Indian Plywood Industries Research and Training Institute (IPIRTI) organised an International Conference cum Exhibition on “Bamboo Composites” at IPIRTI Campus, Bengaluru during 09th -12th February, 2019. The event covered four days exhibition, two days Conference and three parallel industrial/field visits for interested International participants on 12th February, 2019 to M/s. Grow More Biotech, Hosur, Tamil Nadu, National Institute of Design (NID), Bengaluru and Centre for Green Building Materials & Technology (CGBMT), Bengaluru.

**CONFERENCE**

An International Conference on “Bamboo Composites” was organized during 11th – 12th February, 2019. It was one of the flagship events of IPIRTI which brought in the finest talents/experts of the world together to chalk out the strategies for giving a big boost to sustainable growth of the bamboo industry and disseminate the information on the latest advances and future prospects for bamboo development pan global.
INTERNATIONAL CONFERENCE CUM EXHIBITION ON BAMBOO COMPOSITES HELD AT IPIRTI,
(9th - 12th February 2019)

INNAGURATION

TECHNICAL SESSIONS
The main objectives of the conference were:
- Development and mass production of bamboo composites
- Establishment of value chain networks within and outside India
- Integrate the outcomes of the conference in the industrial perspective of revamped National Bamboo Mission of India.

There were 27 registered participants from International Organizations based in 16 countries mainly from Asia, Africa, Europe and Latin America such as Afghanistan, Austria, Bangladesh, Brazil, Ethiopia, Ghana, Guatemala, Italy, Jordan, Malaysia, Nigeria, Sri Lanka, Tajikistan, Tanzania and Zimbabwe. There were about 100 participants from across the country representing different stakeholders viz. farmers, artisans, industry, government officials, research institute and university.

**Inaugural Function**
The International Conference was jointly inaugurated by the Chief Guests Dr. Maharaj Muthoo, President, Roman Forum, Italy, Shri. Naveen Verma, IAS, Secretary, Ministry of Development of North Eastern Region (MDoNER) on 11th February, 2019 and the Guests of Honour present on the dias were Shri. Arun K. Bansal, IFS (Retd.) Former ADGF, MoEF&CC, Shri. Avani Kumar Verma, Former PCCF & HoFF, Govt. of Karnataka, Shri. B.K. Singh, IFS (Retd.) and Former PCCF & HoFF, Govt. of Karnataka.

![Lightening of Lamp by the dignitaries](image)
Giving a call for ‘valourising bamboo’, Mr. Maharaj Muthoo, President, Roman Forum, Italy, cited the example of China which annually exports bamboo products worth US$25 billion. He said that bamboo has traditionally been the mainstay of as many as 1500 items of use from products varying from cradle to coffin. He opined bamboo growing areas could be given funds under poverty eradication schemes and urged the need of certification for its functions in construction, cultural and ecological services.

Addressing the gathering, Shri. Naveen Verma, IAS, Secretary, Ministry of Development of North Eastern Region (MDoNER) said, “The event comes as a much-needed step to tap into the immense potential of the bamboo sector. It is also a massive attempt towards boosting value addition to the country’s and the world’s bamboo industries.”

Chairman of the Organisation Committee and Director of IPIRTI, Dr. B.N. Mohanty in his welcome address said, “This conference and exhibition provided a comprehensive overview of the latest innovations and the manufacturing technologies in the field of bamboo composites, bamboo crafts, bamboo jewellery and bamboo construction.”

**Souvenir Release**

Dr. Maharaj Muthoo, President, Roman Forum, Italy, Shri. Naveen Verma, IAS, Secretary, Ministry of Development of North Eastern Region (MDoNER) and other Guests of Honour released the Souvenir of the International Conference.
Technical Sessions

Technical Sessions were held on 11th and 12th February, 2019 in the Conference Hall of IPIRTI on the following themes:

- Bamboo Resource Development
- Innovation, Product Development and Utilization.

It included 6 Technical Sessions in which 25 eminent speakers and scholars representing International organizations, National Institutes, Universities, Industries, Farmers, Artisans and NGO’s shared their knowledge, expertise and experience. The technical papers presented in different technical sessions were as follows;

**Technical Session I** was Chaired and Co-Chaired by Dr. A.K. Bhattacharya, IFS (Retd.) Head, Green Highways Division, National Highways Authority of India (NHAI), Ministry of Road Transport and Highways (MoRTH), Government of India and Mrs. Nellam Manjunath, Managing Trustee, Centre for Green Building Materials & Technology (CGBMT) respectively. The papers presented in this session were “Bamboo Green Gold Perspective”, “Way forward for harnessing the potential of bamboo in transforming rural economy in India”, “INBAR’s Global Bamboo Development Activities for Sustainable Development”, “Bamboo Industrial Processing in India Present Scenario & Future Trends”, “Bamboo resource utilization in Kerala state: Challengers and Prospects” and “Environmentally friendly composite panels made from bamboo fibers and urban and industrial waste”.

**Technical Session II(a)** was Chaired and Co-Chaired by Shri. A.K. Bansal, IFS (Retd.), Former ADGF, MoEF&CC, Government of India and Dr. Sundar Naik, IFS (Retd.), Govt. of Karnataka and President, Bamboo Society of India respectively. The papers presented in this session were “Bamboo species suitable for composite and its Advancement in Propagation and Cultivation”, “Role of MSMEs in Bamboo Value Chains Development: BPRC the way Forward” and “Quantifying Organic Carbon of Bamboo for REDD plus: Perspective Bangladesh”.
Technical Session II(b) was Chaired and Co-Chaired by Dr. N. Barathi, Founder Director, Growmore Biotech Ltd. Hosur, Tamil Nadu and Dr. M. Al-Amin, Professor, Institute of Forestry & Environmental Sciences (IFES), Chittagong University, Bangladesh respectively. The papers presented in this session were “Brazil Bamboo Technology Training Center and High Performance Structural Bamboo Particulate Waste Panels”, “Bamboo Agro-Forestry Systems and Value Addition – A Farmer’s Perspective” and “Bamboo in Indian Architecture”.

Technical Session III was Chaired and Co-Chaired by Dr. S.T.S. Lepcha, IFS (Retd.) and Prof. Gurpreet Singh, (Retd.), G.B. Pant University respectively. The papers presented in this session were “Design Approach for Making Solid Bamboo Furniture”, “Distribution and Propagation Possibilities of Industrially Suitable Bamboo Species in the India”, “Performance Assurance and CE Marking: Future Strategy to be Adopted by Bamboo Based Industries” and “Innovative Bamboo Products for Global Urban Market”.

Technical Session IV was Chaired and Co-Chaired by Shri. Mohan Karnat, IFS, Director, IWST and Shri. Ratan Lal Banik, Former, Advisor Bamboo & Cane Resource, INBAR, South Asia respectively. The papers presented in this session were “Bamboo in Green Highways for Sustainable Environment and Inclusive Growth”, “Bamboo based construction and furniture by KONBAC”, “Bamboo - Skill, Technology, Design and Product Development” and “Bamboo lamination and moulding application in the handicrafts sector of the North East India”.

Technical Session V was Chaired and Co-Chaired by Dr. Syam Viswanath, Director, Kerala Forest Research Institute (KFRI) and Shri. Sanjeev Karpe, Director, KONBAC, Kundal, Maharashtra respectively. The papers presented in this session were “Bamboo-Polypropylene Composites: A comprehensive Overview”, “Fast Track Building Construction Using Light Gauge Steel Frame Structure and Bamboo Composite Panels”, “Bamboopecker Lifestyle Crafts Pvt. Ltd.” and “Doubling Farmers’ Income through Bamboo Cultivation in Tripura”.

Panel Discussion
After the Technical Sessions, a Panel discussion was held under the Chairmanship of Shri. Avani Kumar Verma, IFS (Retd.), Former PCCF & HoFF Govt. of Karnataka and Co-Chaired by Dr. S.T.S. Lepcha, IFS (Retd.), Mr. Khairul Anwar, Director, Malaysian Timber Council, Bengaluru and Dr. B.N. Mohanty, IFS, Director, IPIRTI. In the panel discussion, all the rapporteur reports were discussed and recommendations were made.
**Exhibition**

An Exhibition on “Bamboo Composites” was also organized at IPRTI, Campus during 09th-12th February, 2019. Artisans, furniture manufactures, industries and institutes showcased the bamboo products. Totally there were 26 stalls and 46 exhibitors participated in the exhibition. This expo targeted to be a sound platform for bamboo based furniture, craft items, machinery and tools, etc. in the interest of architects, interior designers and general public at large. It was an Exhibition cum Sale wherein around 2000 visitors showed interest in buying the products.

**Recommendations**

The major Recommendations/Takeaways/Suggestions from Technical sessions and concluding Panel discussion are summarized below:

- An urgent need to scale up the pro-poor bamboo livelihood income generation and environmental benefits towards the priority areas of climate change, bamboo farming system, household energy, high-end products, etc.

- The supply of quality raw material to the bamboo based industry sector is a matter of grave concern and there is clear mismatch between available raw materials and species wise industrial applications which need to be addressed with war footing. The quality of bamboo required for each industrial application need to be assessed and accordingly the supply should be worked out. For e.g. Paper industry does not require high lignin content bamboo, however, for composites and furniture making there should be ample presence of lignin and cellulose.

- The Indian bamboos are highly suitable for construction purposes and by utilizing them we could have got many national and international assignments such as bamboo interiors viz. Bangalore Airport project which was recently bagged by foreign vendors. Clearly, bamboo products are having huge market potential. If Government sector/Aganvadi/Corporate houses promote use of bamboo products for office purposes, it will cover about 20% of the market which may be a big boost for bamboo sector.

- Many machineries for processing of bamboo composites are being imported and this involves high capital investment. Reduction of labour cost is also important factor for value addition of bamboo. Robotics can play a big role to replace man power in future for value added bamboo
INTERNATIONAL CONFERENCE CUM EXHIBITION ON BAMBOO COMPOSITES HELD AT IPIRTI, 
(9th - 12th February 2019)
products. Hence, indigenous machinery for bamboo processing for furniture making and structures needs to be upgraded.

- Quality of the materials and productivity should be enhanced and also tools to reduce the labour cost have to be re-designed. Quality control and certification process have to be formulated, especially with reference to E0, E1 & E2 emission and should be incorporated in certification process. This would boost the international export of bamboo products.

- Identification of Bamboo species available in various region of India and development of the bamboo hub is need of the hour. To start with two clusters, per hubs may be set up in bamboo industrial zones. Based on the success of these clusters, operations can be multiplied at a later stage.

- Each State Government should take initiatives for providing financial assistance to farmers and upcoming entrepreneurs, with a single window agency for bamboo promotion. To understand the floor level problems there should be frequent interactions among the industry departments/forest departments and corporates.

- Potential of the bamboo as sustainable raw material and quality product should be promoted world-wide through global bodies such as INBAR, World Bamboo Organization and other such agencies.

- The best practices and strength of each organization on bamboo activities should be identified. There should be synergy for implementation of different bamboo activities for value addition in the interest of whole country.
Potential of Pre-fab Dwellings using Modular Construction Technique

During the recent devastating earthquakes of 7.8 magnitudes in Nepal, many houses have been destroyed and took many lives. These losses are due to poor building techniques and using heavy building materials. In the developed countries like Japan, China, etc. the earthquakes do not affect the lives and does not destroy the houses since they use the pre-fabrication building techniques and steel or aluminum frame structures rather than heavy concrete building structures.

The pre-fabricated homes is constructed by light steel framed structure with sandwiched panels for the building envelope materials, as a standard module for space series combination of components, the bolt connection, and the new concept of environmental protection economic activities in pre-fabricated homes. The pre-fabricated components are brought to the site from the factory and erected using designed techniques. Work is never delayed and can be completed within a short duration of time. The word “Prefab” is not only an industry term like modular homes, manufactured homes, panelized home, or site-built home, but is an amalgamation of panelized and modular building systems which is well planned & designed before the initiation at site of construction and placement of structure as per design at work site. Pre-fabricated modular houses for dwelling are to be manufactured in a factory in advance, usually in available sections and can be easily transported to the site and integrated. Pre-fabricated components are made of composite materials which are manufactured by combination of materials containing different properties such as steel, bamboo mat boards, bamboo mat corrugated sheets, insulated materials. These are specifically designed for longer period of applications or usage. The factory setting enhances affordability through a combination of bulk purchase of materials, mass production assembly techniques and the use of less skilled labour. They are durable, weatherproof as well as termite proof. Due to their longer life of utility and affordable cost, manufactured homes can be used for permanent, semi permanent or temporary applications.
Industry/Organisation visits

17.01.2019: Shri. Amitava Sil, Officer-in-Charge, IPIRTI Field Station, Kolkata visited M/s. The Western India Plywoods Ltd., Kannur, Kerala to have a discussion about “Establishing a bamboo composite housing system in Kerala”.

21-25.01.2019: Dr. V.K. Upadhyay, Scientist visited Agartala for collecting data on industrial and traditional industries at Bagwasa, Kumarghat, M/s. Mutha Industries, Bamboo and Cane Development Institute (BCDI) & Center for Forest-based Livelihoods & Extension, ICFRE, Agartala.

10.02.2019: Dr. Pradeep Kumar Kushwaha, Scientist visited CFC Sawombung, Imphal regarding preparation of the Centre for establishment of bamboo processing unit.

06-08.03.2019: Dr. Narasimha Murthy and Dr. Rashmi Ramesh Shanbhag, Scientists visited Kandla Port to collect the information on imported woods and other related arenas for the project on “Study of Imported logs at Kandla Port and identification of alternative indigenous plantation species for import substitution”.

25-30.03.2019: Dr. V.K. Upadhyay, Scientist visited Particle Board Industries at Morbi, Kheda, Maliya, Surat, Bardoli, Kim and Haryal for data collection of Particle Board and Medium Density Fibre Board (MDF) for the institute project on “Estimation and forecasting of particle board and MDF in India”.

Meetings/Seminars/Workshops/Conferences

03-07.01.2019: Dr. Ranjana Yadav, Scientist, IPIRTI Centre, Mohali attended 106th Indian Science Congress at Lovely Professional University, Punjab and presented the poster entitled “Synthesis and properties of Keratin modified urea formaldehyde resin for bonding Agrobased Particle Board”.

04.01.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI participated in a Sensitization Workshop on “Sustainable Forest Management Certification Standard” under the Chairmanship of Principal Chief Conservator of Forests & HoFF, Karnataka Forest Department, Government of Karnataka at Conference Hall, Aranya Bhawan, Bengaluru.

08.01.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI delivered a lecture on “High end products from the Green Gold” in the IFS refresher training course at Institute of Wood Science and Technology (IWST),
11-12.01.2019: Shri. Amitava Sil, Officer-in-Charge, IPIRTI Field Station, Kolkata attended two days workshop on “National Building Code of India 2016” at Indian Institute of Technology (IIT), Guwahati organized by Bureau of Indian Standards (BIS) jointly with Consulting Engineers Association of India (CEAI) and IIT, Guwahati, Assam.

29.01.2019: Dr. B.N. Mohanty, IFS, Director IPIRTI participated in the 1st meeting of National Advisory Committee under the Chairmanship of Shri. Saibal Dasgupta, ADG (FC), MoEF&CC, GoI, New Delhi for organising International Conference-cum-Exhibition on “Bamboo Composites” during 09th - 12th Feb, 2019 at IPIRTI, Bengaluru. Ms. Sujatha. D, Scientist, IPIRTI, Mr. K. J. Jacob, Chairman, KSBC Ltd., Kerala and Dr. Pankaj Aggarwal, Scientist, IWST, Bengaluru were also present in the meeting.

29-30.01.2019: Dr. Manoj Kumar Dubey, Joint Director, IPIRTI participated and delivered a lecture on “Ply industries - Scope in Tamil Nadu cultivation and convergence” under the theme “Current status & future wood demand & supply for various end uses” at National Workshop on “Securing Wood Demand through Enhancing Productivity of Planted Forests” organized by Institute of Forest Genetics & Tree Breeding (IFGTB), Coimbatore, Tamil Nadu.


03.02.2019: Dr. Narasimha Murthy, Scientist attended and presented a paper on “Plywood Industry status and Preservative treatment methods for Plywood Protection” at Pest Management’s Educational Conference organized by Pest Management Association’s (PMA), Pune, Maharashtra at Heritage Hyderabad, Telangana.

03-10.02.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI, Dr. Pradeep Kumar Kushawaha, Shri. Amitava Sil and Shri. S.C. Sahoo, Scientists participated in 3rd World Bamboo Workshop 2019 under the slogan “Breaking the Challenges of Bamboo for a better future” organized by World Bamboo Organization (WBO) at Imphal, Manipur. Dr. B.N. Mohanty, IFS presented a paper on “Bamboo Industrial Processing in India - Present Scenario and Future Trends”.

04.02.2019: Dr. Manoj Kumar Dubey, Joint Director, IPIRTI had an official meeting with Executive Members of Kandla Timber Association (KTA), Gujarat at IPIRTI, Bengaluru.

18-19.02.2019: Dr. Vipin Kumar Chawla, Scientist presented a paper titled “Bamboo for affordable Housing - A new approach for construction” in National Workshop on the “Utilization of Bamboo as a building material in North East Region” at Central Building Research Institute (CBRI), Rorkee, Uttarakhand.

04.03.2019: Ms. Sujatha, Scientist delivered a lecture on “Bamboo Composites – Value added products developed by IPIRTI” at a training programme on “Value Addition - Bamboo Technologies” organized by Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore and funded by National Bamboo Mission (NBM), Ministry of Agriculture and Farmers Welfare, Government of India at Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore.

05.03.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI attended a meeting regarding settlement of Internal Audit Paras under the Chairmanship of Shri. Saibal Dasgupta, ADG (FC) in his chamber at MoEF&CC, GoI, New Delhi.

07.03.2019: Shri. Amitava Sil, Officer-in-Charge, IPIRTI Field Station, Kolkata participated and presented a paper titled “Sustainable Walling Technology with Bamboo and Bamboo Composites” in a workshop on “Sustainable Construction Technology” organized by The Energy & Resources Institute (TERI) jointly with International Finance Corporation (IFC) at Mumbai.

11.03.2019: Shri. Amitava Sil, Officer-in-Charge, IPIRTI Field Station, Kolkata and Member Secretary organised 10th Management Review meeting in consultation with Dr. B.N. Mohanty, IFS, Director and Chairman of Management Review Committee.

18.03.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI organized and Chaired the 1st meeting of IPIRTI Corpus Fund Management Committee at MoEF&CC, New Delhi. Shri. Manoj Shrivastava, Deputy Secretary, IFD, MoEF&CC, GoI, Dr. C.N. Pandey, Principal Technical Advisor, M/s. Century Plyboards (India) Ltd. and Ms. Jayanthi, Administrative Officer, IPIRTI attended the meeting.

19.03.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI attended the 2nd meeting of Technical Committee – II under the National Bamboo Mission (NBM), Krishi Bhawan, New Delhi constituted for rejuvenation of Bamboo Industries, Policy Reforms, new Innovations etc. at Department of Agriculture, Cooperation
& Farmers Welfare.

20.03.2019: Dr. B. N. Mohanty, IFS, Director, IPIRTI participated as a Guest/Key Note Speaker in one-day State Level Round Table and Workshop on National Bamboo Mission (NBM) at Hotel Suryansh organised by Sparsh Foundation of JK Paper & National Bank for Agriculture and Rural Development (NABARD), Odisha. He also presented a paper titled “Prospects of Bamboo Industrialization with Special Reference to Odisha State”.

28.03.2019: Shri. Amitava Sil, Officer-in-Charge, IPIRTI Field Station, Kolkata as a Principal Member attended 17th Meeting of Building Construction Practices Sectional Committee, CED 13 under the Chairmanship of Shri. D.S. Sachdev, Director General, Central Public Works Department (CPWD) (Retd.,) at Bureau of Indian Standards (BIS), New Delhi.

Other activities

24th ALL INDIA FOREST SPORTS MEET (AIFSM)’ 2019

Dr. B.N. Mohanty, IFS, Director and some of the Scientists and staff members from IPIRTI, Bengaluru and IPIRTI Field Station, Kolkata participated in the 24th All India Forest Sports Meet (AIFSM)’ 2019 held during 09-13.01.2019 Raipur, Chattisgarh. Shri. Kiran, Scientist was the Nodal Officer for the sports meet.

Shri. Sujit Shashikant Patil, LDC won the Gold Medal in Weight Lifting. A felicitation function was organized to Shri. Sujit Shashikant Patil for winning Gold Medal in Weight Lifting on 17.01.2019 at the Institute.
Republic Day
26.01.2019: 70th Republic 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. Excellency award was presented to staff members by recognising their work in the year 2018-19.

Martyr’s Day
30.01.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI observed silence for two minutes along with Dr. Manoj Kumar Dubey, Joint Director and other staff members on the occasion of Martyr’s Day.

08.03.2019: Dr. B.N. Mohanty, IFS, Director organised and celebrated International Women’s Day at IPIRTI campus along with Dr. Manoj Kumar Dubey, Joint Director and other staff members.

21.03.2019: Dr. B.N. Mohanty, IFS, Director organised and celebrated Holi, a festival of Welfare at IPIRTI campus along with Dr. Manoj Kumar Dubey, Joint Director and other staff members.

Swachhata Drive
Dr. B.N. Mohanty, IFS, Director along with Scientists, Staff and Students of IPIRTI observed Swachhata Day by organizing Campus Cleanliness Drive inside the campus and facilities on last Friday of every month.

Audit
NABL audit of IPIRTI, Bengaluru
Desktop surveillance audit of NABL accreditation was successfully carried out during January 2019. All the relevant documents were submitted to NABL and continuation of accreditation was granted. BIS Audit of IPIRTI, Bengaluru.

Surprise audit was conducted on 28.09.2018 and continuation of recognition was granted by Bureau of Indian Standards (BIS).
Visit of Dignitaries

23.01.2019: Shri. R.K. Bhiani, Director, M/s. Mrudul Chemicals visited IPIRTI Field Station, Kolkata and had a technical discussion with Shri. S.C.Sahoo, Scientist.

05.02.2019: Mr. Aftab, Director, M/s. Ahemad Wood Craft, Bangladesh visited IPIRTI Field Station, Kolkata and had discussion with Shri. S.C.Sahoo, Scientist regarding factory visit to improve the plywood quality.

17.02.2019: Dr. Vipin Kumar Chawla, Scientist delivered a lecture on “Bamboo Composites – Quantitative & Qualitative testing” to 17 trainees from Kerala Forest Research Institute (KFRI) who visited IPIRTI, Bengaluru as a part of their Certificate Course on “Value Addition & Marketing of NTFP (Plant Origin) - Bamboo Craft under Green Skill Development Programme (GSDP) sponsored by MoEF&CC, Government of India.

28.02.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI addressed a study team of Six Officers led by Dr. K. Pachhunga, Vice Chairman, Bamboo Development committee along with Secretary of Horticulture, Director of Horticulture & other officials, Government of Mizoram who visited IPIRTI, Bengaluru to have better awareness and understanding about the different aspects of bamboo development.

08.03.2019: Dr. Manish Pande, Director & Head of Product Application Division (PAD), Quality Council of India visited IPIRTI and had an official discussion with Dr. B.N. Mohanty, IFS, Director and Shri. Uday D.N., Scientist, IPIRTI.

26.03.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI addressed a team of 36 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 South India Study Tour.

26.03.2019: Shri. R. Pandey, Director, M/s. S.S. Industry visited IPIRTI Field Station, Kolkata and had technical discussion with Shri. S.C.Sahoo regarding the problem faced during resin manufacturing.

27.03.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI addressed a team of 29 Forest Range Officer Trainees from Tamil Nadu Forest Academy, Coimbatore who visited IPIRTI along with a faculty member as a part of their 18 months’ induction training.
One Year Post-Graduate Diploma Course on Wood and Panel Products Technology:
29 students of 30th Batch of One-Year Post Graduate Diploma Course in Wood and Panel Products Technology (WPPT) are undergoing training.

Short Term Vocational Training Course
02.01.2019: As a part of One Month Training course on “Plywood Manufacturing Technology” conducted for 6 candidates during 28.11-31.12.2018 at IPIRTI Field Station, Kolkata, a visit was organized to M/s. Green Ply Industries, Kolkata.

03-09.02.2019: Dr. Pradeep Kumar Kushwaha, Scientist conducted Seven days primary demonstration-cum-training on “Bamboo Processing Machines” for 142 visitors during World Bamboo Workshop in Imphal, Manipur.

25.03.2019-26.04.2019: One Month Training course on “Plywood Manufacturing Technology” conducted for 03 candidates at IPIRTI Field Station, Kolkata.

26-30.03.2019: Dr. Pradeep Kumar Kushwaha, Scientist conducted four days Short Term training for 13 Artisans/staff members on primary bamboo processing and bamboo round stick making and also for maintenance of all the related machines at CFC Sawombung, Imphal and 4 among these were also trained as trainer.

Training Undertaken
21-25.01.2019: Dr. B.N. Mohanty, IFS, Director, IPIRTI attended the Five-Days Training Programme for Indian Forest Service Officers nominated by MoEF&CC on “Disaster Management & Risk Reduction Initiatives through Forestry and Others” organized at Shri. Mata Vaishno Devi University Campus (SMVDU), Jammu & Kashmir.

Special Training Course
02-04.01.2019: Ms. D. Sujatha and Dr. Mamatha. B.S., Scientists conducted special training programme for 2 candidates on “Determination of formaldehyde content by perforated/ extraction method and chamber method” sponsored by M/s. Rushil Decor Ltd.
## Short Term Training Courses for May - Dec, 2019 at Bengaluru

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Title of the Training Course</th>
<th>Duration</th>
<th>Date</th>
<th>Fees*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Estimation Of Preservative Chemicals content In Wood/Plywood</td>
<td>5 days</td>
<td>May 13-17</td>
<td>18000</td>
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<td>2.</td>
<td>Peeling &amp; Knife Grinding</td>
<td>3 days</td>
<td>May 21-23</td>
<td>12000</td>
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<td>3.</td>
<td>Wood Seasoning</td>
<td>3 days</td>
<td>May 28-30</td>
<td>12000</td>
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<td>4.</td>
<td>Testing Of Flush Door And Block Board As Per IS:2202 And IS:1659</td>
<td>5 days</td>
<td>Jun 10-14</td>
<td>24000</td>
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<tr>
<td>5.</td>
<td>Plywood Manufacturing-I (Log Storage, Centering, Peeling, Clipping, Drying, Knife Grinding)</td>
<td>5 days</td>
<td>Jul 08-12</td>
<td>18000</td>
</tr>
<tr>
<td>6.</td>
<td>Plywood Manufacturing-II (Adhesives For Plywood And Plywood Manufacturing-Resin Preparation, Gluing, Hot Pressing)</td>
<td>5 days</td>
<td>Jul 15-19</td>
<td>18000</td>
</tr>
<tr>
<td>7.</td>
<td>Testing Of Plywood And Block Board As Per IS:303, IS:710, IS:1328, IS:4990 And IS:1659</td>
<td>5 days</td>
<td>Jul 22-26</td>
<td>24000</td>
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<tr>
<td>8.</td>
<td>Preliminary Bamboo Processing and Bamboo preservations</td>
<td>1 day</td>
<td>Aug 06-06</td>
<td>7200</td>
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<td>9.</td>
<td>Bamboo Composites Technology (Mat &amp; Strip Based Products)</td>
<td>3 days</td>
<td>Aug 07-09</td>
<td>12000</td>
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<td>10.</td>
<td>Low Cost Phenolic Resins Using Renewable Bio Materials As Replacement For Phenol</td>
<td>5 days</td>
<td>Aug 26-30</td>
<td>18000</td>
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<td>11.</td>
<td>Low Formaldehyde Emission Adhesives For Plywood And Particle Board</td>
<td>5 days</td>
<td>Sep 16-20</td>
<td>18000</td>
</tr>
<tr>
<td>12.</td>
<td>Defects And Remedial Measures In Plywood Manufacture</td>
<td>5 days</td>
<td>Dec 23-27</td>
<td>18000</td>
</tr>
<tr>
<td>13.</td>
<td>Testing Of Plywood And Block Board As Per IS:303, IS:710, IS:1328, IS:4990 And IS:1659</td>
<td>5 days</td>
<td>Dec 02-06</td>
<td>24000</td>
</tr>
</tbody>
</table>

** Programme Coordinator: Dr. V K Upadhyay, Head, IT & SORIT (upadhyay@ipirti.gov.in). You can apply online by filling and submitting the Registration Form (PDF)/Registration Form (doc). Registration has to be done 10 days before the date of commencement of the course by remitting prescribed course fee. Fees payable to the organization may be sent by crossed Demand Draft in favour of Director, IPIRTI, Bengaluru and sent by post to Post Bag No.2273, Tumkur Road, Yeshwanthpur PO, Bengaluru - 560 022.  
* 18% GST
**SHORT TERM TRAINING COURSES FOR MAY - DEC, 2019 AT KOLKATA**

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<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Particle Board Manufacturing</td>
<td>5 days</td>
<td>May 20-24</td>
<td>18000</td>
</tr>
<tr>
<td>2.</td>
<td>One Month Training Course on “Plywood Manufacturing Technology”</td>
<td>1 Month</td>
<td>June 03-04 Jul</td>
<td>24000</td>
</tr>
<tr>
<td>3.</td>
<td>Block Board &amp; Flush Door Manufacturing</td>
<td>5 days</td>
<td>July 22-26</td>
<td>18000</td>
</tr>
<tr>
<td>4.</td>
<td>Low Formaldehyde emission adhesives for plywood and particle board</td>
<td>3 days</td>
<td>Aug 21-23</td>
<td>12000</td>
</tr>
<tr>
<td>5.</td>
<td>Retention of Preservative Chemical</td>
<td>5 days</td>
<td>Sep 23-27</td>
<td>18000</td>
</tr>
<tr>
<td>6.</td>
<td>Testing of Plywood, Block Board, Flush Door</td>
<td>5 days</td>
<td>Oct 21-25</td>
<td>18000</td>
</tr>
<tr>
<td>7.</td>
<td>One Month Training Course on “Plywood Manufacturing Technology”</td>
<td>1 Month</td>
<td>Nov 01-30</td>
<td>24000</td>
</tr>
<tr>
<td>8.</td>
<td>Low Cost and Special Resin For Manufacture Of Plywood</td>
<td>5 days</td>
<td>Nov 18-22</td>
<td>18000</td>
</tr>
<tr>
<td>9.</td>
<td>Preliminary Bamboo Processing</td>
<td>3 days</td>
<td>Nov 27-29</td>
<td>12000</td>
</tr>
<tr>
<td>10.</td>
<td>Plywood and Adhesive manufacturing</td>
<td>3 days</td>
<td>Dec 18-20</td>
<td>12000</td>
</tr>
</tbody>
</table>

**Programme Coordinator:** Mr. Amitava Sil, IPIRTI Field Station Kolkata, 2/2 Biren Roy Road (West), Sarsuna, Kolkata-61, Tel: Fax: 033-24983120, Mob: 09874219758 (ipirtikolkata@ipirti.gov.in). Registration has to be done 10 days before the date of commencement of the course by remitting prescribed course fee. Fees payable to the organization may be sent by crossed Demand Draft in favour of Director, Indian Plywood Industries Research & Training Institute. You can apply online by filing and submitting the Registration Form. *18% GST*

**SHORT TERM TRAINING COURSES FOR MAY - DEC, 2019 AT MOHALI**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Title of the Training Course</th>
<th>Duration</th>
<th>Date</th>
<th>Fees*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Testing of Plywood As Per I:S 303, 1328, 710 &amp; 4990</td>
<td>5 days</td>
<td>May 13-17</td>
<td>18000</td>
</tr>
<tr>
<td>2.</td>
<td>Testing Of Block board And Flush Door As Per IS:1659 &amp; IS:2202 (Part - I)</td>
<td>5 days</td>
<td>June 10-14</td>
<td>24000</td>
</tr>
</tbody>
</table>
3. Testing Of Fire Retardant Plywood As Per IS: 5509
   2days    July 09-10    18000
4. Testing Of Plywood As Per I:S 303, 1328, 710 & 4990
   5 days   Aug 26-30    12000
5. Analysis of Raw Material (Phenol & Formalin)
   3 days   Sept.04-06    12000
6. Testing Of Plywood As Per I:S 303, 1328, 710 & 4990
   5 days   Oct. 21-25    14400
7. Analysis of Raw Material and Resin Manufacturing (PF & UF)
   5 days   Nov. 04-08    18000
8. Retention of Preservative Chemical
   5 days   Dec 25-29    14400

** Lodging and Boarding are not included and have to be arranged by the trainees.
Programme Coordinator: Dr. Ranjana Yadav (ranjana@ipirti.gov.in) IPIRTI Centre (MoEF&CC, Govt of India) B-65,
Phase -7, Industrial Area, Mohali-160055, Punjab. Tele: 0172-5095875. Registration has to be done 10 days before the
date of commencement of the course by remitting prescribed course fee. Fees payable to the organization may be sent
by crossed Demand Draft in favour of Director, IPIRTI, Bengaluru. You can apply online by filing and submitting the
Registration Form.
* 18% GST

**SUPERANNUATION**

Smt. Ravikala U. Kamath, Scientist - D (Library in-Charge, SORIT) and Editor of IPIRTI NEWS retired on 31st December, 2018. The institute acknowledges the services rendered by her and wishes her a Prosperous and Healthy retired life.