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# इपिर्टि न्यूज़ IPIRTI NEWS

Delivering Innovative Solutions for Industry, Society and Environment



Vol. 19, No. 3 & 4

Jul - Dec, 2018

प्रिय पाठकों  
Dear Readers,



## IPIRTI-Industry Meet at Field Station, Kolkata

Since its inception IPIRTI is deeply committed to come up as an Apex Body of International excellence by developing cutting-edge, state-of-the art Technology together with providing competitive consultancy to the Academia and Panel Industry. This is always aimed at innovation of effective technologies for engineered Panel products from renewable fibres including plantation timbers and bamboo which while meeting the vital needs of the developing society entails conservation of natural forests and environment as a whole. For this purpose it is imperative to remain ever connected with the stakeholders including the Industry partners and stay abreast of the latest scientific advancements.

IPIRTI-Industry meet provides a golden opportunity for two-way traffic between the parties to express their views and problems which help IPIRTI to prioritize future research strategies for the promotion and development of wood and other panel products. One such meeting for Eastern & North Eastern India was organised at Kolkata on 12<sup>th</sup> October, 2018. Inaugurating the Meet the Director, mentioned about the services provided by the Institute and also IPIRTI's effort to redress the issues faced by the Panel Industry. In today's context consistent efforts are being made to meet the wood demand by

sourcing timber from plantations and trees outside forest especially with species such as Eucalyptus and Poplar which have made great strides in North Indian states and Melia dubia (as plywood species is very popular in South India). So also Rubber wood and Bamboo are front runners in Kerala and North Eastern States respectively. Besides, different topics around which the interactive session dwelt upon are: Development of non-toxic adhesives for production of plywood, Energy efficient and reduced effluent based production process, Enhanced service life for panel materials made out of plantation grown timbers, cost effective and environment friendly technology, Bamboo based housing system, enhancement of service life of panel products by eco-friendly preservatives, minimizing formaldehyde emission level in composite products, fire retardant door and plywood, etc.

Scientists of IPIRTI Field Station Kolkata made brief presentation on Research and Development works carried out on different themes viz: Different types of Bamboo based housing systems by Shri. Amitava Sil, Modified Urea Formaldehyde resin with PMDI for manufacture of plywood by Shri. S. C. Sahoo, Karanj Seed Extractive as eco-friendly wood preservation for wood based panel industry by Mrs. Riya Tudu Solanki, Development of Fire Retardant wood based panel product technology by Dr. Kuna China Varadarajulu.

The detailed technological inputs, the economy of adopting these technologies and also their impact on environment were highlighted to the members. The industry members appreciated the works and opined that these technologies should be demonstrated to them along with hands on training for early commercialization. After the technical deliberations, one industrial presentation was made by Shri. Chandrakant Deo, Proprietor, M/s. Wood Cure Enterprise, West Bengal on “Wood Protector Scapo as wood preservative”.

The session ended with vote of thanks to the Chair and all other participants.

Dr. B. N. Mohanty, *IFS*  
Director, IPIRTI

## RESEARCH & DEVELOPMENT

### BAMBOO THE WONDER GRASS AS A SUSTAINABLE BUILDING MATERIAL

Bamboo as a building material having high compressive strength and low weight which has been one of the most used building material as support for concrete, especially in those locations where it is found in abundance. Due to a distinctive rhizome-dependent system, bamboos are one of the fastest-growing plants in the world and their growth is three times faster than most other species of plants. They are renewable and extremely versatile resource with multi-purpose usage. Among many uses of bamboo, bamboo housing is one of the major areas applications especially in the wake of residential shortages around the globe.

A thorough treatment of bamboo is required to protect it against insects and rot before it is put into use. Commonly a mixture of Borax and Boric acid or CCB with pressure impregnation are utilized for this purpose. Another procedure generally employed is to boil bottom portion of bamboo for column foundation with creosote oil.

There is very limited use of bamboo as foundation material because when in contact with moisture laden surface they decay fast. However, this issue can be sorted out to quite an extent though proper treatment. The various types of foundations constructed with bamboo are:

- a) Bamboo which is in direct contact with ground surface.
- b) Bamboo fixed to pre-formed concrete footings.
- c) Composite bamboo or concrete columns.
- d) Bamboo piles.

Bamboo is one of the best roofing materials as it provides ample sturdiness to the structure. It is a proven shield against forces of nature or animals and are considerably light in weight which makes them easy to install with reduced roof load. The bamboo roofs encompass purlins, rafters and trusses.

The main advantages of Bamboo as a Building Material are:

- a) Higher tensile strength than steel because its fibers run axially.
- b) Capability to resist fire is very high and it can withstand temperature up to 4000 C which is due to the presence of high value of silicate acid and water.
- c) Widely preferred in earthquake prone regions due to its elastic features.
- d) Due to light weight, they are easily displaced or installed making it very easier for



transportation and construction.

- e) Unlike other building materials like cement and asbestos, bamboo poses no danger to health.
- f) They absorb carbon dioxide and releases 35% more oxygen into the atmosphere than an equivalent stand of hardwood trees

Even if we don't build our entire house from bamboo, we can still use it for critical components like fencing, furniture, flooring, windows, ceiling or as a support material for super structure. It is also a great material to use in construction of structures like pagodas, farmhouses, resorts, beach houses and eco-tourism camps.

In order to promote sustainable use of Bamboo in Construction and related activities, the Bureau of Indian Standards (BIS) has a series of standards on bamboo preservation, testing of bamboo products and structural design of buildings using bamboo. It may particularly be noted that the standard on structural use of bamboo has since been revised and updated in NBC 2016 as well as IS 15912: 2018 (Structural Design using Bamboo - Code of Practice) in which Shri. Amitava Sil, Scientist, IPIRTI Field Station Kolkata is member of Building Construction Practices Sectional Committee, CED 13. People now can make use of the code in ensuring sound and safe design and construction using this sustainable material.



*Solar Bamboo Hut constructed at New Delhi by Shri. Amitava Sil, Officer-in-Charge, IPIRTI Field Station, Kolkata and his team members.*

## EXTENSION

### Industry/Organisation visits

**05-06.07.2018:** Shri. S.C. Sahoo, Scientist visited to M/s. Ram Plywood Industries, Lucknow, Uttar Pradesh to improve the quality of adhesive used for shuttering plywood.

**14.07.2018:** Dr. Mamatha B.S. and Dr. Rashmi Shanbagh, Scientists visited to Lalbagh, a botanical garden at Bengaluru to inspect the wooden artefacts of huge dimensions with reference to the filler and preservative treatment.

**25.07.2018:** Shri. Uday D. N, Scientist visited to M/s. Kerala State Bamboo Corporation Ltd. Angamaly, Cochin for short film shooting on “Bamboo Primary Processing in Kerala: A Panacea for Rural Employment” along with crew members for shooting.

**24-25.08.2018:** Shri. S.C. Sahoo, Scientist visited to M/s. Khusoobo Plywood, Ahmedabad to solve the warpage problem of plywood and other floor problem occurred during manufacturing.

**27-28.08.2018:** Shri. S.C. Sahoo, Scientist visited to M/s. Maple Molding Pvt. Ltd., Mumbai to modify the quality of UF resin for the manufacturing of plywood.

**03-05.09.2018:** Dr. Pradeep Kumar Kushwaha, Scientist visited to Central Academy for State Forest Service (CASFoS), Burnihat for inspection of the working performance of bamboo knot removal and width sizing machine and proceeded to IPIRTI Field Station, Kolkata for inspection of the bamboo processing machines.

**05-07.09.2018:** Shri. Kiran M.C and Dr. Narasimha Murthy, Scientists visited to Forest Research Centre for Livelihood Extension, Agartala to have discussion with Shri. Pawan Koushik, Scientist on bamboo and collect species for project “To Study the properties of low density particle board from bamboo for different end use applications”.

**15.09.2018:** Shri. S.C. Sahoo, Scientist visited M/s. Century Ply Board, Kolkata for technical discussion on laminating adhesive.

**18-20.09.2018:** Dr. Pradeep Kumar Kushwaha, Scientist attended Mizoram World Bamboo Day at Aizawl, Mizoram and also had site visit and updation about the establishment of new Common Facility Centre at Mizoram.

**19-20.09.2018:** Shri. S.C. Sahoo, Scientist visited to M/s. Bindra Timber, Haryana to improve the bonding quality of shuttering ply and other floor problem during manufacturing and also visited to M/s. Sunrise Panel, Jagadamba Panels and Vachhi Industries, Haryana for technical discussion and to make them member of IPIRTI.

**01-05.10.2018:** Dr. Pradeep Kumar Kushwaha, Scientist visited Chhatisgarh for installation and inspecting the replaced Hot air oven and maintenance of other old bamboo processing machines of CFC at Bijapur.

### Meetings/Seminars/Workshops/Conferences

**04.07.2018:** Dr. Manoj Kumar Dubey, Joint Director, IPIRTI had meeting with Shri. Rajiv Gupta, Managing Director, Precision Components & Engineers on Wood composite and furniture machineries at IPIRTI, Bengaluru.

**05.07.2018:** Dr. B. N. Mohanty, IFS, Director, IPIRTI participated as a Guest Speaker in SAARC Level Event on “Promoting Integrated Bamboo Based Enterprise Development among SAARC Countries” and delivered a lecture in technical session on “Scope of Bamboo based enterprises in SAARC Countries” at New Delhi organized by Foundation for MSME Cluster in collaboration with SAARC Development Fund (SDF).



He also Chaired the 1st meeting of the Technical Committee-2 under National Bamboo Mission constituted for rejuvenation of Bamboo Industries, Policy Reforms, new Innovations etc. at New Delhi.

**10.07.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI addressed 41 State Forest Service (SFS) Officer trainees from Central Academy for State Forest Service (CASFoS), Coimbatore who visited IPIRTI along with an Officer-in-Charge as a part of their SFS Course Introductory Tour/Field Visit.

**12.07.2018:** Dr. B.N. Mohanty, IFS, Director and Dr. Manoj Kumar Dubey, Joint Director, IPIRTI had meeting with Mr. Khairul Anwar, Director, Malaysian Timber Council at IPIRTI, Bengaluru.

**17.07.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI had a meeting with Shri. Abhimanyu Majumdar, Consultant, MOTT MACDONALD & Bamboo Entrepreneur along with two associates Shri. Sayan Shom & Shri. B. Sriharsha who visited IPIRTI for technical advice on setting up Bamboo Industry.

**18-19.07.2018:** Dr. V.K. Upadhyay, Scientist attended Data Centre IT Summit at Sheraton Grand Hotel, Bengaluru.



**26.07.2018:** Dr. B. N. Mohanty, IFS, Director, Dr. Manoj Kumar Dubey, Joint Director and Dr. Pradeep Kushwaha, Scientist, IPIRTI had meeting with Shri. Anurag Choudhary, PCCF Social Forestry Maharashtra about recent advances in Bamboo Technology & Possible Collaboration with IPIRTI, Bengaluru.

**30.07.2018:** Dr. Manoj Kumar Dubey, Joint Director, IPIRTI attended meeting of the Selection Committee for MoEF & CC sponsored Green Skill Development Programme on (1) Propagation and Management of Bamboo and (2) Value addition & Marketing of NTFP at the Institute of Wood Science and Technology (IWST), Bengaluru.

**02.08.2018:** Dr. B.N. Mohanty, IFS, Director and Dr. Manoj Kumar Dubey, Joint Director, IPIRTI had meeting with Agarbathi Industry owners under the Chairmanship of Principal Chief Conservator of Forests (PCCF) & Head of the Forest Force (HoFF), Karnataka at Aranya Bhavan, Bengaluru regarding discussion on availability of Raw Material for Agarbathi Production in which Dr. Alka Bhargav, Joint Secretary, National Bamboo Mission also gave her views.

## ABROAD VISIT

### 11<sup>th</sup> World Bamboo congress (WBC) 2018 at Xalapa, Mexico

14-18.08.2018: Dr. B.N. Mohanty, IFS, Director, Ms. Sujatha. D and Shri. Uday D.N, Scientists, IPIRTI participated in the 11<sup>th</sup> World Bamboo congress (WBC) held at Xalapa, Veracruz, Mexico & presented a paper on “Poverty Alleviation through utilization of Bamboo for high end products:



*Dr. B.N. Mohanty, IFS, Director, Ms. Sujatha. D and Shri. Uday D.N, Scientists, IPIRTI participated in the 11<sup>th</sup> World Bamboo congress (WBC) held at Xalapa, Veracruz, Mexico*

case study from Kerala State - India”, “Carbon Sequestration and Energy Efficient Potentials of Bamboo Mat Composites” and a poster on “Advances in Industrial Processing of Bamboo for Roofing Sheets” respectively.

The team had put up 12 posters of IPIRTI which displayed about the various bamboo products in details, technologies promoted by IPIRTI in the country and the processing involved in various production stages. The bamboo composites viz., Bamboo Mat Board (BMB), Bamboo Mat Corrugated Sheets (BMCS), Bamboo Mat Ridge Cap (BMRC), Bamboo Mat Compregs, Bamboo Laminated Lumber, Bamboo Face Veneer, Bamboo Vertical and Horizontal Laminate and Bamboo Flooring Tiles were displayed for the participants and public at large. Also a video show on “Poverty Alleviation Through Utilization of Bamboo for High End Products: Case study from Kerala State, India was presented on Television.

## 23<sup>rd</sup> International Forestry and Environment Symposium, 2018 at Srilanka

23-24.11.2018: Dr. Mamatha B.S. and Dr. Rashmi Shanbagh, Scientists participated in the 23<sup>rd</sup> International Forestry and Environment Symposium organized by Department of Forestry and



*Dr. Mamatha B.S. and Dr. Rashmi Shanbagh, Scientists participated in the 23<sup>rd</sup> International Forestry and Environment Symposium organized by Department of Forestry and Environmental Science at Srilanka*

Environmental Science, University of Sri Jayewardanepura, Srilanka and made an oral presentation on “Antifungal activities of selected plant extracts against wood rotting fungi-a challenge in panel wood products” under section “Wood Science, Wood and Non Wood Industry” and “Resourceful utilisation of wheat straw into value added composites” & “Inventiveness towards environmentally friendly solutions for lignocellulosic panel products” respectively.

The International symposium provided the platform to disseminate the knowledge which institute has in the field of wood and wood composites. Shared and exchanged the best practices and experiences in addressing eco-friendly wood preservatives, adhesives, wood based products and developed by IPIRTI for sustainable future including the environmental concerns, society and economy involved in the innovations.

29.11.2018: Dr. B. N. Mohanty, IFS, Director, IPIRTI attended 23<sup>rd</sup> Executive Committee Meeting and 8<sup>th</sup> General Assembly of APAFRI at Putra Jaya, Malaysia and deliberated upon the need to have a Corpus fund for long term self-sustainability of APAFRI.





**07.08.2018:** Dr. Manoj Kumar Dubey, Joint Director, IPIRTI had meeting with Shri. Kapil Gogia, Director, M/s. Gum Tree Plywood Ltd. at IPIRTI, Bengaluru.

**08.08.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI addressed a group of 35 students of Institute of Wood Science and Technology (IWST), Bengaluru on IPIRTI Technologies for Value addition at IPIRTI, Bengaluru.

**10.08.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI had detailed discussion with Ms. Alexa Bednarz, Founder, Eco-Shelter, LLC, USA for “transfer of BMCS technology and option to license” and gave interview during video shoot for the process of manufacturing Bamboo Mat Corrugated Sheet (BMCS).

**17.08.2018:** Shri. Amitava Sil, Officer-In-Charge, IPIRTI Field Station, Kolkata attended one-day National Workshop in Building CoDE of India-2016 - Fire & Life Safety held at Hotel Lalit Great Eastern, Kolkata organized by Bureau of Indian Standards jointly with the Indian Chamber of Commerce, Kolkata.

**23.08.2018:** Shri. Anand Nandanwar, Scientist delivered Lectures on “Mechanical properties of wood and panel boards” and “Interpretation of standards for testing of wood and panel boards” during the visit of Food and Agriculture Organization supported International trainees from Myanmar at Institute of Wood Science and Technology (IWST), Bengaluru.

**31.08.2018:** Dr. B.N. Mohanty, IFS, Director & Dr. Manoj Kumar Dubey, Joint Director, IPIRTI participated in the Stakeholder’s Meet at the Institute of Wood Science and Technology (IWST), Bengaluru.

**05.09.2018:** Shri Anand Nandanwar, Scientist attended Meeting with Civil Engineering Division Council and Sectional Committee Chairs of Bureau of Indian Standards at BIS Head Quarters in New Delhi.

**18.09.2018:** Dr. B.N. Mohanty, IFS, Director and Dr. Manoj Kumar Dubey, Joint Director, Dr. Vipin Kumar Chawla, Scientist, IPIRTI participated in the 9th World Bamboo Day Celebration organized by Karnataka Forest Department in collaboration with Institute of Wood Science and Technology (IWST) and Bamboo Society of India (BSI) at Arnaya Bhavan, Bengaluru. Dr. B.N. Mohanty, IFS, Director delivered a Technical talk. The innovative Bamboo Products of IPIRTI were also showcased in the exhibition.

## 128<sup>th</sup> Board of Governors Meeting of IPIRTI



*A view of 128<sup>th</sup> BoG meeting held at IPIRTI, Bengaluru*



*Shri. C.K. Mishra, IAS, Secretary to Government of India releasing GSDP training material*

**20.09.2018** : Dr. B.N. Mohanty, IFS, Director, IPIRTI organized 128<sup>th</sup> Meeting of the Board of Governors (BoG) of IPIRTI at IPIRTI, Bengaluru. The meeting was chaired by Shri. C.K. Mishra, IAS, Secretary to Government, Dr. Manoj Kumar Dubey, Joint Director attended as a special invitee for the meeting.

On this occasion, the following research outputs/publications were released by the Chairman:

- a) A video CD on “Bamboo Primary Processing in Kerala - A Panacea for Rural Employment” and the same was also played before the Board.
- b) Research Reports: R.R.No.203: Development of Honeycomb Panels using Bamboo Slivers; R.R.No.204: Estimation and Forecasting of Import of Wood and Wood products in India & R. R. No.205: Study on Accoustic and Themal Efficiency of Particle Boards made from Agro Residues.
- c) Product Profile – Composites from Tetra Pack Wastes.
- d) GSDP training material entitled “Value Addition and Marketing of NTFP (Plant Origin): Bamboo Crafts”.

**26.09.2018**: Dr. B.N. Mohanty, IFS, Director and Dr. Manoj Kumar Dubey, Joint Director, IPIRTI attended a meeting regarding “Establishment of Gujarat Centre for Value Addition and Skill Development Centre for wood and wood products” under the Chairmanship of Shri. Siddhanta Das, IFS, DGF&SS at the MoEF & CC, New Delhi.

**28.09.2018**: Dr. Manoj Kumar Dubey, Joint Director IPIRTI participated in the 24<sup>th</sup> meeting of Research Advisory Group (RAG) of the Forest Research Institute (FRI) at Dehradun.

**03.10.2018**: Dr. B.N. Mohanty, IFS, Director, IPIRTI along with Dr. Manoj Kumar Dubey, Joint Director, Ms. Sujatha, Shri. Uday D.N, Dr. Vipin Kumar Chawla, Dr. Narasimha Murthy and Dr. Vinod Kumar Updhayay, Scientists attended IPIRTI-EMPRI Interactive meeting for the Green Skill Development

Programme (GSDP) on “Value addition & marketing of NTFPs (plant origin): Bamboo Crafts with Smt. Ritu Kakkar, IFS, APCCF & Director General, Environmental Management and Policy Research Institute (EMPRI), Government of Karnataka along with other officials at Hotel Capitol, Bengaluru.

**04.10.2018:** Dr. Manoj Kumar Dubey, Joint Director, IPIRTI attended a video conference meeting organized by MoEF&CC for discussion on the proposals for courses under GSDP at National Informatics Centre (NIC), Bengaluru.

**10.10.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI had a meeting with Shri. Jitendra Nayak, Regional Manager, M/s. Tata Trust about Bamboo Housing in Odisha at IPIRTI, Bengaluru.

**17.10.2018:** Dr. Manoj Kumar Dubey, Joint Director, IPIRTI addressed and interacted with a group of 26 delegates from 13 Countries across Africa and Asia who visited IPIRTI, Bengaluru as a part of International Training Programme on “Capacity Building for Providing Alternative Livelihood Opportunities for Poor (CBALO)” organized by National Institute for Micro, Small and Medium Enterprises (Ni-MSME) an organization of the Ministry of MSME, GoI.



**25.10.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI attended the meeting regarding “Implementation status of Expenditure Management Commission (EMC)” under the Chairmanship of AS & FA, MoEF&CC, New Delhi.

## 55<sup>th</sup> Annual General Meeting of IPIRTI Society

**30.10.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI organized and participated in 55<sup>th</sup> Annual General Meeting of IPIRTI Society as Director cum Member Secretary through Video Conferencing under the Chairmanship of Dr. Harsh Vardhan, Hon’ble Minister of Environment, Forests and Climate Change (MoEF&CC) and President of IPIRTI Society.

Shri. Subhash Chandra Jolly, President of Wood Technologist Association (WTA) presented a Memorandum to



*A view of 55<sup>th</sup> AGM of IPIRTI Society held through Video Conferencing at Vikas Soudha*

Hon’ble Minister of Environment, Forest and Climate Change highlighting that India, a fast growing



economy, is now a country of 1.3 billion aspirants and has to play a key role in fighting problems of climate change and environmental degradation.

Dr. Harsh Vardhan, Hon'ble Minister of Environment, Forests and Climate Change (MoEF&CC) and President of IPIRTI Society appreciated the members for their enthusiastic participation and expressed that the main purpose of Video Conference is to minimize the travel expenditures. However, any of the members can visit Ministry at any time and submit their grievance/suggestions. Further, he emphasized that to transform the dream of Hon'ble Prime Minister Shri. Narendra Damodardas Modi to make "New India" into reality, every citizen should work hard and with synergy.

The meeting ended with the vote of thanks by Dr. Manoj Kumar Dubey, Joint Director, IPIRTI.

## Two days workshop for participating States, Entrepreneurs, Artisans in the Bamboo Sector



Dr. B.N. Mohanty, IFS, Director, IPIRTI organised two days workshop for participating States, Entrepreneurs, Artisans in the Bamboo Sector held in Collaboration with National Bamboo Mission (NBM) from 19-20.11.2018. He made presentation on "Bamboo Composites". Dr. Alka Bhargav, Jt. Secretary-cum-Member Secretary, NBM attended the workshop along with participants from 09 states and two institutions.

Dr. B.N. Mohanty, IFS, Director, IPIRTI while concluding the inaugural session highlighted the purpose of the workshop and briefed about the concepts to be covered in the workshop viz., bamboo products & bamboo technology. Resources & products are two important aspects. IPIRTI focuses on product development technology. Compared to natural grass species, plantation species are problematic in processing & require special research & development inputs. Bamboo processing technologies for value added products have potential to transform bamboo as poor man's timber to green gold.

Dr. Alka Bhargava, Jt. Secretary-cum-Member Secretary, NBM has advised to visit NBM Web site relevant link regarding species, related institutions etc. She also pointed out that Bamboo is a multi-disciplinary subject and one department cannot do entire value change NBM can be a platform to link all department and shareholders. She further emphasized that there is a need of product base or market base approach to improve the sector.

**19.11.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI attended 25<sup>th</sup> Annual General Meeting of the Indian Council of Forestry Research and Education (ICFRE) Society held under the Chairmanship of Dr. Harsh Vardhan, Hon'ble Minister of Environment, Forests and Climate Change (MoEF&CC) and President of ICFRE Society through Video Conference at Institute of Wood Science & Technology (IWST), Bengaluru.

**19-23.11.2018:** Dr. V.K. Upadhyay, Scientist attended 5 days workshop on “Computational Techniques for Education and Research” at Udaipur, Rajasthan.

**03-05.12.2018:** Dr. B.N. Mohanty, IFS, Director, Ms. D. Sujatha and Shri. Kiran. M.C., Scientists, IPIRTI participated in the 14th National Silviculture Conference at Institute of Wood Science & Technology (IWST), Bengaluru on the theme of “Forest & Sustainability: Securing a Common Future”. Dr. B.N. Mohanty, IFS, Director made a technical presentation on “High End Products from the Green Gold Bamboo”. Institute products were exhibited in the exhibition.

**10.12.2018:** Dr. Manoj Kumar Dubey, Joint Director, IPIRTI addressed and interacted with 35 Range Forest Officer trainees from Gujarat Forest Rangers College, Rajpipla, Gujarat at IPIRTI, Bengaluru.

**11.12.2018:** Dr. Manoj Kumar Dubey, Joint Director, IPIRTI attended meeting of the Committee to review the Autonomous Bodies (ABs) which was held at National Institution for Transforming India (NITI Aayog) (Phase II/Cluster I- VII) at NITI Ayog, New Delhi.

**27.12.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI attended a meeting regarding “New website of the Ministry and submission of updated information for website” under the Chairpersonship of Ms. Manju Pandey, Joint Secretary (Media), MoEF&CC at New Delhi.

**27-30.12.2018:** Dr. Ranjana Yadav, Scientist, IPIRTI Centre, Mohali attended the conference and made an oral presentation on “Study on the Modification of Urea Formaldehyde Resin with Keratin Bonding Plywood” in CHEMCON, 2018 at NIT Jalandhar.

**28.12.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI had discussion with State Bamboo Mission, Government of Odisha regarding Bamboo industrialization in the State.

## Exhibition

**05.08.12.2018:** Shri. K. Thanigai, Scientist exhibited all the bamboo and wood based composites developed by IPIRTI at India International Science Festival during the Exhibition held at Lucknow, Utter Pradesh.

**07-12.12.2018:** Dr. B.N. Mohanty, IFS, Director and Shri. K. Thanigai, Scientist, IPIRTI attended 14<sup>th</sup> Kerala Bamboo Fest 2018, National Level Workshop in Bamboo Sector organised by Kerala State Bamboo Mission at Ernakulam, Kerala. Director presented a paper on “The Composite Materials developed using Bamboo”. Bamboo based composite materials developed by IPIRTI were also showcased in the exhibition.

### Other activities

**15.08.2018:** 72<sup>nd</sup> Independence Day of the Nation was celebrated in the Institute with full enthusiasm. Dr. Manoj Kumar Dubey, Joint Director hoisted the National Flag and addressed the staff members. Cultural programmes were organized and all the staff members actively participated by singing patriotic songs, delivering speech & so on.

**02.10.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI organized & celebrated 149<sup>th</sup> Gandhi Jayanthi at IPIRTI Campus along with Joint Director and other Officials.

**16.11.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI organised & celebrated the 63<sup>rd</sup> Kannada Rajyothsava (Karnataka Statehood Day) at IPIRTI Campus along with Joint Director and other Officials.

### Visit of Dignitaries

**20.07.2018:** Mr. Aftab, Director, M/s. Ahmad Wood Craft, Bangladesh visited IPIRTI Field Station, Kolkata to discuss with Shri. S.C. Sahoo, Scientist regarding factory visit to improve the plywood quality.

**24.07.2018:** A Japanese delegation led by Mr. Koji Makimoto, Dy. Director General (Forest Agency) accompanied with Mr. Tetsuya Yetake, First Secretary, Japan Embassy delegates along with Shri. Suneesh Buxy, DG, MoEF&CC, New Delhi visited IPIRTI, Bengaluru under Memorandum of Cooperation with 3rd Joint Working Group meeting for exchanging information and discussion in areas of Sustainable Forest Management, Enhancement of Forest Conservation and Forest Disaster Prevention, effective utilization of forest resources, research and development in forestry sector and preparing Road Map for developing cooperation between two countries in the field of forestry. Dr. B.N. Mohanty, IFS, Director, IPIRTI gave an overview of IPIRTI activities through Power Point Presentation and Plant visit.

**26.07.2018:** Shri. Deepankar Mitra, Director, M/s. Maple Moulding, Mumbai visited IPIRTI Field Station, Kolkata to have technical discussion with Shri. S.C. Sahoo, Scientist.

**25.09.2018:** Shri. P. Dutta, Director, M/s. Maa Manasha Plywood Industries (P) Ltd., Malda visited



IPIRTI Field Station, Kolkata to discuss with Shri. S.C. Sahoo, Scientist regarding the warping problem arising during manufacture of plywood.

**03.10.2018:** Dr. Prabir Kumar Choudhuri, Vice Principal, Silpa Sadana, Visva Bharati had visited IPIRTI Field Station Kolkata and had discussion with Shri Amitava Sil, Officer-In-Charge, IPIRTI, Field Station, Kolkata regarding training of their student on various needs and collaborative research with IPIRTI and Visva Bharati.

**30.10.2018:** Shri. Trilok Prakash Gupta, M/s National Wood Wool Manufacturing Company visited IPIRTI Field Station, Kolkata to discuss with Shri Amitava Sil, Officer-In-Charge, IPIRTI, Field Station, Kolkata regarding viability of testing of their acoustic materials (wood wool and mineral fiber, mineral fiber boards).

### MoUs signed

**30.07.2018:** Dr. B.N. Mohanty, IFS, Director, IPIRTI visited Shillong and signed a Memorandum of Understanding between IPIRTI and Cane and Bamboo Technology Centre (CBTC) under the umbrella of North Eastern Council (NEC), Burnihat, Assam for setting up of Establishing Common Facility Centers (CFC) at 7 states of North Eastern India.

**08.08.2018:** Dr. B. N. Mohanty, IFS, Director, IPIRTI signed a Memorandum of Understanding with Dr. K. H. Vinay Kumar, CCF and Director, Environmental Management and Policy Research Institute (EMPRI), Bengaluru for partnering in the Green Skill Development Programme (GSDP) with the purpose of conducting courses on “Value addition and Marketing of NTFPs (Plant-Origin) - Bamboo Craft”.



**05.10.2018:** Dr. B. N. Mohanty, IFS, Director, IPIRTI signed a Memorandum of Understanding with Shri. Anil Kumar Singh, IFS, PCCF, Assam (Retd.) & CEO on behalf of M/s. Green Initiatives Certification & Inspection Agency (GICIA), New Delhi for “Collaboration in Developing Composite Wood Emission Certification for Indian Manufacturers”.



## TRAINING

### One Year Post-Graduate Diploma Course on Wood and Panel Products Technology:

**24-28.09.2018:** Dr. V.K. Upadhyay, Scientist organized and coordinated study tour for 29<sup>th</sup> Batch of PGD-WPPT trainees to industries at Mysore, Hunsur, Mangalore and Chikkamagalur to have field knowledge of wood processing industry & its operations.

**24.10.2018:** Dr. B.N. Mohanty, IFS, Director and Dr. V. K. Upadhyay, Scientist, IPIRTI organized campus interview for 29<sup>th</sup> Batch of PGD-WPPT trainees wherein 31 trainees were placed in different industries successfully.

Training for 30<sup>th</sup> Batch of One-Year Post Graduate Diploma Course in Wood and Panel Products Technology (WPPT) commenced in the month of November, 2018 in which 29 trainees were admitted and are undergoing training.

### Short Term Vocational Training Course

**29.10.2018-02.11.2018:** Ms. Sujatha. D, and Dr. Mamatha. B.S., Scientists conducted five days Short term training course at IPIRTI Bengaluru for testing of low formaldehyde resin for panel products and their testing by perforator and chamber method.

**28.11.2018-31.12.2018:** One Month short term training course on Plywood Manufacturing Technology was conducted for 06 candidates at IPIRTI Field Station, Kolkata.

### Special Training Course

**23-27.07.2018:** One-week refresher training course for IFS Officers on “Bamboo/Wood Resource Development and Value Addition for Sustained Livelihood’ was organized at IPIRTI, Bengaluru. Dr. B.N. Mohanty, IFS, Director presented a technical paper on “Scenario of Wood & Panel Industries in India” in the training course. Dr. Manoj Kumar Dubey, Joint Director and Dr. Vipin Kumar Chawla, Scientist as a Course Director and Course Coordinator respectively assisted the team. As a part of





training, IFS Officers visited to M/s. Growmore Biotech Ltd., Hosur and M/s. Hunsur Plywood Industries Ltd. Valedictory Session was arranged on the concluding day of the training.

**03.10.2018:** Dr. Pradeep Kumar Kushwaha and Dr. Vinod Kumar Upadhyay, Scientists conducted One-day Special Training programme for Tribal people of Bijapur on “Primary processing of bamboo and round stick making from bamboo for Agarbatti” organized by Chattisgarh Forest Department for at IPIRTI, Bengaluru. About 30 candidates took part in the training.

**Green Skill Development Programme (GSDP) on “Value addition and marketing of NTFP (Plant Origin) Bamboo Crafts” during 30.10.2018 - 17.12.2018**



A 45 Days Special Training Programme for Green Skill Development Programme (GSDP) on “Value addition and marketing of NTFP (Plant Origin) Bamboo Crafts” for 10 candidates was conducted at IPIRTI, Bengaluru. Dr. V.K. Upadhyay was the Training In-charge (TIC) while Dr. Vipin Kumar Chawla, Dr. Pradeep Kumar Kushwaha were Course Director and Course Co-Director respectively for the above training program. Shri. Amitava Sil, Officer-in-Charge, IPIRTI Field Station, Kolkata imparted training under scheme and demonstrated in construction of earthquake resistant, energy efficient bamboo house of size 4ft x 4ft x 8 ft height.



The training programme focused on Preliminary Processing of bamboo, Bamboo Mat Board processing, Bamboo Mat based Strip Composites, Bamboo Strip and particle based products, Bamboo based housing, developmental issues, problems and prospects, seasoning of bamboo, preservative treatments for bamboos for different end use applications, adhesives and its classification.



*Valedictory function of GSDP trainees at IPIRTI, Bengaluru*

Valedictory function was arranged in the IPIRTI, Conference Hall, Bengaluru on 17.12.2018. Shri. Parameshwaran Krishna Iyer, Proprietor, M/s. Bamboo Pecker, Bengaluru graced the occasion as a Chief Guest.

**04-05.12.2018:** Two days' refresher training course for IFS Officers on "Contribution of Forests Plantation in Livelihood support Industrial Production" was conducted for 19 candidates at IPIRTI, Bengaluru. Dr. B.N. Mohanty, IFS, Director presented a technical paper on "High end products from Green Gold: Bamboo" and Dr. Manoj Kumar Dubey, Joint Director, IPIRTI on "Emerging Technologies for Wood and Wood Products" in the training course. Shri. K. Thanigai, Scientist as a Course Director and Shri. Ramkumar, Scientist, Course-coordinator assisted the team. As a part of training, IFS Officers also visited Growmore Biotech Ltd. Hosur. "Experience sharing" and "Valedictory session" were also arranged for IFS officers.



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