

BIO-DATA



1. Name of the Laboratory applied/nominated for	: CSIR- North-East Institute of Science and Technology (CSIR-NEIST), Jorhat – 785006, Assam
2. Name	: Dr. Sanjay Deori
3. Date of Birth	: 1 st March, 1972
4. Current Position and Address	: Chief Scientist and Group Leader Applied Civil Engineering Group Engineering Sciences and Technology Division CSIR- North-East Institute of Science and Technology (CSIR-NEIST), Jorhat – 785006, Assam (India) E-mail : sanjaydeori.neist@csir.res.in sanjaydeoricrri@gmail.com Tel No. 0376-2370012(O), Ext.-2440 Mobile No. 9435492149 / 9101207564

5. Educational Qualification:

Sl. No.	Degree / Certificate	Year of Passing	Institute / University	Subjects
1.	Bachelor of Engineering (B.E.)	1993	Jorhat Engineering College (Dibrugarh University), Assam	Civil Engineering
2.	Master of Technology (M.Tech.)	2006	Indian Institute of Technology (IIT) Kharagpur, West Bengal	Transportation Engineering (Civil Engineering)
3.	Doctor of Philosophy (PhD)	2018	Indian Institute of Technology (IIT) Guwahati, Assam	Civil Engineering

6. Academic / Research Experience / Employment :

Sl. No	From	To	Name of Organization	Position held
1.	1999	2003	CSIR- Central Road Research Institute (CRRI), New Delhi	Scientist 'B'
2.	2003	2008	CSIR- Central Road Research Institute (CRRI), New Delhi	Scientist 'C'
3.	2008	2011	CSIR- Central Road Research Institute (CRRI), New Delhi	Scientist 'E-1'
4.	2011	2013	CSIR-North-East Institute of Science and Technology (NEIST), Jorhat , Assam	Senior Scientist
5.	2013	2018	CSIR-North-East Institute of Science and Technology (NEIST), Jorhat , Assam	Principal Scientist
6.	2018	2025	CSIR-North-East Institute of Science and Technology (NEIST), Jorhat , Assam	Senior Principal Scientist
7.	2025	Till date	CSIR-North-East Institute of Science and Technology (NEIST), Jorhat , Assam	Chief Scientist

7. **Areas of Specialization :** (a) Transportation Engineering (Civil Engineering)
(b) Pavement Engineering and Materials

8. **Honors / Awards / Recognitions received:**

- Certification of Appreciation has been awarded as an inventor for the technology developed “*Modular Brick from Brahmaputra River Bed Material*” for the year 2017-18 on 57th CSIR-NEIST Foundation Day (18th March 2018).
- Received the “Certificate of Appreciation” awarded for exemplary contribution in technology transfer for the technology ‘Modular Brick from Brahmaputra River Bed Sand’ for the year 2018-2019 on the occasion of 59th CSIR-NEIST Foundation Day (17 March 2019).

9. **Professional Affiliations:**

- Indian Roads Congress – Life Member

10. **List of Research Publications including popular articles, if any;**

- (1) **Sanjay Deori** , Rajan Choudhary, Devesh Tiwari and Abhinay Kumar, “*HDM-4 Deterioration Modelling: Validation and Adoption for Flexible Pavements with Modified Bituminous Road Surfacing*”, published in The Baltic Journal of Road and Bridge Engineering, Latvia (EU), Vol 14, No.2 (2019), (February, 2019), DOI: 10.7250/bjrbe.2019-14.440.
- (2) **Deori, Sanjay**, Choudhary, Rajan, Tiwari, Devesh and Gangopadhyay, S “*Calibration of HDM-4 models for Indian conditions of flexible pavement having modified bitumen in wearing course.*” published in International Journal of Pavement Engineering (IJPE) in July 2016. Publisher: Taylor & Francis; Peer Review International Journal, ISSN No.1029-8436 (Print), 1477-268X (Online).
- (3) **Deori Sanjay**, Jain P.K., Jain Sunil and Tiwari Devesh, “*Full Scale Performance Study on Crumb Rubber Modified Bitumen and Conventional Bitumen in Bituminous Concrete*”, published in Indian Highways, Indian Roads Congress (IRC) Journal, New Delhi (May,2010).
- (4) Jain, P.K., **Deori, Sanjay**, Jain, Sunil, Rampal and Sikdar, P.K., “*Performance Study and Usage Guidelines for Maintenance of Urban Roads Using Microsurfacing Technology.*” published in Highway Research Bulletin, No.73, October, 2005, Highway Research Board, Indian Roads Congress.
- (5) Jain, P.K., **Deori, Sanjay** , Singh, A.P., Das, Shankh, “*Studies on Behaviour of Different Bituminous Binders in Tack Coat Applications*” , published in Indian Highways, Volume 36 No.3, March, 2008, Indian Roads Congress, New Delhi.
- (6) **Deori, Sanjay**, Choudhary, Rajan, Tiwari, Devesh and Gangopadhyay, S “*Field Performance Study on Modified Bituminous Road sections of National Highway Corridors*” published in the proceedings of 3rd Conference of Transportation Research Group of India (CTRG) held during 17-20 December, 2015 at Kolkata, West Bengal, India.
- (7) **Deori, Sanjay**, Choudhary, Rajan, Tiwari, Devesh and Gangopadhyay, S., “*Evaluation of Flexible Pavement Performance using Laser based Multifunction Automated Road Survey System*” published in the proceedings of 14th Annual International conference on Asphalt, Pavement Engineering and Infrastructure organized by Liverpool centre for Materials Technology (LCMT), Liverpool John Moores University (LJMU), during 11th - 12th February 2015 at Liverpool, U.K.
- (8) **Deori, Sanjay**, Choudhary, Rajan, Tiwari, Devesh and Gangopadhyay, S., “*HDM-4 Pavement Deterioration Modelling for Ahmedabad-Vadodara Expressway*” published in the proceedings of International Conference (ICSCI 2014) on “Sustainable Civil

infrastructure” organized by IIT Hyderabad and ASCE (American Society of Civil Engineers) India Section, Oct 17 – 18, 2014, Hitex, Hyderabad, Telangana, India (Paper No. 265).

- (9) **Deori, Sanjay**, Choudhary, Rajan, Tiwari, Devesh and Sitaramanjaneyulu, K., “*Deterioration Modeling of Flexible Pavements with Modified Bitumen*”, published in the proceedings of Third International Conference on Construction in Developing Countries (**ICCIDC–III**) “Advancing and Integrating Construction Education, Research & Practice” July 4-6, 2012 Bangkok, Thailand.
- (10) **Deori, Sanjay**, Choudhary, Rajan, Tiwari, Devesh and Sharma, B.M. “*A Critical Review of Flexible Pavement Performance Prediction Models*” published in proceedings of International Conference on Advances in Materials and Techniques for Infrastructure Development (AMTID 2011) NIT Calicut, India, 22-24 June 2011(Paper No. T016).
- (11) **Deori, Sanjay**, Dipak Basumatari, Pranab Barkakati and Dr. P.G. Rao, “*Indian Experiences on the use of Modified Binders in Flexible Pavements Construction*” , published in the proceedings of Seminar on ‘Model Concepts for Improved Habitat in North-East’ 24th Sept. 2011, Shillong.
- (12) Dipak Basumatari, **Deori, Sanjay**, Pranab Barkakati and Dr. P.G. Rao, “*Green Building*” published in the proceedings of Seminar on ‘Model Concepts for Improved Habitat in North-East’ 24th Sept. 2011, Shillong.
- (13) **Deori, Sanjay**, Sharma, B.M, Rao, Y.V., Gangopadhyay, S., “*Indian Experiences on Microsurfacing : An Innovative Technology for Reduction of Greenhouse Gas Emissions*”, published in the proceedings of International Seminar on “Reducing Carbon Footprint in Road Construction” held at India Habitat Centre , New Delhi during 17th - 19th Feb 2011.
- (14) **Deori, Sanjay**, Rao, Y.V., Sharma, B.M. , Pokhriyal, S.P., “*Microsurfacing – An Effective Treatment for maintenance of City Roads in Delhi*”, published in the proceedings of 5th World Congress on Emulsion , 12-14 October 2010 , Lyon , France.
- (15) **Deori, Sanjay**, Jain, P.K., and Sharma,B.M., “*Use of Natural Rubber Modified Bitumen Emulsions in Road Maintenance -- A Step Forward in the Direction of Eco-Effectiveness*”, published in the proceedings of 1st International Bitumen Conference, Tehran, Iran, October 18-19, 2008.
- (16) Jain, P.K., Nagabhushana, M.N., **Deori, Sanjay** and Kamaraj, C., “Performance of Natural Rubber Modified Bitumen in India – A Pilot Study” published in proceedings of 4th Congress Euroasphalt & Eurobitume 2008 , Copenhagen, Denmark.
- (17) **Deori, Sanjay** and Reddy, K.S., “*Laboratory Evaluation of Stone Matrix Asphalt Mixes.*” published in the proceedings of National Conference on “Civil Engineering System, 2006”, June 1-3, 2006, Organized by Department of Civil Engineering, University College of Engineering, Osmania University, Hyderabad, India.
- (18) Jain, P.K., Kamraj, C., **Deori, Sanjay** and Sikdar, P.K., “*Evaluation of High Performance Rubber Modified Bituminous Mixes for Structural layers of Flexible Pavements.*” Published in 8th International Conference on “Applications of Advanced Technologies in Transportation (AATT)” Beijing, China, May 26-28, 2004.
- (19) **Deori, Sanjay**, Das, Shankh, Jain, P.K., and Sikdar, P.K., “*Engineering Properties of Cellulose Fiber Modified Bituminous Mixes.*” Published in Proceedings of the “POLY BUILT 2003” Symposium on Advances in Polymeric Building Materials , organized by Central Building Research Institute , Roorkee, India, 6-7 March 2003.
- (20) Received **Best Poster Award** for the paper entitled “*Modular Bricks from Brahmaputra River Bed Sand*” presented in the International Conference on “ESTEC-2020” held during February 20-22, 2020 at CSIR-NEIST, Jorhat, Assam, India.

11. Contribution to Books / Book Chapter

- Book Chapter entitled “*Design and Construction of Low Cost and Eco-Friendly Emergency Shelter Using Locally Available Bamboo Based Materials*”.
Published in the year: 2022
Title of the Book: Environment and Sustainable Development in North-East India
Country: India; Publisher : AkiNik Publications , New Delhi , India.

12. List of Research and Development (R&D) Projects carried out with Financial Support from Various Agencies:

- (1) **CSIR-Focussed Basic Research (FBR) Project** “Development of Microbial based process for Bio-cement, Bio-brick and self-healing concrete using locally available resources.” Sponsored by CSIR. Total Project Cost: Rs. 48 Lakhs, Responsibility: PI (2020-2022).
- (2) **R&D Project** : A research project on “Sustainable Construction materials using Agro-Industrial by-product “ sponsored by Ministry of Housing and Urban Affairs (MoHUA), Govt. of India under the Global Housing Technology Challenge (GHTC)-ASHA India project. CSIR-NEIST in collaboration with CSIR-CBRI, Roorkee and VNIT, Nagpur. Total Project Cost: Rs. 9.52 Crore, Responsibility: PI (Ongoing).
- (3) **FTT Project**: “*Modular Brick from Brahmaputra River bed sand*”. Sponsored by CSIR. Total Project Cost: Rs. 2.47 Crore, Responsibility: PI (2016-2018).
- (4) **DST Project**: “*Development of Methodology for Manufacturing Modular Bricks from River Brahmaputra Bed Material*”. Sponsored by Department of Science & Technology (DST), New Delhi, Govt of India. Total Project Cost: Rs. 26.00 Lakhs, Responsibility: PI (2016).
- (5) **DST Project**: “*Performance Evaluation of River Brahmaputra Bed Materials for Use in Construction of Road Embankment, Subgrade and Subbase*”. Sponsored by Department of Science & Technology (DST), New Delhi, Govt of India. Total Project Cost :Rs. 23.75 Lakhs Responsibility: PI (2015).
- (6) **CSIR-Supra-Institutional Project**: “*Development of Management System for Maintenance, Planning and Budgeting of High Speed Road Corridors*”. 11th Five Year Plan Project under CSIR. Total Project Cost : 16.00 Crore, Responsibility: Team member (2012).
- (7) **R&D Project**: “*Development of GIS Based National Highway Management System*”. Sponsored by Ministry of Shipping, and Road Transport and Highways (MOSRTH). Total Project Cost: Rs. 10.00 Crore, Responsibility: Team member (2011).
- (8) **R&D Project**: “*Pavement Performance Study-Study on New Pavement Sections (Phase-I)*”. Sponsored by Ministry of Road Transport and Highways (MoRT&H) ,Govt. of India (Completed) Responsibility: Team member (2003).
- (9) **R&D Project**: “*Performance Evaluation of Crumb Rubber Modified Bitumen in Bituminous Concrete on Delhi-Jaipur Section of NH-8*”. Sponsored by National Highways Authority of India (NHAI), Gurgaon. Responsibility: Team member (2003).
- (10) **R&D Project**: “*Construction Supervision of Quality Control During Execution of Microseal at Prithviraj Road and Windser Place Round About in Delhi*”. Sponsored by New Delhi Municipal Council (NDMC), New Delhi (2001).
- (11) **R&D Project**: “*Performance Study of Natural Rubber Modified Bitumen in Road Surfacing*”. Sponsored by Rubber Board , Ministry of Commerce , Govt. of India (2006).

13. List of Industry Sponsored Projects from Various Agencies:

- (1) “Structural Evaluation of Construction Quality of 400/200 Mariani Substation, Assam” Sponsored by M/s Power Grid Corporation India Ltd., Mariani Substation, Jorhat, Assam. Total Project Cost: Rs. 20.00 Lakhs, Responsibility: Co-PI (2022).
- (2) “Soil Investigation for recycling Treatment Plant at NRL”. Sponsored by Numaligarh Refinery Limited, Golaghat, Assam”. Total Project Cost: Rs. 20.00 Lakhs, Responsibility: PI (2015).
- (3) “Performance Evaluation Report on Rural Roads Constructed Using Bitchem Cold Mix in Different District of Assam”. Sponsored by M/s Bitchem asphalt Technologies Limited , Guwahati, Assam, Responsibility: PI (2013).
- (4) “Soil Investigation for LPG Mounded Bullets and Bio-Refinery Plant Area at NRL”. Sponsored by Numaligarh Refinery Limited, Golaghat, Assam. Total Project Cost: Rs. 45.00 Lakhs, Responsibility: PI (2017).
- (5) “Quality Surveillance of DBM and BC works on Noida-Greater Noida Expressway (Chainage 0.00 to 20.00 Km.)”. Sponsored by New Okhla Industrial Development Authority(NOIDA), Noida(UP) (2001).
- (6) “Strengthening of main carriageway of S.A. Road from RD km.0.000 to RD km. 4.200 using plastic waste”. Sponsored by Public Works Department, Govt of Delhi, (2009).
- (7) “Evaluation of materials and quality control for restoration / reinstallment of road works for airport metro express line point of DMRC between New Delhi Station to Talkatora Garden”. Sponsored by Delhi Metro Rail Corporation (2009).
- (8) “Improvement and strengthening of roads in GK-II , GK-II Enclave, Masjid Moth and road from Don Bosco to Mathura Road in Sukhdev Vihar”. Sponsored by Municipal Corporation of Delhi (2009).
- (9) “Performance Audit of NHAI Road Projects Under Public Private Partnership”. Sponsored by Controller of Auditor General (CAG) of India, August (2007).
- (10) “Construction Quality Checking of Road works in NDMC area during 2005-06 using Hot Mix Technology”. Sponsored by New Delhi Municipal Council (NDMC), (2006).
- (11) “Demonstration of Microsurfacing Using Imported Machine available with Assam PWD and Natural Rubber Latex Modified Emulsion”. Sponsored by Public Works Department, Govt. of Assam (2006).
- (12) “Economic Benefits of Toll Roads in India (Asset Management Study)”. Sponsored by Infrastructure Transportation Network Limited (ITNL), Mumbai (2006).
- (13) “Evaluation of Technocel, Topcel and Genicel as Additives for use in Stone Matrix Asphalt(SMA)”. Sponsored by M/s Organo Chemical Industries, Mumbai (2004).
- (14) “Evaluation of Delhi Roads for Maintenance and Rehabilitation Strategies”. Sponsored by Public Works Department, Govt. of Delhi, March 2003.
- (15) “Evaluation of 30m R/W Roads in Dwarka Phase-II For Needed Maintenance”. Sponsored by Delhi Development Authority (DDA) (2003).
- (16) :”Evaluation of Crumb Rubber Modified Bitumen vis-à-vis 60/70 grade bitumen for use in Bituminous Courses”. Sponsored by M/s A.R. Thermosets Private Limited Kanpur (UP) (2003).
- (17) “Methodology for emergency repair of caters in Airfield Pavement”. Sponsored by Indian Air Force (2002).
- (18) “Evaluation of CRMB vis-à-vis 80/100 Plain Bitumen for Patch work”. Sponsored by M/s Tinna Overseas Ltd., New Delhi (2002).

- (19) “*Evaluation of Crumb Rubber Modified Bitumen vis-à-vis 80/100 Bitumen for Structural Layers of Flexible Pavements*”. Sponsored by M/s Tinna Overseas Ltd., New Delhi, (2002).
- (20) “*Evaluation of Jawaharlal Nehru Marg for Implementation of Microsurfacing*”. Sponsored by Municipal Corporation of Delhi (2002).
- (21) “*Investigation of causes of Pavement Distress on NH-8 (Delhi –Bound Carriageway) and needed Remedial Measures*”. Sponsored by National Highways Authority of India (NHAI), Gurgaon (2001).
- (22) “*Evaluation of Materials for Resurfacing of August Kranti Marg in Delhi*”. Sponsored by New Delhi Municipal Council (NDMC), New Delhi (2001).
- (23) “*Axle load study on Jaipur – Kishangarh Section of NH-8 (Km. 289.500)*”. Sponsored by M/s Dynamic Services, Chennai (2000).

14. Highlights of contributions to the area of specialization.

- Since joining in CSIR-CRRI, New Delhi as a Scientist, the undersigned has been working in the R & D areas of Cold Mix Technology and its implementation in construction of rural roads, urban roads and highways. Microsurfacing is a cold mix and environment friendly pollution free technology which was first implemented under my supervision on Prithviraj Road in New Delhi in the jurisdiction of New Delhi Municipal Council (NDMC) and evaluated the field performance for 5 years. Since then Microsurfacing is gaining importance and popularity for its various advantages like using of cold bitumen emulsion instead of hot bitumen binder for construction of roads and roads maintenance, pollution free and environment friendly, free of health hazard during construction of roads and energy efficient technology as well as economy too. Microsurfacing was also applied on test sections of NH-37 at Sonapur and Air Port road near Guwahati in Assam. Field performance of Microsurfacing has been observed for pavement surface conditions and roughness. Based on our studies, Indian Roads Congress has published a new user guidelines and specification IRC:SP:81-2008 “*Tentative Specifications for Slurry Seal and Microsurfacing*”. Till today, Microsurfacing cold mix technology has been adopted and implemented by many Government agencies for maintenance of city roads and national highways all over the country.
- Since joining in CSIR-NEIST, Jorhat as Senior Scientist, the undersigned has prepared a project report “*Performance Evaluation Report on Rural Roads Constructed using Bitchem Cold Mix in Different District of Assam*” sponsored by Guwahati based industry M/s BitChem Asphalt Technologies Limited, Assam (Private Industry). Total 34 rural roads from different district of Assam has been observed the field performance of 5 years old premix carpeting surface laid with Bitchem Cold Mix which was developed by CSIR-CRRI, New Delhi. The project report covers all types of materials specifications, laboratory testing, processes of mixing and laying of pre mix carpeting on roads. Today, this project report is becoming a guidelines and hand book for field engineers for execution of Pre-mix carpeting using Bitchem cold mix.
- Based on our research work, Bitchem cold mix technology has been adopted and implemented for construction, repair and maintenance of roads in CSIR-NEIST, Jorhat campus. Total 6.5 Kilometers of road length were repaired and laid with cold emulsion based pre-mix carpeting under my supervision which is absolutely pollution free, environment friendly, energy efficient and free of health hazard during construction of roads.
- Modular Bricks technology using Brahmaputra river bed materials has been developed which is a major breakthrough for utilization of Brahmaputra river bed materials for building materials. The development of the modular brick technology using locally available Brahmaputra river bed materials will directly / indirectly help the industry / society / environment and nation as a whole.

- The geo-technical and soil investigation work has been conducting on regular basis for M/s Numaligarh Refinery Limited, Golaghat, Assam. The Numaligarh Refinery main plant, Wax-Plant, Bio-Refinery, Recycling Treatment plant and LPG Mounded Bullets are set-up based on our advice and recommendation on safe bearing capacities of foundation soil obtained from field and laboratory test results of soil investigation at NRL, Golaghat.

15. Technology developed , Licensed and / or commercialized with details:

- ❖ Modular Bricks technology using Brahmaputra river bed materials has been developed indigenously which is a major breakthrough for utilization of Brahmaputra river bed materials for building materials. The development of the modular brick technology using locally available Brahmaputra river bed materials will directly / indirectly help the industry / society / environment and nation as a whole. As a Principal Investigator of the invention, the following responsibility has been taken :

- Product development
- Process development
- Technology development

- ❖ The technology of Modular Bricks from Brahmaputra River bed Sand developed under the FTT project has been transferred for commercial production to the following private party:

Name of the Party: **M/s P.S. Enterprise, Jorhat**
 Amount received: **Rs.3, 36,000.00 (inclusive of 12% GST)**
 Nature of License: **Non-exclusive**
 Period: **7 years**
 Date of agreement: **18th September 2018**



Photo: Modular Brick used construction of Boundary Wall at CSIR-NEIST, Jorhat

The Telegraph

Jorhat scientists find novel use for Brahmaputra silt

Eureka! A winner brick recipe

SMITA BHATTACHARYYA

Jorhat, July 27: Light weight bricks made of fine Brahmaputra silt sand with a shiny-surface finish in any given shape, size and colour are the latest products from the stable of the CSIR-North East Institute of Science and Technology (NEIST) here. Add to this the experiments of reducing the use of much-needed agricultural soil, reduction of carbon emission and curtailing the possibility of loss flooding by the river during monsoon, NEIST has a winner scheme on its hands.

The director of NEIST Dr. Kamalath said the technology which used Brahmaputra silt for the first time did not burn the sand but used a compressive technique. "The benefits it has to the region — apart from being environment friendly — are energy saving factors in the long run. Using silt as building material will decrease flooding and spreading of the silt into the forest areas more depth," Kamalath said.

Sanku Dora, scientist, applied civil engineering division, NEIST, who was instrumental in developing the bricks, said that the Brahmaputra silt-based sand is the main constituent for manufacturing the modular bricks. Ordinary Portland cement is the binding material.

"No coal or wood is required to burn the bricks in a kiln to make them hard, eco-friendly and novel process has been developed to make them," he said.

Dora added that on testing, these bricks exhibited high compressive strength, were lighter than other bricks of the same size, absorbed less water and were more heat resistant.

"The USP of the bricks we have developed is that they are qualitatively better, can be given multiple shapes and sizes, a high finish decision, aesthetically more appealing compared to other bricks, cost efficient and the technology can be taken up for small, medium and large industries for both rural and city areas," he said.

According to Dora, the best thing about the bricks is that in their making one does not let out a huge quantity of black smoke spilling into the sky. "Our already nutrient-depleted agricultural soil remains intact and there is huge amount of economic gain for an entrepreneur," Dora said.

"For Assam especially, washing of silt from the Brahmaputra silt bed will be a boon as it has been reported that due to heavy siltation the river bed has increased and the depth has decreased, resulting in heavy flooding every year. This is dangerous for drinking of the silt-bed. From a plover's watch, if they set up brick industries which use up this silt, will not only help themselves, but the riverine people as well," Kamalath said.

Field trials are going on by building walls on NEIST campus to test durability and weathering. Given that these can be coloured and are already smooth, these bricks can be creatively used by architects for designs as these need not be plastered.

A wall being built out of lightweight bricks inside the NEIST campus. (Telegraph picture)

16. Major events organized as leader / coordinator :

- (1) Organized “International Conference on Engineering Sciences & Technologies for Environment Care (ESTEC-2020) during 20-22 Feb, 2020 at CSIR-NEIST, Jorhat.
- (2) Organized and coordinated the various programmes on the occasion of Diamond Jubilee Celebration of CSIR-NEIST, Jorhat during 18th March, 2021 to 17th March, 2022 as an Organizing Secretary of the Diamond Jubilee Celebration Committee.
- (3) CSIR- Summer Research Training Programme (SRTP-2020)(Online) was organised and coordinated for Civil Engineering students and faculties from different institutes and universities all over India. Total 32 lectures, presentations and practical demonstrations were organised and coordinated which were delivered by the CSIR scientists, technical officers and faculties from IITs, NITs from different parts of the country. The students from various institutes and universities have attended the SRTP-2020 programme.
- (4) Organized a one day national workshop on “*Sustainable Technologies for Road Construction in North East*” jointly with CSIR-CRRI, New Delhi and Public Works Department (PWD), Assam on 19th September 2011 at CSIR-NEIST, Jorhat.
- (5) Organized a two day national workshop on “*Sustainable Technologies for Road Construction in Tripura, North East*” jointly with CSIR-CRRI, New Delhi and Public Works Department (PWD), Trpura during 4th-5th, February, 2012 at Agratala, Tripura.
- (6) Organized a two day workshop on “*Development of Civil Infrastructure Technologies for North Eastern Region*” sponsored by Department of Science and Technology (DST), New Delhi at CSIR-NEIST, Jorhat during 28th – 29th February 2012.
- (7) Organized three day national conference “*Conference on Road and Transportation Technologies for North-East Region (CORTNE2013)*” jointly with CSIR-CRRI, New Delhi; Public Works Department, Assam; and M/s Bitchem Asphalt Technologist Limited, Guwahati during February 22-24, 2013 at Maniram Dewan Trade Centre, Guwahati, Assam.
- (8) Organized a two day workshop on “*Technologies for North East Region and Implementation Framework (TIF)*” jointly with CSIR-CRRI, New Delhi and Public Works Department, Sikkim and M/s Bitchem Asphalt Technologies Limited, Guwahati during July 08-09, 2013 at Chintan Bhawan, Gangtok, Sikkim.
- (9) Organized a one day national workshop on “*Recent Developments in Civil and Earthquake Engineering (RDCEE-18)*” on 9th April 2018 at CSIR-NEIST, Jorhat.

17. Talk / Lecture delivered in various forum :

1. Delivered a keynote speech on “*Construction and Maintenance of Roads using Cold Mix in High Rainfall Area - A Case Study.*” 1st International Conference on Infrastructure Development (ICID-2018) organized by Jorhat Engineering College (JEC), Jorhat during 21-22 Dec. 2018.
2. Delivered a keynote speech on “*Alternative Technologies for Flexible Pavement Road Construction*” in the International Workshop “Advances in Sustainable Civil Infrastructure Development (IWASCID-2019) organized by Kaziranga University, Jorhat during January 22-23, 2019.
3. Delivered a technical talk on the topic “*Deterioration Modelling of Flexible Pavement using HDM-4 Software*” in the International Webinar on Featured Advances in Science and Technology (FAST-2020) organised by Elite College of Engineering during August 17-21, 2020.
4. Delivered a talk on the topic “*Alternative technologies for road construction*” as a resource person for a One Day Technical Talk on “Alternative Building Materials and

Technology” organized by Department of Civil Engineering, Jorhat Engineering College, Jorhat on 9th June 2018 under TEQIP-III.

18. Dissertations supervised :

- (1) Guided Ms. Katari Durga Bhavani Department of Civil Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Andhra Pradesh for her Final year M.Tech. Thesis titled **“Limiting Shear Strength Expression for RC Corbels”** submitted in November 2018.
- (2) Guided Ms. Seelam Monika Sri, Department of Civil Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Andhra Pradesh for her Final year M.Tech. Thesis titled **“Numerical Analysis of Sandwich 3-d Walls under Blast Loading”** submitted in November 2018.
- (3) Guided Sh. Anku Medhi M.E. in Civil Engg (Specialisation in Design of Civil Engineering Structures), Department of Civil Engineering, Jorhat Engineering College (Dibrugarh University) for his thesis **“Study and Development of Modular Bricks from River Brahmaputra Bed Materials with Strength Characteristics and its Cost Benefit Analysis”** submitted in July 2015.
- (4) Guided Sh. Pronabjyoti Bora, Sh. Debasish Bora, Ms. Rimi Gogoi, Ms. Nilutpola Borah, B.Tech. in Civil Engg , Civil Engineering Department, The Assam Kaziranga University, Jorhat, Assam for their thesis titled **“Study and Development of Modular Bricks Using Bio-Waste”** submitted in September, 2017.
- (5) Sh. Manas J. Hazarika, Sh. Sunny Mahanta, Sh. Pankaj Sahu, Sh. Yasin R. Ansary Sh. L.J. Buragohain , B.Tech. in Civil Engg, Civil Engineering Department, The Assam Kaziranga University, Jorhat, Assam for their thesis titled **“Study and Development of Modular Bricks from Brahmaputra River Bed Sand”** submitted in September, 2018.
- (6) Presently guiding Er. Dipak Basumatari, Principal Scientist, CSIR-NEIST pursuing PhD under AcSIR in his topic titled **“Comprehensive Study of Geotechnical Aspects for Engineered Landfill Design and Construction for Small Community”** (Ongoing).
- (7) Imparted summer and winter training to 95 numbers of undergraduate engineering students from different engineering institute and universities of the country as a supervisor during the reporting period.

19. PhD Thesis Evaluated

- (i) Evaluated the PhD Thesis entitled **“Analysis of a typical Geotechnical Problem using Finite Element Method”** submitted by **Ms. Taku Muni**, Department of Civil Engineering, NERIST , Nirjuli, Itanagar, Arunachal Pradesh (2021).
- (ii) Evaluated the PhD Thesis entitled **“Structural Performance of Spirally Welded Steel Hollow Columns”** submitted by **Ms. K.M. Bharathi**, Department of Civil Engineering, Anna University, Sardar Patel Road, Chennai-600 025, Tamilnadu (2022).

20. Editorship / reviewer in reputed journals

- Reviewed the paper titled **“Optimised Surface Condition Classification of Flexible Road Pavement using Data Mining Approach”** submitted to International Journal of Pavement Engineering (Taylor and Francis Group).
- Reviewed the paper titled **“Experimental Study on Micro Surfacing Using Chrome Shaving Impregnated with Modified Bitumen Emulsion”** submitted to Journal of Scientific & Industrial Research (CSIR) published by CSIR-NISCAIR, New Delhi.

- Reviewed the paper titled “*A Study on Cold Mix Recycled Asphalt Pavement Utilization of Reclaimed Asphalt Pavement in Design of Bitumen Mastic Wearing Course*” submitted to International Journal of Earth Sciences and Engineering (IJEE) published by Cafet Innova Technical Society (CITS), Hyderabad, AP., India.
- Reviewed the paper titled “*Characterization of Thermal, Rheological and Microscopic properties of Crumb Rubber Modified Binders*”, submitted to International Journal of Earth Sciences and Engineering (IJEE) published by Cafet Innova Technical Society (CITS), Hyderabad, AP., India.

21. Participation in the major facility creation in the laboratory / Institute:

- The “Centre for Advanced Civil Engineering Research” has been created at CSIR-NEIST, Jorhat under the CSIR-FTT project (MLP-1004) as a Principal Investigator of the project. A state-of-art automatic modular brick making mini plant has been procured and installed in the Centre. The foundation stone of the centre was laid by Padma Bhushan Dr. T. Ramasami, Former Secretary, DST, New Delhi and Director General, CSIR, and inaugurated by Sh. Naveen Verma, IAS, Secretary, Ministry of DoNER on 18th March 2018. The following dignitaries have visited the centre on 17th April 2018:
 - (1) Sh. M. Venkaiah Naidu, Hon’ble Vice President of India
 - (2) Prof. Jagdish Mukhi, Hon’ble Governor of Assam
 - (3) Sh. Atul Bora, Hon’ble Agricultural Minister, Govt. of Assam
 - (4) Sh. Kamakhya Prasad Tasa, Member of Parliament, Jorhat Constituency

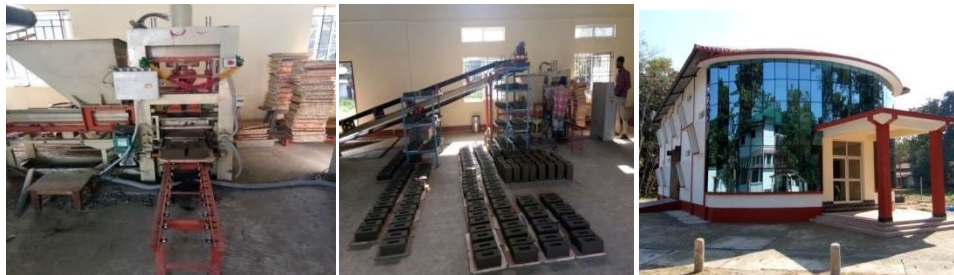


Photo: Modular Brick mini plant set-up at CSIR-NEIST, Jorhat

VISITS of DIGNATORIES



Dr. T. Ramasami, Former Secretary, DST, New Delhi



Mr. Naveen Verma, Former Secretary, DoNER Ministry



Sh. Venkaiah Naidu, Hon'ble Vice-President of India and Prof. Jagdish Mukhi, Governor of Assam visited on 17th April 2018



22. A **Pilot Plant facility of Integrated System for Solid Waste Management** has been established at CSIR-NEIST campus for disposal of solid waste in a scientific way in-line with Solid Waste management Rules (SWM) 2016 prescribed by MoEF&CC, Govt. of India

As a **Principal Investigator**, all responsibility has been taken for Planning, execution, Installation, Operation & maintenance of the facilities. Major contribution for the product and process development from the waste materials like waste plastic, biomass etc.

These facilities will be extensively used in segregation of solid waste generates in the CSIR-NEIST campus daily. The segregated bio-mass (kitchen waste) will be used for production of bio-gas and the other decomposing materials can be used as Vermicompost materials as bio-fertilizer. The other main environment polluting plastic waste will be done cleaning, shredding, drying and after the agglomeration, the plastic materials will be used in various product development.



Inauguration of Integrated Solid Waste Management Plant by Chief Guest of 83rd CSIR Foundation Day in CSIR-NEIST Padma Sri Prof.(Dr.) Vinod Kr. Singh , Chair Professor, IIT Kanpur & Chairperson, RAB, CSIR in presence of Dr. Virendra M. Tiwari, Director , CSIR-NEIST celebrated on 30th September, 2024.



Photo: Glimpses of Integrated Solid Waste Management Plant in CSIR-NEIST

23. International Assignment:

- Visited and attended Technical Training programme on *Accelerated Pavement Testing Facility (APTF) at Built Environment Department in CSIR South Africa at Pretoria*. The Training Programme was imparted by CSIR South Africa and M/S Dynatest Consulting Inc., Florida (USA) jointly. The duration of the Training programme was two months from 31st May, 2009 to 1st August, 2009.

24. Important administrative responsibilities taken and success achieved :

- Taken the charge of Head of the Division (HoD) of Applied Civil Engineering Division w.e.f. 1st January 2013 and successfully completed three year as HoD.
- Taken the charge of Group Leader of the Applied Civil Engineering Group of Engineering Sciences and Technology Division w.e.f. 11th Dec. 2015 to till date and successfully completed seven (10) years as Group Leader.