UNNI B G, SINGH H R, DEVI B R, WANN S B : Molecular study of brain regulated juvenile hormone biosynthesis in Lepidopteran insect, *Annals of Neuroscience*, 2007, 14, p-62-63.

### National

- (1) SAIKIA S P, JAIN V, KHETRAPAL S, ARAVIND S : Dinitrogen fixation activity of *Azospirillum brasilense* in maize (*Zea mays*), *Current Science*, 2007, 93 (9), p-1296-1300.
- (2) GOSWAMI A, DAS SHARMA S, GOGOI P, KONWAR D : SDS/CH<sub>2</sub>(CN)EWG/H<sub>2</sub>O: An efficient and green system for the cleavage of nitrones and imines in water, *Indian J Chemistry. B*, 2007, 46(10), p-1672-1678.
- (3) SIVAKUMAR V, VERMA V R, SWAMINATHAN G, RAO P G : Use of ultrasound in chrome recovery process in leather industry, *J Scientific Industrial Research*, 2007, 66(7), p-545-549.

### Proceedings

- (1) UNNI B G, SINGH H R, WANN S B, DEVI B R : Biodiversity and genetic variability of non-mulberry silkworms by molecular marker studies, In-Proc.95th Session Indian Science Congress, Andhra University, 3-7 January, 2008, p-27-28.
- (2) WANN S B, UNNI B G, SINGH H R: Studies of medicinal properties and biochemical characterization of indigenous anti-diabetic plants of North East India, In-Proc.National Seminar on Plant in diabetics : Prospects Challenges, 5-6 November, held at NEIST in collaboration with ANRAP, Dhaka, 2008, p-55.
- (3) UNNI B G, SINGH H R, DEVI B R, WANN S B : Biochemical and functional properties of insect and plant based biocontrol agents against muga silkworm disease, In-Proc.Workshop current technology of muga host plants and silkworm, December 14, Central Muga Eri Research Training Institute, CSB, Jorhat, 2007, p-64-68.
- (4) UNNI B G, SINGH H R, DEVI B R, SAIKIA P : Antibacterial bioactive molecules from insects and plants against the flacherie disease in muga silkworm *Antheraea assama*, In-Proc.Workshop on disease and pest management in muga culture, Cooch Behar, West Bengal, published by Print Tech, Jorhat, 2008, p-15-23.
- (5) KALITA D, BORTHAKUR S, DUTTA N N, RAO P G : Adsorption of a Dye molecule on Resin, In-Abstract Vol. Chemcon 2007: 60th Ann Session of Indian Inst. Chem Engrs, Kolkata, 27-30 December , 2007, (F1511), p-1-12.

(6)BORA M M, RAO P G, DUTTA N N: Extraction of dye from Roselle (Hibiscus Sabdariffa) fruits by Adsorption, In-Abstract Vol. Chemcon 2007: 60th Ann Session of Indian Inst. Chem Engrs, Kolkata, 27-30 December, 2007, (F3004), p-1-13.

### **Ph D Awarded**

Miss Swarnalee Dutta, Ex-Project Assistant was awarded the Ph D degree in Life Sciences (Microbiology) by the Dibrugarh University for her thesis titled `Interaction of Plant Growth Promoting Rhizobacteria and Rhizobia Affecting Crop Production and Induction of systemic Resistance against Fusarial Wilt in Pigeon Pea. She did her doctoral work under the supervision of Dr Dileep Kumar B S, Scientist, Biotechnology Division of NEIST-Jorhat.

### **Training attended**

Mr S B Wann, Scientist attended the training programme on 'Inferring biological relationships : a bioinformatics approach' at Bioinformatics Centre, North Eastern Hill University, Shillong (sponsored by Department of Science & Technology, New Delhi) during 27 November to 1 December, 2007.

Dr Chandan Tamuly, Scientist, NEIST Branch, Itanagar attended the Induction Training Programme for Scientists held during 17-22 December, 2007 at Ghaziabad organised by HRDC, Ghaziabad.

### **Welcome**

Shri K C Teron, Group D (Non technical) joined NEIST-Jorhat under the Casual Workers Absorption Scheme w.e.f 17.08.2007.

### **Distinguished visitor**

Mr Phalguni Rajkumar, Secretary, North Eastern Council, Shillong, Meghalaya visited NEIST on 12.01.2008.

### **Farewell**

The following member of the staff of NEIST-Jorhat retired from Council's service on attaining the age of superannuation with the effective date shown against him:

- (1) Sri D K Dutta, Sc. F Gr IV(6) w.e.f 29.02.2008.
- (2)Dr P C Tamuly, Sc. F Gr IV(6) w.e.f 29.02.2008.
- (3) Sri Pabitra Baruah, TO. Gr III(6) w.e.f 29.02.2008.
- (4)Sri Dwijen Borthakur, TO Gr III(5) w.e.f 29.02.2008.
- (5) Sri K Doloi, Gr II(4) w.e.f 31.01.2008.

## **NEIST's participation in Exhibitions**

(1) NEIST participated in CIM Utsav held at CIMAP, Lucknow on 31 January, 2008 in which the rural technologies of NEIST were exhibited in the exhibition organized on the occasion. Dr Mantu Bhuyan, Scientist represented the laboratory. The Utsav is regularly organized every year to encourage the farmers of UP. About 1500 farmers of UP visited the NEIST exhibition stall.

(2) Exhibition organised in connection with the Assam International Trade Fair held at Guwahati during 5-17 February, 2008 organised by N E Trade Promotion and Development Council, Guwahati. The exhibition was inaugurated by His Excellency the Governor of Assam Shri Ajay Singh. A large number of students, entrepreneurs and businessmen visited the NEIST Exhibition Stall and evinced interest in NEIST technologies and expertise/capabilities.

(3) Participated in 'The Enterprise North East' held at Guwahati Refinery ground during 21-24, 2008 organised by the Confederation of Indian Industries (CII). The exhibition was inaugurated by the Hon'ble Chief Minister of Assam Shri Tarun Gogoi.

(4) Participated in the exhibition organised in connection with the workshop 'Sisal Fibre Technology for Sustainable Rural Employment generation' held at AMPRI Bhopal during 22-23 February, 2008. Dr T Goswami, Scientist represented NEIST in the exhibition and exhibited the different fibre and fibre based products developed by NEIST utilizing the natural resources of NE region. Dr Goswami also presented a paper on different fibre and products other than Sisal in the workshop.

## **Visit of students**

A group of students comprising of 72 boys and girls and 5 accompanying teachers of Borholla College, Borholla, Jorhat visited the laboratory on 22 January, 2008.

## **Condolence**

Director and the members of the staff of NEIST-Jorhat in a condolence meeting held on 9 January, 2008 in front of the Administrative Block deeply condoled the sudden and sad demise of Shri R C Srivastava, Scientist and conveyed heartfelt sympathies to the members of the bereaved family.