From the Director’s Desk

Dear Readers,

"WISHING YOU ALL A VERY HAPPY & PROSPEROUS NEW YEAR 2015"

Dr. B. N. Mohanty, IFS

FIRE RETARDANT MATERIALS AND HIGH RISE BUILDINGS

With the increase in urbanization and lifestyle changes, there is a mushrooming growth of high rise buildings. The skyscrapers are potential sites of mass casualties in case of fire due to heat, noxious fumes and other gases. Fire retardant materials in the form of panel products, doors and windows play a vital role in saving life and property.

A fire retardant substance reduces flammability of material or delays their combustion. Fire Retardant panel products are treated with special fire retardant chemicals which induce required properties as low inflammability, less tendency of ignition etc. Chemicals such as Di-ammonium Hydrogen Phosphate, Zinc Borate, Boric acid, Borax, Tricresyl phosphate, Mono Ammonium phosphate etc. are used
RESEARCH & DEVELOPMENT

Suitability of Plantation Timber *Melia Dubia* for Particle Board Manufacturing

A study was taken up to evaluate a technical feasibility of making three layered particle board from *Melia dubia* by Shri. V. Prakash, Scientist and his team at IPIRTI, Bangalore. *Melia Dubia* is one of the most promoted plantation species for wood and wood based panel industry in Southern India. The farmers / growers have shown lot of interest in taking up the *Melia dubia* plantations. Particle boards from *Melia dubia* was produced with urea formaldehyde resin of various formulations employing hot pressing conditions as required for each resin formulation. The panels made to make fire retardant plywood. The usage of fireproofing chemicals not only retards fire but also gives the panel products better fire proofing qualities such as lesser tendency of ignition, slow burning, low flammability, lesser smoke generation, higher flame penetration time etc. It is commonly used in High Rise Buildings, where the risk of fire has to be reduced such as for making the interior woodwork in the kitchens, restaurants, theatre halls, compartments of trains and any other such places where the risk and spread of fire has to be reduced. The Indian Standards for manufacture of fire resistant plywood are specified in IS:5509.

Whereas, a fire check door is a door with a fire-resistance rating used as part of a passive fire protection system to reduce the spread of fire or smoke between compartments and to enable safe egress from a building or structure. Fire doors may be made of a combination of materials such as timber, steel, gypsum (as an endothermic fill), vermiculite-boards, glass sections etc. The door frames include the fire or smoke seals, door hardware and the structure that holds the fire door assembly in place. Fire rating has to be specified prior to the installation of a timber door in any high-rise buildings, shopping complexes, hotels and condominiums. Fire doors are “rated” by time (in minutes or hours) that a door can withstand when exposed to fire test conditions.

Keeping future requirements of building bye-laws in our country and to facilitate testing of fire check doors, the facility has been established at IPIRTI for testing fire performance of full size door/shutters as per National/ International Standards such as BS 476 (part 20 and 22), IS 3614 (part 2), ISO 3008 and BS EN 1634-1 using latest technologies and instrumentation comparable with best in the world. Also testing facilities is established at IPIRTI for testing fire retardant plywood, smoke density, toxicity and Limiting oxygen index of panel products as per National/ International Standards.

Dr. B. N. Mohanty, IFS
were subjected to evaluation for physical and mechanical properties as per Indian Standard (IS: 3087) 2005. It was found that the process parameters for manufacturing particle boards from *Melia dubia* was almost same as that of the other species except that during drying, additional care has to be taken to avoid the material from picking up the moisture to minimize the blister formation during hot pressing. From this study, it was found that the particle boards made from *Melia dubia* meets the requirements as prescribed in IS:3087-2005- “Specifications for particle boards of wood and other lignocellulosics material (medium density) for general purpose for grade II medium density particle boards.”

**DIELECTRIC AND ELECTRICAL PROPERTIES OF WOOD AND BAMBOO BASED COMPOSITE PRODUCTS**

This study presents the dielectric and conductivity properties as function of temperature and frequency of wood and bamboo based composites. These properties were measured by an open-ended coaxial probe at frequency range between 100 kHz to 100MHz, temperature from 30°C to 200°C which is fully computer interfaced. Dr. K.Ch. Varada Rajulu, Scientist, IPIRTI, Bangalore and his team observed that the dielectric constant (\(\varepsilon'\)) and dielectric loss factor (\(\varepsilon''\)) increase with increasing temperature and decrease with increasing frequency. At low temperature region, the conductivity depends significantly on the frequency. However, with the increase in temperature dielectric relaxation takes place and the dependency of the conductivity on frequency get reduced. The patterns of variation were established for the studied specimens and discrepancies were discussed.

**RESEARCH REPORTS PUBLISHED**

1. Bio-efficacy study of Colemanite against wood destroying organism (IPIRTI RR. No.171)
2. Evaluation of synergistic effect of metal chelators with wood preservative chemicals in wood preservation. (IPIRTI RR. No.172)
3. Effect of Cassava flour as an extender in UF and PF resin on the bond quality of plywood (IPIRTI RR. No.173)
4. Polyurethane based bio-adhesive for the manufacture of plywood (IPIRTI RR No.174)
5. Fatigue strength properties of structural panels (IPIRTI RR. No.175)
6. Review of method of testing fire resistance of plywood and optimization of test procedure (IPIRTI RR. No.176)
7. Evaluation of new Boron fixation system for wood preservation (IPIRTI RR. No.177)
8. Dielectrical and Electrical properties of wood and Bamboo based composite products (IPIRTI RR No.178)
9. Suitability of plantation timber *Melia dubia* for particle board manufacturing (IPIRTI RR. No.179)

(Copies of above mentioned reports (one each) have been already sent to the member firms of IPIRTI Society)
VISIT TO FACTORIES

30.10.2014: Shri. Uday D.N., Scientist visited M/s. KSFIC Ltd, Bangalore for discussion on Steam Boiler capacity and Installation location.

24-25.12.2014: Shri. Uday D.N., Scientist visited factories around Vadodara as technical expert along with the officials of M/s. Gujarat State Forest Development Corp. Ltd. as a part of Tender Scrutinizing Committee.


MEETINGS/SEMINARS/WORKSHOPS/CONFERENCE

14.10.2014: Dr. S.K. Nath, Joint Director, Ms. D. Sujatha, Shri. Anand Nandanwar and Dr. Ranjana Yadav scientists attended 7th Steering Committee Meeting of IPIRTI Centre, Mohali at Chandigarh. Shri. Anand Nandanwar presented progress of IPIRTI centre at Steering Committee meeting.


28.10.2014: Dr. B.N. Mohanty, Director and Dr. S.K. Nath, Joint Director attended the “Stake Holders Meet” at IWST, Bangalore to interact with various stake holders related to plantation and wood working.

10-13.11.2014: Dr. B.N. Mohanty, Director, IPIRTI, Bangalore attended 19th Asia Pacific Association of Forestry Research Institutions (APAFRI) Executive Meeting as an Executive Committee Member and also participated in International Conference on Mangroves at Kuala Lumpur, Malaysia.

12-26.11.2014: Shri. Amitava Sil, Officer In-Charge of IPIRTI Field Station, Kolkata participated in Utkal Banga Ustav-2014 at Chandeswar Mhabidyalaya Campus, Sahabajipur, Balasore, Odisha as an exhibitor for the products developed by IPIRTI.
18-19.11.2014: Dr. S.K. Nath, Joint Director attended seminar on “Developing Bamboo based Livelihood and Enterprise Opportunities” organized by Gujarat Forest Department and delivered a lecture on the same subject.

21-22.11.2014: Dr. B.N. Mohanty, Director attended and presented a paper on “Bamboo Composites” at International Seminar on “Wood is Good: Current Trends and Future Prospects in Wood Utilization” held at JN Tata Auditorium, Indian Institute of Science Campus, Bangalore organized by IWST, Bangalore. Also Dr. S.K. Nath presented a paper on “Use Wood-Combat Climate Change” and Shri. Uday D.N. made presentation on “Study on Utilisation of Plantation grown timber Species Grevillea robusta (Silver Oak) for Medium Density Fibre board (MDF)”.

25-26.11.2014: Dr. B.N. Mohanty, Director, IPIRTI chaired a Technical Session in National Seminar on “Role of Technology in Enhancing Bamboo Use” organised at the Forest Research Institute, Dehradun. Dr. S.K. Nath, Joint Director presented a paper on “Bamboo Composite Initiative-Opportunities and Challenges”.

28.11.2014: Dr. B.N. Mohanty, Director and Dr. S.K. Nath, Joint Director, IPIRTI Bangalore attended workshop on “Bamboo Composites” conducted by National Bamboo Mission, Madhya Pradesh at Dilli Haat, Janakpuri, New Delhi. Dr. S.K. Nath presented a paper on “Bamboo Composite Technology”.

28-30.11.2014: Dr. Pradeep K. Kushwaha, Scientist, IPIRTI Bangalore and Shri. Ramesh Karri, JTA, IPIRTI Center, Mohali attended the National Bamboo Expo at New Delhi.

04.12.2014: Dr. S. K. Nath, Joint Director, Ms. D. Sujatha, Shri. Anand Nandanwar and Shri. Narsimhamurthy Scientists attended CED:20 meeting of BIS at IPIRTI Bangalore chaired by Dr. B.N. Mohanty, Director, IPIRTI, Bangalore.

08-12.12.2014: Dr. Vipin Kumar Chawla, Scientist attended National Training Programme on “Entrepreneurship Development and Management, for Scientists & Technologists working in Govt. Sector”, sponsored by Department of Sci-
ence & Technology Govt. of India, New Delhi, organized by Entrepreneurship Department Institute of India (EDII) Ahmedabad.

17.12.2014: Dr. B.N. Mohanty, Director, IPIRTI, Bangalore took part in Research Advisory Group Meeting at IWST, Bangalore.


19.12.2014: Dr. B.N. Mohanty, Director, Dr. S. K. Nath, Joint Director, Ms. D. Sujatha and Shri. Uday D.N. Scientists participated in the Golden Jubilee Celebration and Industry meet at IPIRTI Field Station, Kolkata. Dr. S.K. Nath delivered a lecture on “Fifty years of IPIRTI Field Station, Kolkata”, Ms. D. Sujatha made a presentation on the “Changing Scenario of adhesives for the panel products” and Shri. Uday D.N., made presentation on “Processing of timber – Issues & Technological Solutions”.

24.12.2014: Shri. Amitava Sil, Officer In-Charge IPIRTI, Field Station Kolkata attended 8th Environment Partner Summit organized by Indian Chamber of Commerce (ICC), held at Hotel Taj Gateway, Kolkata. Shri. Amitava Sil gave a short presentation on “Bamboo Composite Housing System for Eco-Tourism and Bamboo Composites”.

24.12.2014: Shri. Uday D.N., Scientist attended Tender Scrutinizing Committee meeting held at Vadodra by Gujarat State Forest Development Corp Ltd as a Technical Expert.

27-30.12.2014: Dr. Ranjana Yadav, Officer In-Charge IPIRTI Centre, Mohali attended the conference on “CHEMCON 2014” and gave oral presentation on Evaluation of cassava flour as an extender for plywood adhesive.

DIGINITARIES VISIT:

11.11.2014: Shri. Rajesh Mundra, Director, M/s. ARCL visited IPIRTI Field Station, Kolkata and discussed regarding the sponsorship of the project.

12.12.2014: Scientists from BIS, Chandigarh visited IPIRTI Centre, Mohali to see the testing facility available in IPIRTI Centre Mohali.

15.12.2014: Shri. Ramesh Tiwari, Director, M/s. Stanely Chemicals visited IPIRTI Field Station, Kolkata for discussion regarding sponsorship of project on extender cum scavenger for plywood adhesive.
IPIRTI Field Station, Kolkata celebrated Golden Jubilee Year 2014

Golden Jubilee Year of IPIRTI Field Station at Kolkata was celebrated on 19th December 2014. Field Station Kolkata came in existence on 17th December, 1964 as Indian Plywood Industries Research Association (IPIRA).

To commemorate the Golden Jubilee Year IPIRTI Field Station Kolkata, an IPIRTI-Industry Meet was organized on 19th December 2014 at the Institute campus. During the inaugural session, the inaugural address was given by the Chief Guest Shri. Narendra Kumar Pandey, IFS, Addl. PCCF, HRD, Govt. of West Bengal. Shri. Sajjan Bhajanka, Chairman, M/s. Century Plyboards (India) Ltd. was invited as Guest of Honour.

Shri. Amitava Sil, Scientist/Officer-in-Charge made a short presentation on “Fifty Years Service of IPIRTI Field Station Kolkata-Important Achievements”. Scientists Ms. Sujatha D., Shri. Uday D.N. and Shri. S.C. Sahoo gave presentations on the recent research work carried out by IPIRTI, Field Station, Kolkata.

IPIRTI Field Station, Kolkata has made a tremendous progress by providing high standards of Testing, Training, Extension and Research activities.

The IPIRTI-Industry Meet was a grand success and nearly 60 participants from various industries and research institutes attended the meet.
7th STEERING COMMITTEE MEETING OF IPIRTI CENTRE MOHALI

Highlights of the Meeting:

7th Steering Committee meeting which was held on 14th October 2014 at Department of Industries and Commerce (DIC), Chandigarh, Punjab Meeting was chaired by Shri. Raminder Singh, Director cum Secretary, I&C, Department of Industries & Commerce (DIC).

Dr. S.K. Nath, joint Director, IPIRTI, Vice Chairman of the Steering Committee extended a hearty welcome to Shri. Raminder Singh, Chairman and all the members of State Govt., Industries and IPIRTI. He requested Shri. Anand Nandanwar, Scientist, IPIRTI, Bangalore to brief the progress of IPIRTI Centre Mohali. Shri. Anand Nandanwar made a power point presentation on the progress of work since last steering committee meeting.

With the permission of the Chair, the Agenda items were taken up for discussion.

NIPMA president Shri. Naresh Tewari suggested the inclusion of Shri. Varun Jindal, M/s. Haryana Industry, Yamuna Nagar, Shri. Ajai Oberai, M/s. United Timber works, Yamuna Nagar and Shri. Manoj Gwari, Dehradun, Uttarakhand as members of the Steering Committee. The committee accepted for the inclusion of the same.

Dr. S. K. Nath requested for the additional space in the existing building of IPIRTI Centre, Mohali for the expansion of testing and training activities. Shri. Raminder Singh, Director I & C, DIC agreed to give additional space in the existing building of IPIRTI Centre, Mohali.

NIPMA president Shri. Naresh Tewari agreed for construction and renovation work.

Dr. S. K. Nath informed the Chairman that by further strengthening the training and testing activities at IPIRTI Centre, Mohali, the Centre can be targeted to achieve self-sufficiency. He stressed that all these activities can be made successful only with the cooperation from Government of Punjab and the industries located in these regions.

Chairman assured that Department of Industries and Commerce, Punjab shall extend full co-operation to the Institute. Finally the meeting ended with vote of thanks.
A Press & Media Meet was arranged at IPIRTI, Bangalore on 30.10.2014. Dr. B.N. Mohanty, IFS, Director, IPIRTI Bangalore addressed the Press & Media and briefed about the Vision, Mandate and achievements of IPIRTI.

Dr. Mohanty, IFS, Director, IPIRTI said that the technologies developed in the Institute are environmental friendly, cost effective and socially acceptable. Some of the important themes identified by the Institute are:

i. Utilization of renewable material for making panel products.
ii. Energy Auditing, Carbon Footprint and Life Cycle Analysis Study on Wood and Bamboo Based Panel Products.
iii. Development of Knock-Down Bamboo Housing for Natural Disaster Regions.
iv. Eco-Friendly Preservative for Panel Products-alternative to the existing practice.
vi. Development of Fire Retardant Composites/Panel Products.

He also mentioned that the Training is one of the most important activities of this Institute from its very inception and so far around 550 trainees have been awarded Post Graduate Diploma in Wood and Panel Products Technology (WPPT) –with special reference to wood, plywood, allied products and adhesives. Newer short term courses of about one week duration on processing of bamboo, product development and bamboo based housings have been introduced as tailor-made to the changed requirements and prevailing scenario in the country. Most of the Post Graduate Diploma holders from IPIRTI are engaged in different plywood, panel and wood based manufacturing units all over the country.

Dr. Mohanty, IFS, Director also informed that all the 25 trainees of Silver Jubilee Batch (2014) have been successfully placed in prestigious Wood and Panel Industries through Campus Interview.
One Year Post-Graduate Diploma Course on Wood and Panel Products Technology

25th Batch of one year Post-Graduate Diploma Course on Wood and Panel Products Technology was conducted wherein 25 candidates completed the course successfully and got 100% placement in Plywood and other Wood based industries through Campus Interview.

Valedictory Function

Valedictory address was given by Shri. Kanwerpal, IFS, Managing Director, M/s. Karnataka State Forest Industries Corporation Limited, Bangalore. Medals & Diploma Certificates were awarded to successful trainees by the Chief Guest Shri. Kanwerpal, IFS and the Director, Dr. B. N. Mohanty, IFS on 30.10.2014.

Celebration of Silver Jubilee Year (2014) of PGD course at IPIRTI, Bangalore

IPIRTI celebrated Silver Jubilee Year (2014) of PGD course at IPIRTI, Bangalore on 30.10.2014.
Short Term Training Courses:
A Short term training course on “Low Cost and Special Resin for manufacture of plywood” was conducted for 6 candidates during 24th-28th November 2014 at IPIRTI Field Station, Kolkata.

A Short term training course on “Testing of Plywood Block board and Flush Door” was conducted for 8 candidates during 22nd-26th December, 2014 at IPIRTI Field Station, Kolkata.

Special Training Course:
A Special training course on Plywood Manufacturing Technology-I and Plywood manufacturing Technology-II was conducted for 3 candidates at IPIRTI, Bangalore during 15th-19th December 2014 sponsored by M/s. Ganapati Plywoods, Nepal.

1. Memorandum of Understanding (MoU) was signed and exchanged between IP-IRTI and M/s. Indeutsch International, Noida on “Upgradation of the technology on the development of 50mm compregs using dyed veneers of plantation species (Densified Laminated Lumber) on commercial unit” on 02.12.2014.

2. CIBART (Centre for Indian Bamboo Resource & Technology), Vyara Dist, Tapi, Gujarat has signed MoU with IPIRTI for “Development of Vertical laminates for high end application products for housing application”. IPIRTI has already received 150 poles of 17 feet length bamboo from funding agency. Products development is under progress.

3. Shri Amit Juneja, Managing Director, M/s Vidhata Industries, Punjab signed MoU with IPIRTI for the detailed manufacturing technology for the manufacture of Fire Retardent Door for 30 minutes rating (Grade-C) by construction method. But Dr. Vipin Chawla and Dr. K. Ch. Varadarajulu, Scientists IPIRTI have developed the technique for the manufacture of Fire Retardant Door (FRD) by construction method for one hour rating and transferred the technology to M/s Vidhata Industries, Punjab.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title Of The Training Course</th>
<th>Duration</th>
<th>Date</th>
<th>Fee</th>
<th>Tax* (Rs.)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</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>Jan 19-23</td>
<td>10000</td>
<td>1236</td>
<td>11,236</td>
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<tr>
<td>2.</td>
<td>Resin Manufacturing</td>
<td>3 Days</td>
<td>Feb 04-06</td>
<td>5000</td>
<td>618</td>
<td>5,618</td>
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<tr>
<td>3.</td>
<td>Preservative Treatment Methods for Wood and Wood Based Panels</td>
<td>3 Days</td>
<td>Feb 25-27</td>
<td>5000</td>
<td>618</td>
<td>5,618</td>
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<td>4.</td>
<td>Analysis of Raw Materials for Resin Manufacture</td>
<td>3 Days</td>
<td>Mar 11-13</td>
<td>5000</td>
<td>618</td>
<td>5,618</td>
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<td>5.</td>
<td>Testing of Door Shutters as Per IS: 2202, IS:1003, IS: 4020</td>
<td>3 Days</td>
<td>Mar 18-20</td>
<td>7500</td>
<td>927</td>
<td>8,427</td>
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<td>6.</td>
<td>Estimation of Preservative Chemicals content In Wood/Plywood</td>
<td>5 Days</td>
<td>April 06-10</td>
<td>7500</td>
<td>927</td>
<td>8,427</td>
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<td>7.</td>
<td>Peeling &amp; Knife Grinding</td>
<td>3 Days</td>
<td>May 19-21</td>
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<td>618</td>
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<td>8.</td>
<td>Wood Seasoning</td>
<td>3 Days</td>
<td>May 27-29</td>
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<td>9.</td>
<td>Testing of Flush Door and Block Board as Per IS:2202 And IS:1659</td>
<td>5 Days</td>
<td>June 08-12</td>
<td>10000</td>
<td>1236</td>
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<td>10.</td>
<td>Plywood Manufacturing-I ( Log Storage, Centering, Peeling, Clipping, Drying, Knife Grinding)</td>
<td>5 Days</td>
<td>July 06-10</td>
<td>7500</td>
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<td>8,427</td>
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<td>11.</td>
<td>Plywood Manufacturing- II ( Adhesives for Plywood and Plywood Manufacturing-Resin Preparation, Gluing, Hot Pressing)</td>
<td>5 Days</td>
<td>July 20-24</td>
<td>7500</td>
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<td>12.</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>Aug 17-21</td>
<td>10000</td>
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<td>14.</td>
<td>Low Cost Phenolic Resins Using Renewable Bio-Materials as Replacement for Phenol</td>
<td>5 Days</td>
<td>Sep 07-11</td>
<td>7500</td>
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<td>15.</td>
<td>Low Formaldehyde Emission Adhesives for Plywood and Particle Board</td>
<td>5 Days</td>
<td>Oct 05-09</td>
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<td>16.</td>
<td>Defects and Remedial Measures In Plywood Manufacture</td>
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<td>Nov 16-20</td>
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<td>Dec 14-18</td>
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<td>1236</td>
<td>11,236</td>
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</tbody>
</table>

* 12.36% Service Tax

** 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, Bangalore and sent by post to Post Bag No.2273, Tumkur Road, Yeshwanthpur PO, Bangalore - 560 022.
## Short Term Training Courses for the Year 2015 at Kolkata

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Title of the Training Course</th>
<th>Duration</th>
<th>Date</th>
<th>Fees</th>
<th>S.Tax* (Rs.)</th>
<th>Total (Rs.)</th>
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<tbody>
<tr>
<td>1.</td>
<td>One Month Training Course on “Plywood Manufacturing Technology”</td>
<td>01 Month</td>
<td>19 Jan - 18 Feb</td>
<td>10,000</td>
<td>1,236</td>
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<td>2.</td>
<td>Preliminary Bamboo Processing</td>
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<td>18- 20 Feb</td>
<td>5000</td>
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<td>3.</td>
<td>Testing of Plywood, Block Board, Flush Door</td>
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<td>927</td>
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<td>4.</td>
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<td>25 – 27 Mar</td>
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<td>5.</td>
<td>Particle Board Manufacturing</td>
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<td>20 – 24 April</td>
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<td>927</td>
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<td>6.</td>
<td>Block Board &amp; Flush Door Manufacturing</td>
<td>5 days</td>
<td>25 – 29 May</td>
<td>7,500</td>
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<td>7.</td>
<td>Low Formaldehyde emission adhesives for plywood and particle board</td>
<td>3 days</td>
<td>24 – 26 Jun</td>
<td>5,000</td>
<td>618</td>
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<td>8.</td>
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<td>24- 28 Aug.</td>
<td>7,500</td>
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<td>10.</td>
<td>One Month Training Course on “Plywood Manufacturing Technology”</td>
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<td>01- 30 Sep</td>
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<td>12.</td>
<td>Low Cost and Special Resin for manufacture of Plywood</td>
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<td>13.</td>
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<td>16- 18 Dec</td>
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<td>14.</td>
<td>Plywood and Adhesive manufacturing</td>
<td>3 days</td>
<td>28- 30 Dec</td>
<td>5,000</td>
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<td>5,618</td>
</tr>
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</table>

*12.36% Service Tax

Programme Coordinator: Mr. Amitava Sil, IPRTI Field Station Kolkata, 2/2 Biren Roy Road (West), Sarsuna, Kolkata-61, Tele Fax:033-24983120, Mob:09874219758 (ipirti@vsnl.net). 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.
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Title of the Training Course</th>
<th>Duration</th>
<th>Date</th>
<th>Fees</th>
<th>S.Tax* (Rs.)</th>
<th>Total (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Testing Of Plywood As Per IS: 303, 1328, 710 &amp; 4990</td>
<td>5 days</td>
<td>Feb 23-27</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
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<td>2.</td>
<td>Testing Of Fire Retardant Plywood As Per IS: 5509</td>
<td>2 days</td>
<td>March 25-26</td>
<td>2000</td>
<td>247</td>
<td>2247</td>
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<td>3.</td>
<td>Testing Of Block board And Flush Door As Per IS:1659 &amp; IS: 2202 (Part - I)</td>
<td>5 days</td>
<td>April 20-24</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
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<tr>
<td>4.</td>
<td>Analysis of Raw Material for Resin Manufacturing</td>
<td>3 days</td>
<td>May 13-15</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
</tr>
<tr>
<td>5.</td>
<td>Resin Manufacturing Conventional PF &amp; UF Resin</td>
<td>3 days</td>
<td>June 08-10</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
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<td>6.</td>
<td>Retention Of Preservative Chemical</td>
<td>5 days</td>
<td>July 20-24</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
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<td>7.</td>
<td>Testing Of Plywood As Per IS: 303, 1328, 710 &amp; 4990</td>
<td>5 days</td>
<td>August 17-21</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
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<td>8.</td>
<td>Testing Of Block board And Flush Door As Per IS:1659 &amp; IS: 2202 (Part - I)</td>
<td>5 days</td>
<td>Sept.07-11</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
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<tr>
<td>9.</td>
<td>Analysis of Raw Material for Resin Manufacturing</td>
<td>5 days</td>
<td>Oct. 05-09</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
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<td>10.</td>
<td>Testing Of Plywood As Per IS 303, 1328, 710 &amp; 4990</td>
<td>5 days</td>
<td>Nov. 02-06</td>
<td>5000</td>
<td>618</td>
<td>5618</td>
</tr>
</tbody>
</table>

* 12.36% Service Tax
** 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. 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, Bangalore. You can apply online by filing and submitting the Registration Form.
GLOBAL NEWS

GLOBAL WOOD-PLASTIC COMPOSITES MARKET (TYPE, APPLICATIONS) FORECASTS TO 2019 IN NEW RESEARCH REPORT

RnRMarketResearch.com adds Wood Plastic Composite Market by type (polyethylene, polyvinylchloride, propylene and others), applications (building & construction products, automotive components, industrial & consumer goods and others) and region - trends & forecasts (2014 - 2019) research report to its store.

The wood plastic composite market is projected to grow from $ 2579.90 million in 2014 to $4,601.7 million by 2019, with a CAGR of 12.2% between 2014 and 2019. Polyethylene is the single-largest segment, holding 56.6% share of the global wood plastic composite market in 2014 and is projected to grow with a CAGR of 12.0% between 2014 and 2019. North America is the largest market of polyethylene and Asia stood second in 2014. The wood plastic composite market consists of four application; they are building and construction products, automotive components, industrial & consumer goods and others. The demand for building and construction segment accounted for the largest share in 2014, at $2,579.9 million, and it is projected to reach $4,601.7 million by 2019. North America was the largest consumer of building and construction products in 2014, followed by the Asian region.

In this research, global wood-plastic composites market is segmented by type, by application, and by geography. The market size of each region such as North America, Western Europe, Asia, and Rest of the World (RoW) is projected in the report. The key countries such as U.S., Germany, China, and Brazil are covered and their market size is forecasted along with their growth rates. The wood plastic composite market is segmented on the basis of application that includes building and construction products, automotive components, industrial & consumer goods, and others. The demand for wood plastic composite for building and construction products accounted for the largest share in 2014.

Wood plastic composite are manufactured with major five processes across the globe which includes extrusion, injection, co-extrusion, foaming and rot molding. Leading companies in the wood plastic composite are continuously seeking new technologies for manufacturing wood plastic composite with high efficiency. The leading players of this market such as Fiberon LLC (U.S.), TimberTech (U.S.), Tamko building products (U.S.) and others are profiled in the report. The key players in this market have adopted various strategies to strengthen the market opportunities and increase their market shares. Partnerships, agreements, expansions, joint ventures, and acquisitions are some of the main strategies adopted by the market players to achieve growth in the wood-plastic composites market. Partnerships, agreements and collaborations accounted for 39% of all the growth strategies adopted by the players during the review period of 2009 to 2014.


Source: DALLAS, January 15, 2015 /PRNewswire/ --
FIRE DOOR TESTING AT IPIRTI

With the increasing building activities and stringent building regulations, the behaviour of building components from various panel products or in combination with other materials against fire and to ensure occupants' safety is the need of the hour. With the recent regulations relating to buildings in India, there is also a market for fire retardant wooden doors in housing applications. There are huge opportunities for developers and architects to add value to their properties through these fire retardant doors. Occupants of buildings will be the major beneficiaries as it gives them additional peace of mind and protection from fire without compromising the use of green building materials viz. wood and panel products. Keeping future requirements of building bye-laws in our country and to facilitate testing of fire check doors, the facility has been established at IPIRTI for testing fire performance of full size door/shutters as per national/international standards such as BS 476 (part 20 and 22), IS 3614 (part 2), ISO 3008:2007 and BS EN 1634-1:2000 using latest technologies and instrumentation comparable with the best in the world.

Fire doors are “rated” by time (in minutes or hours) that a door can withstand exposure to fire test conditions, and the failure criteria is assessed by Integrity & Insulation. Hourly ratings include 120 minutes, 90 minutes, 60 minutes and 30 minutes with the maximum rating required of any swinging type door being three hours.

Salient features of the fire door testing setup are:-

- Vertical front open furnace structure with impinged burners having refractory bricks & ceramic wool blanket for best heat insulation
- Computer programmable automated LPG burners with computer-controlled LPG and air flow
- Hot gas exhaust with automated damper system
- Single gantry EOT crane with electric hoist
- Test frame to hold door under test with trolley and roller skid
- K-Type thermocouple assembly with data logger facility
- PC based multi-channel data logger and software controlled test.

The system is equipped with fire-fighting and safety equipment.

For further details please contact:
Indian Plywood Industries Research & Training Institute
(Autonomous body of Ministry of Environment, Forest & Climate Change, Govt. of India)
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