



Central Pulp & Paper Research Institute

केन्द्रीय लुग्दी एवं कागज़ अनुसंधान संस्थान, सहारनपुर

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MANAGEMENT NEWS

Meeting of Reconstituted Development Council for Printing including Litho Printing Industry

A meeting of **Reconstituted Development Council for Printing Industry including Litho Printing** was held on October 31, 2012 at Udyog Bhawan, New Delhi. The meeting was chaired by Smt. Sunita Yadav, IES, Deputy Secretary, DIPP, Ministry of Commerce & Industry, Government of India. The meeting was attended by Shri Govind Bhargava, President All India Federation of Master Printers (AIFMP), Dr. R. M. Mathur, Member Secretary & Director CPPRI, other members of AIFMP, Industry personnel and officials of CPPRI.

Various issues related to development and growth of printing industry were taken up for discussion during the meeting.

RESEARCH AND DEVELOPMENT ACTIVITIES

RAC Projects

Raw Material and Product Development

New Approaches in Processing & Papermaking of Recycled Fibre to Improve the Quality of End Product

Literature survey is being conducted on application of electrokinetics on retention of wet and dry strength additives to improve the strength of packaging grade paper produced from recycled fibre.

Energy Conservation and Environmental Management

Incremental Capacity Enhancement and Improved Energy Efficiency of Conventional Chemical Recovery System in Wood and Non - wood based Paper Mills

Project activities were initiated on marginal expansion of existing chemical recovery system with minimum capital cost involvement. Studies have been initiated in agro and wood based mills.

Implementation of Enzyme Application in Pulp and Paper industry

The project objective is to implement the enzyme

applications in pulp & paper industry to address the issues related to biofuels from waste biomass, energy conservation, quality up - gradation and environmental improvement.

- **Bioethanol Production from Lignocellulosic Biomass, Bagasse Pith and Rice Straw**

Bagasse was collected from bagasse based mill and was depithed as per CPPRI patented method. The studies were initiated in fractionation of bagasse pith into three major components - xylose from hemicellulose, ethanol from cellulose and energy from lignin.

- **Development of Indigenous Capabilities for Production of Various Enzymes and Implementation of Biorefining and Biodeinking in Indian Paper Industry**

Collection of soil samples and other inhabitants for isolation of microorganisms is under progress. Biorefining experiments were initiated with identified refining enzymes on bamboo pulps.

- **Bioremediation of Paper Mill Effluent**

Various samples of soil, effluent and sludge were collected from different paper mills. Experiments on isolation of effective microbes for effluent treatment from different sources were continued using dilution technique, direct plating and enrichment techniques.

Cess Funded Projects

An Integrated Approach for Utilization of Bagasse Pith for Production of Bio-ethanol and Value Added Lignin Products (CPPRI/IIP, Dehradun)

The aim of the project is efficient utilization of bagasse pith through development of a process for production of bio-ethanol and value added chemicals.

During the period, experiments were continued on enzymatic saccharification of the pre-treated bagasse pith to improve the cellulose conversion efficiency by varying the process parameters and different commercial cellulose enzymes. Studies were also concentrated on

recovery of the enzyme from the enzyme hydrolysates to improve cost economics of the developed process. Further, the studies were extended for utilization of lignin rich biomass through gasification route. A joint patent of the developed process was filed by CPPRI and IIP-CSIR entitled "Process for production of renewable fuel and chemicals in a biorefinery from bagasse pith" Indian patent application no. 3444/DEL/2012.

Development of Environmentally Safe Biological Process to Bleach the Bamboo & Wood Pulp using Potential Bacteria (CPPRI/IGIB, N. Delhi)

The aim of the project is to develop an environmentally friendly bleaching process for biobleaching of wood pulps using ligninolytic bacteria for the reduction in the demand of chlorinated bleaching chemicals and improvement in pulp quality. Studies were conducted on pulp treatment with both developed bacteria and extracted enzymes. After treatment pulps were subjected to bleaching by DEpD sequences, studies are continued.

Fibre Modification with Enzymes (CPPRI/TCIRD/IPMA)

The objective of the project is development of enzyme refining technology for recycled pulps to improve the pulp quality, drainability and to reduce the refining energy. Studies on enzymatic refining of recycled pulp (OCC and NDLKC) conducted. Two commercial cellulase enzymes were found promising and their use offers significant advantage over conventional chemical process. Enzyme treatment showed benefits like 2-4% improvement in yield, improved strength properties in respect of tensile index by 3-5% , in burst index by, 3.0 % and in porosity by 12 -20% along with reduction in fines content & better drainability. Further reduction in pollution loads of colour (80-90 %) & COD (50-60%) were observed in those pulp effluents where enzyme was added during cooking by completely eliminating the use of cooking chemicals.

Pilot Scale Studies on Efficient Depithing of Bagasse: A Process Developed by CPPRI

This project has been approved by Cess committee recently and activities have been initiated to depith bagasse to a level with pith content below 6%.

Continuing Education (Training Programme) for Technical Personnel in Pulp and Paper Industry (CPPRI)

The activities of this two year project were taken up at the instance of Cess Committee of CPPRI with the objective to update the knowledge of technical personnel of Indian Paper Industry which will enable them to utilize the resources, equipment and unit processes to the optimum level. Following training programme was organized as part of the project activities.

10th Cess Training Programme - "Conservation in Pulp and Paper Industry"

10th Cess Training Programme was conducted on "Conservation in Pulp and Paper Industry" on November 5-6, 2012 at Tamilnadu Newsprint & Papers Ltd.; (TNPL), Kagithapuram (Tamilnadu). Forty five technical personnel from various mills participated in this training programme. Eminent Faculty from paper mills, equipment manufacturers and consultants shared their vast experience in the field of energy with active participation of the trainees. The aim of the programme was to apprise the participants about the latest technological developments and practices adopted worldwide to conserve energy in the background of the energy reduction targets set by Bureau of Energy Efficiency under National Mission for Enhanced Efficiency (NMEE). The topics covered during the training programme are as follows:

- Implementation of PAT scheme in Pulp & Paper Industry.
- Role of MCDT in Energy Conservation.
- Energy Efficiency Opportunities in Vacuum Pumps.
- Application of Pinch Technology in Pulp & Paper Mills.
- Best Co-Generation Practices in Pulp & Paper Mills.
- Role of ESCO in Achieving the PAT Target by Pulp & Paper Mills.
- Energy Conservation Efforts at TNPL (Tamilnadu Newsprint and Papers Ltd.).
- Energy Conservation Efforts at JK Papers Mills.

- Advances in Steam and Condensate Systems for Energy Efficiency.
- Energy Efficient Electrical Motors and their Control Devices.
- Best Insulation Practices for Pulp & Paper Industry.
- Application of High / Medium Consistency Pumps for Energy Conservation Pulp & Paper Industry.

Sponsored Projects

Deinking Optimization Studies of Currency Broke -
Sponsored by M/s Security Paper Mills, Hoshangabad,
M.P.



Participants during 10th Cess Training Programme



Dr. B.P. Thapliyal, Sc. 'E-II' giving welcome address during the 10th Cess Programme



Shri R. Mani, CGM (Operations),
Dr. S. V. Subramaniam, DGM (R&D) & other TNPL officials

A project was awarded to CPPRI by Security Paper Mill, Hoshangabad to conduct "Prefeasibility studies on Deinking of Currency Broke". The objective of this study is to explore the possibility for deinking of currency so that it could be recycled back. The laboratory studies on deinking of currency broke were completed and the report is under preparation.

Enzymatic Refining of Cotton Comber and Linter Pulps -
Sponsored by M/s Security Paper Mill, Hoshangabad,
M.P.

The objective of the project is to explore enzymatic refining process for cotton comber and linter pulps to improve the pulp quality, drainability and to reduce energy during refining. Enzyme procured from a leading enzyme manufacturing company was used for the study. Studies on optimization of various parameters like enzyme dose and treatment time on enzymatic treatment of cotton comber were conducted. Further, enzyme treatment studies extended to cotton linter followed by beating showed savings in energy (10%) consumed during refining of enzymatically treated pulps. Interim report on enzyme refining of cotton comber and linter was submitted. CPPRI scientists visited SPM to analyse the prevalent process conditions for application of enzyme refining process.

Exploration of Jute as a Source of Fibrous Raw Material for Indian Paper Industry - Sponsored by National Jute Board, Kolkata

After successful pilot plant trials, Commercial scale trials are being planned in one of the agro based mill in central part of the country.

Implementation of Charter for Water Recycling and Pollution Prevention in Pulp and Paper Industries in Ganga River Basin

CPPRI has been actively involved as monitoring agency to monitor the progress of implementation of Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries in Ganga River Basin by pulp and paper mills in the Kashipur, Muzaffarnagar, Meerut, Moradabad & Roorkee Cluster. During the period regular visits to all the mills situated near Ganga river basin (~ 80) were carried out for verification of the progress made by individual mill in context of process upgradation, ETP upgradation and water conservation etc as per charter requirements and collection of environmental samples to assess the compliance to revised norms stipulated under the charter.

Improved Energy Efficiency through Utilization of Lignin Based Biomass from Agro Based Paper Mills - Sponsored by Petroleum Conservation and Research Association, New Delhi

Under this project lignosulphonate were prepared at the technology promoter site and were sent to Indian Plywood Industries Research & Training Institute (IPITRI) for pilot plant trials. Encouraging results were obtained. Further studies are continued.

Indexing, Digital Abstracting and Digitisation of IPPTA Articles/ Publications - Sponsored by IPPTA, Saharanpur

The project aims to provide the wealth of knowledge published in IPPTA journals through latest IT technology. Major objective of the project is to preserve the technical information for future use and make it accessible round the clock 24 x 7.

The project activities were started with collection of IPPTA Journals published in last 20 years. The scanning of

articles and research papers published is under progress. The design and development work for e-library portal for IPPTA is under progress.

Pre-feasibility Studies on AKD Sizing of Cotton Pulp - Sponsored by M/s Security Paper Mills, Hosangabad, M.P.

A project was entrusted to CPPRI by Security Paper Mill, Hoshangabad to conduct Pre-feasibility on AKD sizing of cotton furnish. The objective of this study is to establish the efficacy of Neutral/Alkaline sizing of cotton furnish using AKD emulsion as sizing chemical without affecting the quality of end product. The mill intends to replace alum rosin sizing with AKD sizing if found feasible.

Lab trials conducted with AKD sizing has shown physical strength & optical properties similar to rosin alum sizing and no drop in any of the properties has been observed. A detailed report of laboratory findings has been submitted to mill.

Based on the laboratory findings second phase of the activities i.e. mill scale trials are under progress.

Production of High Alpha Cellulose Pulps - Sponsored by M/s Godavari Biorefineries Ltd., Mumbai

The project aim is to develop high alpha cellulose and high brightness pulps (90%) with low silica content along with pure lignin from bagasse. Bagaase raw material received from M/s GBL was depithed by CPPRI patented method. Chemical characterisation studies on whole bagasse, depithed bagasse and bagasse pith were initiated.

Review and Validation of Baseline Energy Audit (BEA) reports for all Designated Consumers Belonging to Pulp and Paper Sector,- Rendering Services as an Energy Professional Under PAT Scheme - Sponsored by EESL, New Delhi

A project has been awarded to CPPRI by Energy Efficiency Services Limited (EESL), Ministry of Power, Govt. of India, New Delhi.

- Received 41 Baseline Energy Audit Reports (BEA) through EESL



- Reviewing the BEA report of each DC belonging to Pulp and Paper Sector in accordance with the requirement of EESL
- Checking of each report of completeness of technical data and sufficiency of other essential information as desired in accordance with the sector specific format issued, pre-audit to each of these auditing agencies and in accordance with the requirements of checklist provided

Studies on Characterization of Sodium Sulphate for its Conversion into Sodium Sulphide - Sponsored by M/s Chrome Chemicals, Chandrapur, Maharashtra

Initial characterization of the by-product of Pharma Industry have been completed. Conversion part of sulphate to sulphide is being planned.

Technological Improvement of a Process of Biological Reduction of AOX, Colour, COD and BOD of Waste Water Emanated from Large Pulp and Paper Industries. (CPPRI/IGIB, Star Paper Mills Ltd.) - Sponsored by Department of Biotechnology, New Delhi.

In continuation with the earlier studies, pilot trial on bioremediation of paper mill effluent using developed microbial process was continued at M/s Star Paper Mill, Saharanpur. Microbial sludge developed in pilot plant was added to aeration plant on daily basis. Extensive analysis of treated effluent from both pilot and mill for various pollution parameters of interest was continued. Further, parameters like MLSS, dissolved oxygen and SVI were also analysed. Results were encouraging in respect of reduction in COD (70-75%), AOX (25-30%), Color (40-50%), Legin (30-35%) and BOD (92-96%) at any low MLSS level.

Technical Services to Handmade Paper Cluster, Radaur (Haryana) - Sponsored by Khadi & Village Industries Commission

Studies have been initiated on utilization of rice straw in handmade paper industry so that this waste can be converted to value added product and raw material problem of handmade paper industry can be tackled.

Laboratory studies have been completed. Encouraging results have been obtained.

Mill Sponsored Projects

Following sponsored projects were taken up at the instance of various Pulps, Paper & Allied Industries for the period October - December, 2012 by the Institute. Details are as under :

S.No.	Consultancy Services / Technical Assistance	Sponsoring Agency
1.	Pulping and Bleaching Evaluation of Coconut fibres.	Indian Institute of Carpet Technology Bhadohi (U.P.)
2.	Soda loss in various unit operation.	M/s. Century Pulp & Paper, Lalkuan

TECHNICAL / CONSULTANCY SERVICES

Following Consultancy/Technical services were provided to various Pulp, Paper & Allied Industries for the period of October - December, 2012 by the Institute. Details are as under:

- Technical services were rendered to 69 pulp & paper mills by analyzing their effluents/solid waste samples and carrying out air monitoring studies for various pollution parameters in the states of Uttarakhand, Punjab, Karnataka, Haryana & Tamilnadu.
- 15 Nos. of raw material samples, 2 Nos. of pulp samples were analyzed for various parameters of moisture contents, proximate analysis, white liquor.
- 625 Nos. Pulp and Paper sample were analysed for Grammage, Tensile Index, Tear Index, Brust Index, Bulk, Thickness, Smoothness, Wax Pick, Brightness, Opacity, Cobb, Mechanical Content and Fibre Furnish.
- 5 Nos. of samples of sizing chemicals, recycled pulp & gum samples received from various agencies were analysed.
- 39 Nos. samples of Black Liquor, Coal, Lignin and Paper were analysed for elemental composition.

WORKSHOP/SEMINAR/MEETINGS

Workshop /Conference

- Dr. R. M. Mathur, Director, Dr. R. K. Jain, Sc. 'F' & Dr. Suresh Panwar, Sc. 'F' participated in Technical Conference on "Paper Industry - Strategies for Growth" during Paper+ held at Coddisa Trade Fair Complex from November, 24-26, 2012.

Meetings

- Dr. Vimlesh Bist, Sc. 'F', Dr. R. K. Jain, Sc. 'F' & Dr. A. K. Dixit, Sc. 'E-I', participated in Canada - India Business Events held in Delhi for Transfer of Technology for Desilication of silica rich Black Liquor and signing the Research Services Agreement between CPPRI & Prairie Pulp & Paper Inc., Canada on November 5, 2012.
- Dr. Vimlesh Bist, Sc. 'F' and Dr. B. P. Thapliyal, Sc. 'E-II' visited Jaipur regarding meeting with Commissioner, Excise and Customs for cross examination on December 2012.
- Dr. R. K. Jain, Sc. 'F' visited Hindustan Paper Corporation Limited, Kolkata to participate in the Board Meeting of HPC invited as expert from the paper domain on December 27, 2012.
- Dr. B. P. Thapliyal, Sc. 'E-II' visited EESL, New Delhi to attend the meeting with Shri Sunil Shekher and discussed the base line energy audit in the month of October 2012.
- Dr. B. P. Thapliyal, Sc. 'E-II', visited New Delhi to attend the meeting with Shri R. C. Rastogi, CMD, Khatema Paper Mill, on October 28, 2012 to discuss the issues related to T-Map scheme.
- Dr. B. P. Thapliyal, Sc. 'E-II', visited New Delhi to attend the meeting with Shri Satish Kalothra, DIPP, regarding BRBNMPL and Ashok Paper Mill on October 2012.
- Dr. B. P. Thapliyal, Sc. 'E-II' visited DIPP, New Delhi to attend the meeting for import of second hand capital

goods for pulp and paper industry on November 2012.

- Dr. B. P. Thapliyal, Sc. 'E-II' visited EESL, New Delhi to attend the meeting with DENA in EESL on December 19-20, 2012.
- Dr. B. P. Thapliyal, Sc. 'E-II', visited DIPP, New Delhi to attend the meeting, with Shri Nayak, DIPP and discussed National Policy on paper on December 2012.
- Dr. B. P. Thapliyal, Sc. 'E-II', Sh. Alok Kumar Goel, Sc. 'C' and Shri Akhil Naithani, JRF visited Energy Efficiency Services Limited (EESL), New Delhi during 6-7 December, 2012 to attend a meeting for reviewing of various Base line energy audit reports conducted by various auditing agencies under PAT Scheme.
- Dr. B. P. Thapliyal, Sc. 'E-II' and Sh. Alok Kumar Goel, Sc. 'C' visited Bureau of Energy Efficiency (BEE) and Energy Efficiency Services Limited (EESL), Ministry of Power, New Delhi to attend a meeting during 19-20 December, 2012 organized for reviewing of energy audit reports of pulp and paper mills under PAT Scheme.
- Dr. R. D. Godiyal, Sc. 'E-I', attended the Purchase Committee meeting as a Technical Expert from CPPRI at Camp Office Printing and Stationary, Lucknow U.P. on October 2012.
- Dr. Sanjay Tyagi, Sc. 'C' attend the hearing at the office of Commissioner, Central Custom & Excise, Ahmedabad in October, 2012.

LECTURES AND PRESENTATIONS

- Dr. R. K. Jain, Sc. 'F' presented a paper entitled "Improved Papermaking of recycled fibres through fibre modification with enzymes" during the 2nd paper+ conference held at Coddisa Trade Fair Complex Coimbatore from November 24-26, 2012.
- Dr. B. P. Thapliyal, Sc. 'E-II' a delivered lecture on "Energy Efficient Opportunities in Pulp and Paper



Sector" at Cess Training Programme or "Energy Management Issue and challenges" at TNPL, Kagithapuram (TN) in October, 2012.

- Dr. B. P Thapliyal, Sc. 'E-II' and Sh. Alok Kumar Goel, Sc. 'C' made a presentation on "Energy Efficiency Opportunities in Pulp & Paper Sector - Case Studies and Role of Thermography in insulation in workshop on Energy Efficiency Opportunities in Industries Through Thermal Insulation" at Muzaffarnagar on October 12, 2012. The Workshop was organized by BEE / GIZ and KAEFER.
- Dr. Sanjay Tyagi, Sc. 'C' delivered lectures as a guest faculty on manufacturing Techniques" (Mechanical Engineering) to the students of B.Tech (1st Year) at Deptt. of Paper Technology, IIT Roorkee for Spring Semester 2012.
- Shri N. K. Naik, T.O.'B' delivered lecture on "Energy Saving opportunities in compressors and compressed air systems" at Cess Training Programme or "Energy Management Issue and challenges" at TNPL, Kagithapuram (TN) on October, 2012.

REPORTS AND PUBLICATIONS

Reports

- Project report on "Laboratory Pulping & Bleaching Trial of Canadian Wheat Straw was submitted to the sponsoring agency Prairie Pulp & Paper Inc., Canada.
- Water Audit of M/s Emami Paper Mill, Balasore, Orissa.
- ETP Adequacy of M/s Emami Paper Mill, Balasore, Orissa.
- 75 Nos. of Reports on ETP Evaluation, Evaluation Adequacy, Evaluation Upgradation, Water Conservation & Tertiary Treatment Options Plan of mills situated near Ganga river basin submitted to CPCB, New Delhi.
- Report on soda loss in various unit operation in chemical recovery at Century Pulp & Paper, Lalkaun.

- Report on utilization of rice straw in handmade paper making.

Publication

International

- Sushil Nagar, R. K. Jain, Vasanta Vadde Thakur & Vijay Kumar Gupta "Biobleaching Application of Cellulase Poor and Alkali Stable Xylanase from *Bacillus Pumilus* Sv-85s, 3 Biotech, Doi 10.1007/S13205-012-0096-Y, October, 2012.

National

- Dr. A. K. Dixit, Dr. R. K. Jain & Dr. R. M. Mathur "Innovations & Process Development for Efficient Operation of Chemical Recovery System in Paper Industry" at IPPTA Workshop held at Seshayee Paper & Boards Ltd. Erode (Tamilnadu) on November 1, 2012.
- Atul Kumar, Vasanta V. Thakur, Sharma, A. K., Jain, R. K. Singh, B. P. and Mathur, R. M. "Banana Fibre - An Emerging and Potential Lignocellulosic Raw Material for Paper Making" In paper international Oct.-Dec., 2012 vol.(15), issue 1.
- Chetna Gupta, Dharmendra Kumar, Vasanta V. Thakur, R. K. Jain & R. M. Mathur "Improved Papermaking of Recycled Fibres through Fibre Modification with Enzymes" published in proceedings of Technical Conference on "Paper Industry - Strategies for Growth" during Paper+ 2012 held at Coddisia Trade Fair Complex Coimbatore from November 24-26, 2012.

INTERACTION WITH INDUSTRY

- CPPRI is in interaction with M/s Emami Paper Mill, Orissa for Enzyme Characterization and Lab scale Studies of Recycle Paper Deinking.
- CPPRI is in interaction with M/s Godawari biorefineries for Enzymatic Pre-bleaching and Lignin Utilisation.
- CPPRI is in continuous interaction with M/s Star Paper

Mills Ltd., Saharanpur for ongoing Pilot Trial on Developed Biological Effluent Treatment Process under DBT sponsored project.

- CPPRI is in continuous interaction with reputed enzyme manufacturers and suppliers viz. Value Addition and M/s Advance Biochem, Mumbai for Procurement of Enzymes for various enzyme applications in Pulp & Paper making.
- Interaction with M/s Star Paper Mills Limited for chemical recovery audit.

Visits to Mills and other Organisations

- Dr. R. K. Jain, Sc. 'F' visited M/s Rossari Biotech Ltd., Silvasa, Mumbai for conducting the site visit for the evaluating the facilities for the project "Production of Xylanase Enzyme using Agro Waste and/Produce as Raw Material for Industrial Applications specially Paper" under TIFAC - SIDBI Revolving Fund on October 18, 2012.
- Dr. R. K. Jain, Sc. 'F' visited Petroleum Conservation & Research Association (PCRA), New Delhi to discuss the progress of the sponsored project on October 30, 2012.
- Dr. R. K. Jain, Sc. 'F' visited Reserve Bank of India (RBI), Kanpur for discussion about utilization of shredded currency waste and its utilization in paper making in order to provide technical support of to RBI under a sponsored project on November 19-20, 2012.
- Dr. R. K. Jain, Sc. 'F' & Dr. A. K. Dixit, Sc. 'E-I' visited cluster of Handmade Paper situated at Radour (Haryana) for collection of data under the Khadi & Village Industries Commission (KVIC) sponsored project on December 4, 2012.
- Dr. R. K. Jain, Sc. 'F', Dr. A. K. Dixit, Sc. 'E-I' & Shri. Diwakar Pandey, JRF visited Indian Institute of Petroleum, Dehradun to discuss the sponsored project activities on October 4, 2012.
- Dr. R. K. Jain, Sc. 'F' & Dr. A. K. Dixit, Sc. 'E-I' visited M/s Garg Duplex & Papers Pvt. Ltd. for signing of the MoU between CPPRI & Cluster of Agro based Paper Mills (COABPL) at Muzaffarnagar in order to provide the technical support in installation & commissioning of Common Chemical Recovery System on October 10, 2012.
- Dr. R. K. Jain, Sc. 'F' & Dr. Vasanta V. Thakur, Sc. 'B' visited M/s Security Paper Mills Limited, Hoshangabad for discussion of ongoing & future project activities and planning for mill trial on December 13-14, 2012.
- Dr. R. K. Jain, Sc. 'F' & Dr. Tarun Sharma, JRF visited Maruti Papers Limited, Shamli for collection of black liquor samples under the sponsored project for setting up of a common chemical recovery system on November 18, 2012.
- Mrs. Rita Tandon, Sc. 'F' & Sh. Satya Dev Negi, Sc. 'B', Visited Security Paper Mill, Hoshangabad on December 18-22, 2012 to study the mill layout for implementation of 2nd phase activity of mill scale trials regarding the Project "Pre-feasibility Studies on AKD Sizing of Cotton Pulp".
- Dr. B. P. Thapliyal, Sc. 'E-II' and Dr. Sanjay Tyagi, Sc.'C' visited M/s Ashok Paper Mills Limited (Bihar Unit), Darbangha on October 18, 2012 to access the steps taken for revival of the mills.
- Dr. A. K. Dixit, Sc. 'E-I' visited Indian Institute of Petroleum (IIP), Dehradun to study the operation of gasification apparatus in IIP Laboratory on November 20, 2012.
- Dr. A. K. Dixit, Sc. 'E-I' visited Rama Shyama Papers Limited, Bareilly (U.P.) for studies on troubleshooting of chemical recovery system on November 26, 2012.
- Dr. A. K. Dixit, Sc. 'E-I' along with the group of 14 students of M.Sc (Cellulose & Paper Technology) visited Kuantum Papers Limited, Saila Khurd (Punjab) for a study tour on December 5, 2012.
- Sh. Alok Kumar Goel, Sc. 'C' and Sh. N. K Naik T.O.'B' visited following paper mills to submit final



report of Energy Audit Conducted under PAT Scheme . Feed back from the mill was also collected during the visit.

1. M/s Sangal Paper Mills, Meerut (U.P.)
 2. M/s Sardhana Paper Mills, Meerut (U.P.)
 3. M/s Rana Paper Mills Limited, Muzaffarnagar (U.P.)
 4. M/s Rama Paper Mills, Bijnore (U.P.)
- Dr. Tarun Sharma, JRF, visited M/s Madhya Bharat Papers Ltd. for running of Lignin Removal Plant and collection of samples of Lignin under the PCRA sponsored project "Improved Energy Efficiency through Utilization of Lignin based Biomass from Agro Based Paper Mills" on October 5, 2012.
 - CPPRI's team of Scientists namely Dr. S. Panwar, Sc. 'F', Dr. M. K. Gupta, Sc. 'E-II', Dr. S. Mishra, Sc. 'E-I', Dr. Nitin Endlay, Sc.'E-I', Mohd. Salim, SSA and Mohd. Farid, RA visited around 80 mills in Kashipur, Muzaffarnagar, Meerut, Moradabad & Roorkee Cluster as mentioned under on regular basis to monitor / verify the progress of implementation of Charter, collection and analysis of waste water samples and evaluation of performance of ETPs.

PATENT

Process for production of renewable fuel and chemicals in a Biorefinery from Bagasse pith" Indian patent : Application no. 3444/DEL/2012 Dated 7/11/2012 "- Inventors from CPPRI: R. K. Jain, Vasanta V Thakur, R. M. Mathur, Diwaker Pandey, Dharmendra Kumar. Inventors from CSIR- IIP: D. K. Adhikari, Savita Kaul, Debashish Ghosh, Deepti Agrawal, Rashmi, Diptarka Dasgupta, Sunil K Suman, Dinesh Bangwal, M. S. Negi, U. K. Jaiswal, Pankaj K. Arya.

TRAINING PROGRAMME

- One month training was imparted to one candidate in the area of biotechnological applications in pulp and paper industry.

VISITORS

National

- Shri. V. K. Tharad, DGM (Project), Shri Shyam Paper and Board Ltd., Kashipur visited CPPRI to deliver the lecture to M.Sc students on "Lime Kiln Operation" on October 9, 2012.
- Dr. Rath from Security Paper Mills, Hoshangabad visited CPPRI to discuss the progress of the sponsored project "Enzymatic Refining of Pulp" on October 16, 2012.
- Dr. Salil Dhawan from Forest Research Institute (Deemed) University visited CPPRI for delivering the papers for examination of M.Sc student of 3rd Semester on December 17, 2012.

Visit to CPPRI Paper Museum

A group of students from Delhi Public School, Saharanpur visited CPPRI to visit the Paper Museum of CPPRI on November 6, 2012. To spread the knowledge on paper use and paper making among the students, Dr. Vasanta V. Thakur made a presentation on history of paper making and importance of paper recycling and Dr. Nitin Endlay emphasized the importance of environment and advised school staff to create a special cell for environment protection in the school.

VIGILANCE AWARENESS WEEK

CPPRI celebrated the Vigilance Awareness Week, 2012 from October 29 to November 3, 2012. On the occasion, the pledge was administered by Dr. Vimlesh Bist, Sc. 'F'. Messages from the President, Prime Minister & Central Vigilance Commission respectively was delivered by Dr. R. K. Jain, Sc. 'F' Chief Vigilance Officer followed by a brief presentation substantiating the theme of this year "Transparency in Public Procurement". M.Sc. (Cellulose & Paper Technology) students also participated in the function and presented their views on the occasion.



Dr. R. K. Jain, Sc. 'F', CVO, CPPRI delivering a lecture on Vigilance Awareness Week



Scientists and staff of CPPRI taking the pledge on the occasion of Vigilance Awareness Week



Dr. Vimlesh Bist, Sc- 'F', administered the pledge to CPPRI Staff.



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**We welcome suggestions & comments
for further improvement of this News Bulletin.**