

CPPRI

केन्द्रीय लुग्दी एवं कागज़ अनुसंधान संस्थान, सहारनपुर

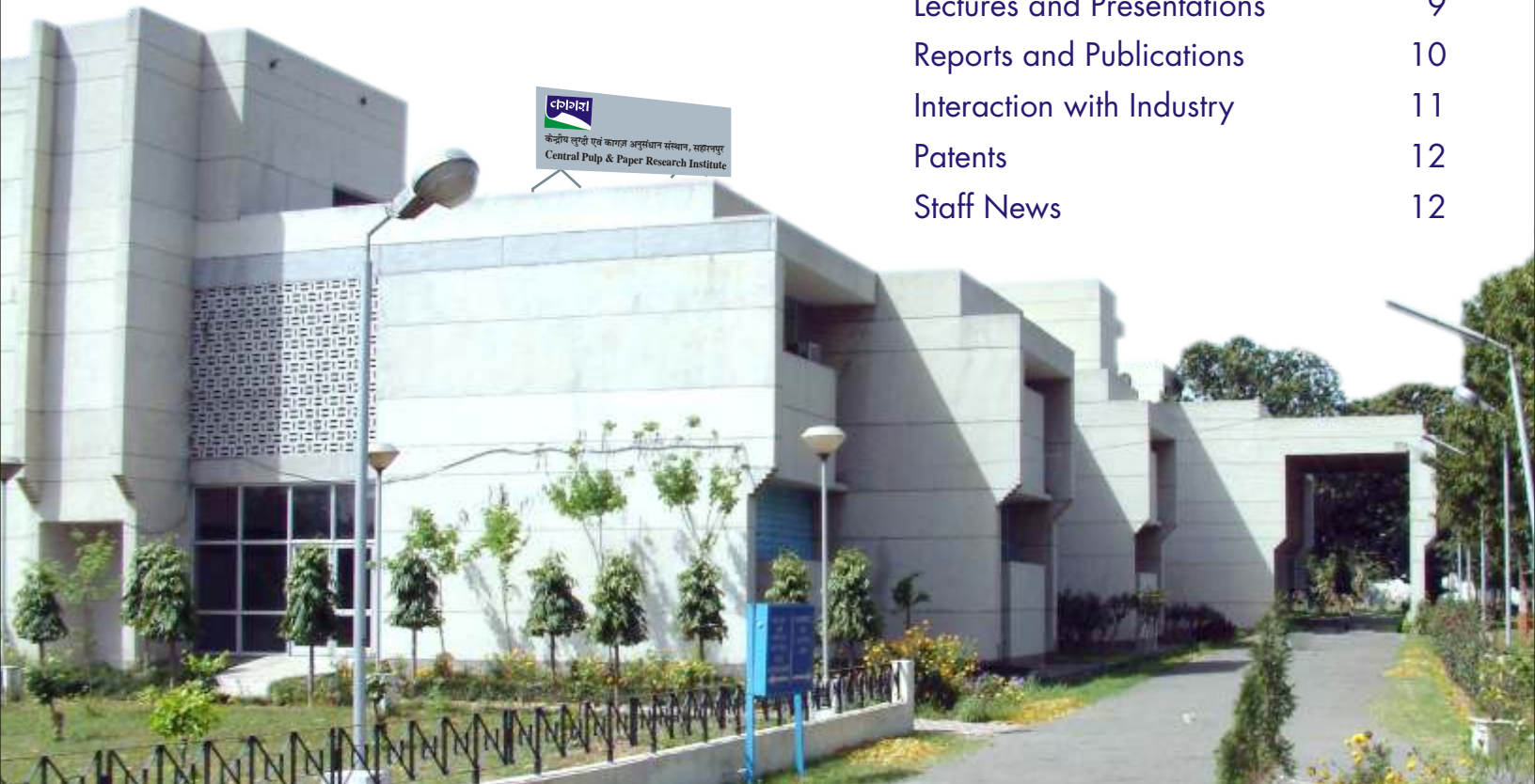
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MANAGEMENT NEWS

A meeting of Research Advisory Committee (RAC) was held on August 25, 2011 at Udyog Bhawan, New Delhi. The meeting was chaired by Sh. Talleen Kumar, IAS, Joint Secretary, Ministry of Commerce & Industry, DIPP, to review the progress of on-going research schemes under XI RAC Plan. The other members who participated in the meeting were Sh. Rajat Kumar (IAS), Director, DIPP, Sh. Mukul Ratra, Director Finance, DIPP, Sh. Satish Kalothra, US (Paper), DIPP and Dr. Vimal Kumar, Adviser, DST and Sh. Arun Bijur, MD, SPB PC and senior executives representing the Pulp & Paper Industry's associations. Dr. R. M. Mathur, Director, CPPRI & Member Secretary, RAC initiated the proceedings and presented the achievements of the institute



Shri Talleen Kumar, IAS, Joint Secretary DIPP, Shri Rajat Kumar, IAS, Director DIPP and Dr. R.M. Mathur, Director, CPPRI during the RAC meeting

during 2011. The senior scientists from CPPRI & project leaders of the various RAC projects i.e. Dr. V. Bist, Sc. F, Dr. R. K. Jain, Sc. F, Mrs. Rita Tandon, Sc. F, Dr. S. Panwar, Sc. F & Dr. B. P. Thapliyal, Sc. E-II made the presentation on the progress & outcome of various on-going research schemes. The valuable suggestions made by the members were noted for incorporation in the future work plan. The projects proposed for XII RAC plan schemes were also discussed in detail during the meeting.

RESEARCH & DEVELOPMENT ACTIVITIES

Raw Material and Product Development

Optimization of Wet End Operation of Paper Making to Improve the Quality of Paper

The previous studies revealed that due to poor retention of fines the anionic surface charge increased considerably at the head box thus leading to high cationic demand to achieve good retention. In an attempt to improve the wet end performance, pre-neutralization of the stock with high charge cationic polymer prior to addition of wet end chemicals resulted in improved drainability, First Pass Retention as well as filler retention.

Printing Quality Evaluation - Assessment and Improvement Possibilities for Indigenous Coated Paper and Paperboard

The base paper sample coated by using acrylic as binder and calendered in laboratory calender using soft nip and hard nip calendering modes were evaluated for strength, optical and printing properties. The results were compared with paper coated with formulations using SB latex. Results show that there is a gain in optical properties of coated paper with acrylic as binder in coating formulation. Improvements in some properties especially in gloss values & printing properties like pick velocity were also observed without affecting strength properties of coated paper. Further investigations with different coating formulations are in progress.

An Integrated Approach on Application of Biotechnology in Pulp & Paper Industry

The project aims to develop and promote biotechnological applications in Pulp and Paper Industry as clean & green technology to address the problems of resource conservation, quality up-gradation and environmental improvement under the following identified areas.

- ❖ **Enzymatic Prebleaching of Wood Chemical Pulps :** Laccase prebleaching experiments were continued on hardwood pulp received from Star Paper mill, Saharanpur. Two commercial laccase enzymes were used for enzymatic prebleaching in order to determine the effect of elemental oxygen and other chemical mediators. Studies showed encouraging results

i.e. brightness improvement up to 2.3% ISO and 2.0 unit improvement in whiteness of enzyme treated pulp. It was also established that there is possibility of savings of ClO_2 to the tune of more than 25%.

Technical support was provided for commercial scale trials on Xylanase prebleaching of oxygen delignified hardwood pulp in one of the large wood based paper mills in Andhra Pradesh. Laboratory scale Xylanase prebleaching studies were conducted with consignment sample enzyme to be used for mill trials at R&D laboratory of the mill. Results of the lab studies were encouraging showing potential for reducing the demand of ClO_2 by 15% with gain in brightness of 1.0% ISO. Arrangements for enzyme dosing and process conditions were finalised. Trials with enzyme were continued.

- ❖ **Enzymatic Refining of Pulps :** Biorefining experiments were continued with cellulase enzymes identified for refining. Enzymes were received from an indigenous enzyme supplier. Two commercial cellulase enzymes were evaluated for CMCase FPase and β -glucosidase activities for enzymatic refining. CMCase activity- 32 to 37 (IU/ml), FPase activity- 5 to 10 (IU/ml) and β -glucosidase activity - 3.0 to 4.3(IU/ml) were obtained for the two enzymes. Studies were in progress to optimize process condition for biorefining of pulps.
- ❖ **Bioremediation of Paper Mill Effluent :** In continuation of studies related to effluent treatment, experiments were carried out with screened lignolytic bacterial isolates to reduce the pollution load in respect of colour, lignin and Phenolics. Around 10-15% reduction in colour and lignin in effluent samples collected from a wood based mill was observed with isolated strains. Further, Isolation of microbial strains from effluent and sludge are under progress in order to find the more effective strains for effluent treatment.

Energy Conservation & Environmental Management

Integrated Approach for Improving Environmental Status of Pulp & Paper Industry

Following activities were carried out under the project:

- ❖ Studies on ETP adequacy assessment to achieve stipulated discharge norms in the paper mills as placed below -
 - (i) Waste paper based mill producing writing & printing paper
 - (ii) Waste paper based mill producing semi kraft paper
- ❖ Studies on evaluation of Performance Efficiency of ETP in agro & waste paper based mill producing packaging paper

Detailed report with recommendations and suggestions in respect of above project activities were submitted to respective mills.

Infrastructure and Development Activities

Inauguration of M.Sc. Course in Cellulose & Paper Technology

The Forest Research Institute (Deemed University) inaugurated a new two year M. Sc. Cellulose & Paper Technology course on August 1, 2011. The course, to be run in joint collaboration with CPPRI, was formally inaugurated by Dr. S. S. Negi, IFS, Director & Vice Chancellor, FRI University. The function was also addressed by Dr. R. K. Aima, IFS, Dean FRI University, Dr. Sanjay Naithani, Head, C & P Division FRI. Dr. R. M. Mathur, Director CPPRI along with Dr. Vimlesh Bist, Sc. 'F', Dr. R. D. Godiyal, Sc. 'E-I', Dr. Nitin Endlay Sc. 'E-I' & Dr. Vasanta V. Thakur Sc. 'B' attend the inaugural function.

Strengthening of Training & Human Resource Development (HRD) Infrastructure in Pulp, Paper & Allied Industries

Following training programmes were conducted in different areas as a part of the project activities:

Paper Making

- ❖ Mr. Jahid from Pune University, Pune (Maharashtra) was imparted training in the area of "Pulp & Paper Manufacturing" from

September 08 to January 08, 2011.

Paper Testing

- ❖ Mr. Jagannath Sardesai from Thermax India, Pune (Maharashtra) was imparted training in the area of "Paper Testing" from July 11 to July 22, 2011.

Pulping & Bleaching

- ❖ Mr. Faizan from Sir Chhoturama Engineering College, Meerut (Uttar Pradesh) was imparted training in the area of "Pulping & Bleaching of Raw Material" from July 11 to August 11, 2011.

Process & Design

- ❖ Dr. S. P. Singh from "Indian Council of Forestry Research and Education, Dehradun (Uttarakhand)" was imparted training in the area of "Process & Design Development" from August 22 to September 02, 2011.

Biotechnological Applications in Pulp & Paper

- ❖ Nine numbers of M.Sc. & B.Tech. (Biotechnology) students were imparted training in the area of biotechnological applications in Pulp and Paper Industry.

Infrastructure Development for Extension of Library & Documentation Service to the Indian Paper Industry

- ❖ Current Awareness Service (CAS) & Selective Dissemination of information (SDI) was provided from the current journals related to Pulp & Paper to 47 Member Mills of CPPRI as well as Institute Scientists.
- ❖ Rendered Reference/referral/reprographic service to the Indian Pulp and Paper and Allied Industries, R&D Centre, Member Mills and other organizations.
- ❖ Twenty Nine Visitors from different organizations visited the Library during the period from July - September, 2011.
- ❖ A book exhibition was organized from September, 13 -14 & 20 -21, 2011 and three vendors namely Hi-tech books, Techniz book and IBT participated & displayed various books & published technical literature relevant to different areas of pulp, paper & allied industries.



Dr. R.M. Mathur, Director, CPPRI, Senior Scientist & other staff members during the book exhibition.

Cess Funded Projects

Establishment & Demonstration of Wastepaper Collection, Sorting and Grading System in Selected Metropolis in India

A Discussion Paper prepared by CPPRI on "Collection and Recycling of Waste Paper in India" with active co-operation and inputs received from IPMA, INMA, IRPMA and ITC is available on Department of Industrial Policy & Promotion (DIPP) website www.dipp.nic.in with an aim to enable the Government to take appropriate policy decisions by inviting public opinion and feedback.

Studies on Ozone Treatment of Indigenous Raw Material Pulp for Better Bleachability

The objective of the project is to improve bleaching pulp quality in terms of optical and strength properties and reduction / removal of elemental chlorine during bleaching process for improved quality of liquid discharges.

Laboratory studies have been initiated on ozone bleaching of eucalyptus pulp having kappa no. 17. Effect of oxygen delignification was also studied on ozone treated eucalyptus pulp. Eucalyptus pulp of Kappa No. 17 was bleached by AZEpD as well as OAZEpD bleaching sequence in laboratory. It was observed that brightness above 85% could be achieved by incorporating Oxygen Delignification (ODL) before ozone treatment.

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

The objective of the project involves efficient utilization of pith, a waste generated during depithing process of bagasse through development of a process for production of bio-ethanol and value

added lignin products. Studies on enzymatic saccharification of prehydrolysed pith were continued with two commercial enzymes to recover maximum amount of fermentable sugars in shorter duration. Chemical characterisation of residual biomass from each stage i.e. after prehydrolysis and enzymatic saccharification were carried out for parameters of interest like lignin, pentosan, holocellulose and ash. Efforts were made to utilize Xylose fraction obtained from prehydrolysis of bagasse pith as a source of furfural & valuable chemicals. Process conditions were optimized. Studies on fermentation of enzymatic hydrolysate showed 60-70% conversion efficiency of ethanol production. Further, studies are in progress to upscale the process on pilot scale.

Sponsored Projects

Evaluation of Xylanases and Laccases at Pilot and Mill Scale in Pulp & Paper Industry (CPPRI/ DUSC/ KUK/Jay Biozyme, Pune) Sponsored by Department of Biotechnology, Govt. of India, New Delhi)

The project aim is to evaluate the potential of xylanase / Laccase enzymes developed under the project and to explore its potential as bleach booster on chemical wood pulp. Having successfully conducted the pilot scale trials on Xylanases / Laccases prebleaching of wood pulp, efforts were made for commercial trials. Process conditions like enzyme dose, temperature and pH were optimized. The result on pilot scale prebleaching of chemical wood pulp were highly encouraging & showed brightness gain of more than 2.8% and reduction in chlorine in 15 -20%. The crude enzyme produced from solid state fermentation process was found to show better effect in brightness gain & chlorine reduction even at higher alkaline pH of the pulp with lower enzyme doses.

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

The project aims to develop an eco-friendly technology while addressing the problem of water

pollution by way of removal of the major pollutants viz. COD, Color, lignin and AOX with the use of microbial consortia developed. Having completed successfully the pilot studies on batch scale conducted at M/s Star Paper Mills wherein it was possible to remove more than 70% of color, 40-50% of COD & AOX, it has been decided to pursue the pilot scale trials on continuous basis. Studies are under process.

Utilization of Fly Ash for Removal of Color from Paper Mill Effluent - Sponsored by Centre for Fly Ash Research & Management, New Delhi

A team of CPPRI scientists along with the officials of C-FARM visited the identified agro based paper mill for conducting the pilot plant trials in order to explore the potential & techno-economic viability of process developed for color removal using fly ash. Studies have shown encouraging results and it was possible to achieve the color removal efficiency by more than 90%. Further, activities are under progress to continue for commercial trials.

Assistance to Star Paper Mills for improving the Chemical Recovery Efficiency

Star Paper Mills Ltd., Saharanpur sponsored a project to CPPRI for improving the efficiency and troubleshooting in the area of chemical recovery. Initial studies conducted on assessment of the chemical recovery operations indicated that lower sulphidity was one of the factor responsible for poor efficiency of the evaporators, recovery boilers & causticizers thereby leading to scaling in evaporators due to higher viscosity & their lower black liquor solids during firing thereby poor steam recovery & lower reduction efficiency. With the intervention of CPPRI, it has been possible to increase the sulphidity level from 14% to 20%. Further studies are in progress. Annual Services Contract has been signed with M/s Star Paper Mills Limited for troubleshooting in the area of chemical recovery and studies are continued..

Base Line Energy Audit of Designated Consumers

Energy Efficiency Services Limited (EESL) has awarded work to CPPRI to conduct base line Energy Audits in the following selected mills.

1. Sangal Paper Mills, Meerut

2. Sardhana Paper Mills, Meerut
3. Rana Paper mills Limited, Muzaffarnagar
4. Rama Paper Mills, Bijnore

The objective of the project is to verify the data collected earlier from Designated Consumers (DC) under Perform Achieve and Trade (PAT) Scheme. The project also aims to conduct a detailed study of the energy consumption patterns, potential of energy savings and to suggest measures or proposals to achieve better energy efficiency.

Overseas Projects

Production of Filler Pulp from Indian Hardwood

A project entitled "Production of Filler Pulp from Indian Hardwood" has been entrusted to the Institute by D-InkKing Technology, Texas - USA. The objective of the project is to evaluate the potential of three raw materials i.e. Julia Flora, Casuarina (Hardwoods) and Bamboo for production of Duplex boards using Chemi Mechanical Pulp (CPM) of all these three raw material as middle layer and pulp of white cuttings as top layer & pulp of old newspaper as bottom layer.

The GSM of middle layer i.e. CMP was varied from 120 to 170. Sheets prepared in the laboratory were further evaluated for physical strength properties like burst, stiffness & bulk.

TECHNICAL/CONSULTANCY SERVICES

Technical Assistance / Consultancy services were rendered to following Pulp & Paper Mills:

- ❖ Analysis of brown grade pulp samples for M/s VLS Fibre Ltd; Chennai.
- ❖ Repulpability of imported waste paper sample (tissue grade) for M/s Indus Paper Boards (P) Ltd., Nagpur
- ❖ Repulpability of tissue tape as per Tappi UM213 method for M/s Ajit Industries (P) Ltd., Delhi
- ❖ 2 Nos. of samples for Equivalent length factor for M/s Everest Industries Ltd., Haridwar.
- ❖ 2 Nos. of hardwood pulp samples for their strength properties for M/s Parason Machinery

(India) Pvt. Ltd, Aurangabad.

❖ ETP Adequacy Assessment & Hazardous Waste Audit was carried out at following mills:

1. Rayana Paper Board Industries Limited (Unit - I & II) , Khalilabad, Sant Kabir Nagar (U.P.)
2. Sainsons Paper Industries Ltd., Pehowa, District Kurukhsetra, Haryana
3. Century Pulp & Paper Ltd , Lalkuan , Uttarakhand - Hazardous Waste Audit

❖ Effluents / solid waste samples were analyzed for various pollution parameters for following mills/organisations:

1. Bharat Starch Industries , Yamunanagar, Haryana
2. JK Paper Ltd , Rayagada , Orissa
3. Galaxy Papers Pvt. Ltd., Muzaffarnagar, U.P.
4. HPC - Nagaon Paper Mills Ltd, Kagaznagar, Assam
5. JK Paper Ltd (Unit : Central Pulp Mills) , Fort Songadh , Gujarat
6. Bilt (Unit Shree Gopal) , Yamunanagar, Haryana
7. Sainsons Paper Industry Ltd., Pehowa, Haryana
8. The West Coast Paper Mills Ltd, Dandeli, Karnataka

❖ 6 Nos. of water samples were evaluated for Total Coliform and Faecal Coliform collected from different villages of Punjab.

❖ 100 Nos. of samples of black liquor, scale, soil, Lignin, secondary sludge, water, filtrates, effluents, pulp & deposits were analyzed for process, non-process elements and heavy metals.

❖ Energy audits were carried out at following mills:

1. M/s Sardhana Papers (Pvt.) Limited, Sardhana, Meerut, U.P.
2. M/s Rama Paper Mills Ltd, Bijnor, U.P

3. M/s Rana Paper Mills Limited, Muzaffarnagar, U.P.

- ❖ 583 Nos. of Paper & Paper Board samples received from various organizations/ mills were tested for GSM, Thickness, Tensile, Tear, Burst, Opacity, Gloss, (l, a, b values), whiteness, double fold, RCT, smoothness, porosity, formation, bending stiffness, printing properties and fibre furnish etc.
- ❖ 2 Nos. of sample of tile received for calibration was also tested during this period.
- ❖ 17 Nos. of Pulp, Paper & Board Samples were analyzed for Fibre Furnish Analysis.
- ❖ 55 Nos. of Raw Material samples were analyzed for Moisture Content, Proximate Chemical Analysis.
- ❖ 4 Nos. of Rayon Grade Pulp samples from Century Paper Mill, Lalkua Nainital were analyzed for Complete Proximate Chemical Analysis.
- ❖ 1 Nos. of Fibrous Raw Material & White Liquor samples was analyzed for Non Process Element, Alkali solubility as Na₂O.
- ❖ 12 Nos. of Bleached Hardwood Pulp samples from TELPP, Indonesia were analyzed for Fiber Furnish.
- ❖ In the area of recycled fibre processing technical services rendered to five pulp & paper mills and allied industries.

WORKSHOP/SEMINAR/ TRAINING

Workshop Organised

CPPRI organized a workshop on Dissemination of Information on Issues Addressed under Cess Supported R & D Projects at Tagore Chamber, Scope Complex, New Delhi on August 17, 2011. During the first technical session, presentations were made on the outcomes & recommendations of the recently completed projects by CPPRI, Thapar Centre for Industrial Research & Development (TCIRD), IARPMA / NH Consulting Ltd, IIT Mumbai & Tamilnadu Newsprint & Paper Ltd (TNPL).



Shri Rajat Kumar, IAS, Director DIPP, Dr. R.M. Mathur Director, CPPRI & other dignitaries participating in the workshop on dissemination of information on issues addressed under Cess supported R&D projects.

Following projects were discussed.

- ❖ Secondary Sludge Treatment & Disposal in Pulp & Paper Industry (IPMA/ TCIRD)
- ❖ Agro Based Paper Unit's Socio Economic Impact on Rural Economy (IARPMA/ NH Consulting Ltd)
- ❖ Online Batch Digester Monitoring & Control of Kappa Number in Indian Pulp & Paper Mills. (CPPRI/IIT Mumbai)
- ❖ Colour and TDS Removal From ECF Bleach Plant Effluent (IPMA/ TNPL)
- ❖ Data for Amendment in Stiffness Specifications for Different Paper Grades Under BIS Standards (CPPRI)

The second session chaired by Shri Rajat Kumar, I.A.S, Director, Ministry of Commerce & Industry, DIPP, Govt. of India, was dedicated to Conceptualisation of Paper Recycling Model for India to Enhance the Recovery of Waste Paper where in issues related to Waste Paper Recovery in Indian & Global Context and the outcome of a joint study carried out by CPPRI in association with an NGO "Waste 2 Wealth" on Establishment & Demonstration of Waste "Paper Collection, Sorting and Grading System in Delhi region Metropolis in India were presented by CPPRI. Case studies on waste management & recycling initiatives taken up by mills, NGO's & organizations like NEPA, ITC - Ramky & Greenobin Recycling Pvt. Ltd were also presented in the session. While appreciating the efforts being undertaken for increased waste paper reuse, the chairman informed that a policy on waste paper recovery is under preparation and shall be implemented soon to improve the overall waste paper recovery rate and its utilization.

Workshop on Dissemination of Information on Issues Addressed under Cess Supported R& D Projects, August 17, 2011, Scope Complex, New Delhi

Workshop/Seminar/Training Attended

- ❖ Dr. Vimlesh Bist and Dr. Priti S. Lal attended IPPTA Zonal Seminar held on "Raw Material-Handling / Plantation / Storage / Usage)" at Lucknow (Uttar Pradesh) on August 04 - 05, 2011.
- ❖ Dr. V Bist, Dr. R K Jain, Mrs Rita Tandon, Dr. S. Panwar, Dr. B. P. Thapliyal, Dr. M. K. Gupta, Dr. K Singh, Dr. A K Dixit, Dr. S. Mishra & Dr. Nitin Endlay and Dr. Vasanta V Thakur & Sh. Satya Dev Negi attended the Workshop on Dissemination of Information on Issues Addressed under Cess Supported R&D Projects on August 17, 2011 at Scope Complex, New Delhi
- ❖ Dr S. Panwar & Dr. Nitin Endlay attended an International Workshop on PPP Models and Technological Solutions for Sewage and Waste Management organised by consortia of 7 IITs i.e.

IIT- Mumbai, Delhi, Guwahati, Kanpur, Kharagpur, Madras & Roorkee and ETI Dynamics at IIT Delhi on September 22-23, 2011.

- ❖ Dr. B. P. Thapliyal and Shri M. P. Sharma attended the RTI Workshop at Delhi in the month of August.
- ❖ Dr. Shivaker Mishra attended a Training Programme on Collection, Storage, Handling and Disposal of Hazardous Waste sponsored by CPCB and organized by Centre for Environment & Nature Conservation, Department of Zoology, Patna University, Patna, September 10-14, 2011.

Meetings Attended

- ❖ Dr. R. M. Mathur, Dr. R. K. Jain, Dr. V. Bist & Dr. A. K. Dixit participated in series of meetings of the sub-committee of the working group on Raw Materials (Wood based & Non-wood based) for 12th Five Year Plan held at Ministry of Environment & Forests chaired by IG (Forests.)
- ❖ Dr. V. Bist, Dr. R. K. Jain, Dr. B. P. Thapliyal & Dr. A. K. Dixit participated in series of meetings of the sub-committee of the working group on Human Resource Development for 12th Five Year Plan held at New Delhi during July 2011.
- ❖ Dr. R. K. Jain & Dr. A. K. Dixit attended meeting at PCRA, New Delhi for discussions in connection with the new project proposal on "Improved Energy Efficiency through Utilization of Lignin based Biomass from Agro Based Paper Mills" being sponsored by PCRA.
- ❖ Dr. R. K. Jain & Dr. A. K. Dixit attended various meetings at Star Paper Mills to discuss the problem of mill in the area of chemical recovery.
- ❖ Dr. R. K. Jain & Dr. A. K. Dixit attended meeting at Delta Paper Mills for the process audit of Chemical Recovery Systems.
- ❖ Mrs. Rita Tandon, attended series of meetings of the sub-committee of the working group on waste paper at office of Khatema Fibres Ltd; New Delhi.
- ❖ Mrs. Rita Tandon, attended meeting held under

the Chairmanship of Sh. Talleen Kumar, IAS, Joint Secretary, DIPP in connection with preparation of Discussion Paper on "Collection and Recycling of Waste Paper in India" at Udyog Bhawan, New Delhi on August 19, 2011.

- ❖ Mrs. Rita Tandon, attended meeting of Working Group Committee constituted by Planning Commission on Pulp & Paper Sector at Udyog Bhawan; New Delhi on August 24, 2011.
- ❖ Dr S. Panwar & Dr. Nitin Endlay attended a meeting at Muzaffarnagar on September 26, 2011 of Pulp & Paper Mills officials from Kashipur, Muzaffarnagar & Meerut Cluster to discuss the implementation of recommendations and the Action Plan proposed under the CPCB Sponsored study on Techno-economic Feasibility for Setting up of Common Chemical Recovery Plant (CCRP) & Common Effluent Treatment Plant (CETP) for Pulp & Paper Industries Operating in Identified Cluster of Uttar Pradesh & Uttrakhand.
- ❖ Dr. S. Panwar attended meetings of Subcommittee of working group on Energy & Environment constituted by DCPPI at New

Delhi on August 9, 2011 and September 28, 2011

- ❖ Dr. B. P. Thapliyal, Scientist E-II, attended a meeting at BEE and Meeting with Senior Economist advisor at MoCI
- ❖ Dr. B. P. Thapliyal, Scientist E-II attended a meeting on TUFS at Delhi in the month of September.
- ❖ Dr. Sanjay Tyagi, Scientist 'C' visited Printing and Stationary Deptt. U. P. Govt., for attending tender opening meeting at Lucknow and other senior scientists.
- ❖ Dr. R. K. Jain held meeting with the Director, Indian Rubber Manufacturers Research Association (IRMRA), Mumbai in connection with utilization of lignin in rubber manufacturing.
- ❖ Dr. R. K. Jain visited National Chemical Laboratory, Pune & held meeting with Dr. R P Singh & other senior scientists regarding utilization of xylose for furfural production as part of sponsored project by Lignoil Technologies.

LECTURES AND PRESENTATIONS

Presentations

- ❖ R. K. Jain, Vasanta V. Thakur, Dhermander Kumar, Neelam Garg, "Isolation of cellulase producing fungi for industrial application" poster was presented by Mr. Dhermander

Kumar in National seminar on fungal biotechnology held at Forest Research Institute, Dehradun from September 22 - 23, 2011. The poster bagged first poster award.

- ❖ Presentation on "Waste Paper Recovery in Indian & Global Context" was delivered by Mrs. Rita Tandon, Sc F & Head, Paper Recycling, in a special session on Recovery of Waste Paper



Participation of Dr. Vasanta V. Thakur, Sc-'B' Ms. Chetna Gupta, JRF and Mr. Dhermander Kumar JRF in National seminar on fungal biotechnology held at Forest Research Institute, Dehardun from 22-23september, 2011. The poster bagged first poster award.

during one day workshop organized by CPPRI on completed Cess projects held at Scope Complex, New Delhi on August 17, 2011.

- ❖ Dr. B. P. Thapliyal, Scientist 'E-II', and Sanjay Tyagi, Scientist 'C' made Presentation on Kraft Paper Properties at Workshop organized by PDTRL at Moradabad.
- ❖ Dr. Priti S. Lal presented a research paper entitled "Study on Storage Losses and a New Method of Raw Material Preservation for Some Common Hardwoods used by Indian Paper Industry" in IPPTA Zonal Seminar held at Lucknow (Uttar Pradesh) on August 04 - 05, 2011.
- ❖ Dr. Sanjay Tyagi, Scientist 'C' made presentation on "Data for amendment in stiffness specifications for different paper grades under BIS standards" at Cess Workshop held in scope complex, New Delhi on August 16, 2011.

Internal Lectures

- ❖ Mr. Dharmendar Kumar, JRF delivered a lecture on "Bioremediation of Pulp & Paper Mill Effluent" as on July 18, 2011.

REPORTS AND PUBLICATIONS

Reports

- ❖ Reports on Adequacy of Existing ETP for Treatment of Mill Effluent at Rayana Paper Board Industries Limited (Unit - I & Unit - II), Khalilabad, Sant Kabir Nagar (U.P.)
- ❖ Report on Performance Efficiency of Existing Effluent Treatment Plant at Sainsons Paper Industry Ltd., Pehowa, District Kurukhsetra, Haryana.
- ❖ Report on Audit Assessment of Hazardous Waste (Jan 2010 to Dec 2010) generated at Sainsons Paper Industry Ltd., Pehowa, District Kurukhsetra, Haryana.
- ❖ Draft reports of Base Line Energy Audit has been completed for the following four mills and submitted to the respective mills:
 - 1) Sangal Paper Mills, Meerut
 - 2) Sardhana Paper Mills, Meerut

- 3) Rana Paper mills Limited, Muzaffarnagar
- 4) Rama Paper Mills, Bijnore

The consent letters from mills regarding energy saving proposals from all the four paper mills were received and the draft reports were submitted to Energy Efficiency Services Limited, New Delhi.

- ❖ Report on Studies on Control of Evaporators scales in Star Paper Mills.
- ❖ Activities pertaining to Hindi translation of CPPRI Laboratory Manual are in progress. The completed chapters are as under:
 - 1) Analysis of Fibrous Raw Materials
 - 2) Testing of Paper & Paperboard
 - 3) Analysis of Industrial Wastes
 - 4) Analysis of Non Fibrous Raw Materials
- ❖ Hindi translation of "Instrumental Methods of Analysis" is in progress.
- ❖ Interim project progress report on "Utilization of Lignin as industrially useful by products in plywood & rubber industry" submitted to M/s Lignoil Technologies Pvt. Ltd., Mumbai.

Publications

- ❖ Priti S. Lal, Vimlesh Bist, Arvind Sharma, R. M. Mathur "Study on Storage Losses and a New Method of Raw Material Preservation for Some Common Hardwoods used by Indian Paper Industry" published in IPPTA J., 23(3):154-159 (July-Sept., 2011).
- ❖ Vasanta V. Thakur, Vipin Gupta, R. K. Jain, R. M. Mathur "Production of Laccase by Isolated White Rot Fungi And Its Application In Pulp & Paper Industry" Proceedings of National seminar on fungal Biotechnology held at Forest Research Institute, Dehardun from September 22-23, 2011.
- ❖ Vasanta V. Thakur, Chetna Gupta, R. K. Jain, R. M. Mathur "Cellulase production by isolated fungal strains and its application in bio deinking of mix office laser waste." Proceedings of National seminar on fungal biotechnology held at Forest Research Institute, Dehardun from September 22-23, 2011.

INTERACTION WITH INDUSTRY

Visit of Experts

- ❖ Mr. N. (Seenu) Seenivasan, Chief Technical Officer from De-InKing Technology, Texas USA with 2 other Chief Technical Officers visited the Institute on September 26 - 27, 2011 to discuss about the sponsored project.
- ❖ Mr. Anand from Thea-Tex Healthcare (India) Pvt. Ltd., Mumbai (Maharashtra) visited on September 29, 2011 for upcoming project on "Production of Absorbent Pulp from Bamboo.

Visit To Mills & Other Organisation

- ❖ Dr. R. K. Jain, Dr. A. K. Dixit, Sh. Aash Muni Singh & Dr. Tarun Sharma visited M/s Madhya Bharat Papers Limited for conducting the pilot plant trial under the sponsored project of C-FARM, New Delhi.
- ❖ Dr. R. K. Jain, Dr. A. K. Dixit, visited M/s Delta Papers Limited, Bhimavaram for conducting the process audit of chemical recovery section.
- ❖ Dr. R. K. Jain, Dr. A. K. Dixit, Dr. Vasanta Thakur, Sh. Bishambar Pandey & Sh. Vipin Gupta visited M/s Andhra Pradesh Paper Mills Limited for conducting the enzymatic prebleaching trials.
- ❖ Dr. R. K. Jain, Dr. A. K. Dixit, Sh. Aashmuni Singh, & Dr. Tarun Sharma visited M/s Star Paper Mills Limited for conducting the process audit of the chemical recovery boiler.
- ❖ Dr. Vasanta V. Thakur, Mr. B. Pandey and Mr. Vipin Gupta visited Andhra Pradesh Paper Mill, Rajmundry, Andhra Pradesh for mill trial of enzymatic bleaching with commercial enzyme.
- ❖ Mr. B. Pandey, Mr. Vipin Gupta, Mr. Diwakar Pandey and Mr. Dharmendra Kumar visited M/s Star Paper Mill, SRE for the collection of pulp samples for enzymatic prebleaching study.
- ❖ Dr. S. Panwar & Mohd Farid visited Sainsons Paper Industries Ltd., Pehowa, Haryana for ETP Adequacy Assessment & Hazardous Waste Audit.

- ❖ Dr. S. Mishra & Mohd Farid visited Galaxy Papers Ltd, Muzaffarnagar, U.P. for Water Audit.
- ❖ Dr. S. Panwar & Dr. Nitin Endlay visited Arihant Paper Mills Ltd, Muzaffarnagar for ETP Adequacy Assessment.
- ❖ Dr. S. Panwar & Dr. Nitin Endlay visited Bindlas Duplex Ltd, Muzaffarnagar for Technical Services.
- ❖ Dr. Nitin Endlay & Mr. R. P. Singh visited Century Pulp & Paper Ltd, Lalkuan, Uttrakhand for Environmental Monitoring & Hazardous Waste Audit.
- ❖ Mr. R. P. Singh & Mohd. Farid visited Bilt Yamunanagar, Haryana for Environmental Monitoring.
- ❖ Dr. S. Mishra & Mohd Farid visited The West Coast Paper Mills Ltd., Dandeli, Karnataka for Water Flow Meter Calibration.
- ❖ Dr. S. Mishra, Mr. R. P. Singh, Mr. M. S. Pundir, Mr. M. S. Bhandari, Mohd. Farid & Mr. Nitin Mishra visited Deen Bandhu Chottu Ram Thermal Power Plant, Yamuna Nagar, Haryana for Environmental Monitoring on weekly basis.
- ❖ Dr. M. K. Gupta & Mohd. Farid visited Deen Bandhu Chottu Ram Thermal Power Plant, Yamuna Nagar, Haryana for Public Hearing in connection with EIA.
- ❖ Dr. S. Panwar & Dr. S. Mishra visited Rayana Papers Ltd. (Unit I & II), Khalilabad, U. P. for ETP adequacy assessment.
- ❖ Dr. B. P. Thapliyal, Scientist, Dr. S. Tyagi, Sh. Alok Goyal, and Sh. N. K. Naik, visited the following mills and organizations during the quarter.
 1. M/s Sardhana Papers (Pvt.) Limited, Sardhana, Meerut, U.P.
 2. M/s Rama Paper Mills Ltd, Bijnor, U.P.
 3. M/s Rana Paper Mills Limited, Muzaffarnagar, U.P.
- ❖ Dr. B. P. Thapliyal, Scientist visited M/s. Century Pulp & Paper Mills Ltd., Lalkua regarding Energy audit studies.

- ❖ Dr. Sanjay Tyagi, visited the following organization during the quarter
 1. Government Press, Allahabad (U.P.)
 2. Printing and Stationary Department, U. P. Govt., Lucknow
- ❖ Mr. Diwakar Pandey, Mr. Dhermander Kumar visited Indian Institute of Petroleum, Dehradun for conducting fermentation studies of enzyme hydrolosates under the collaborate project with IIP.

PATENTS

Following patents were filed:

- ❖ A Novel Process Design for effective removal of chloride & potassium from the chemical recovery cycle in pulp mill (2011-12).
- ❖ A Novel Process for Biobleaching of Kraft pulps employing laccase & xylanase enzymes and oxygen as mediator (2011-12).

STAFF NEWS

Appointment

Name	Designation	Date of Joining
Shr. Pankaj Kumar Goley	T. O. 'B'	08/09/2011

Congratulations

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