



Central Pulp & Paper Research Institute

केन्द्रीय लुग्दी एवं कागज़ अनुसंधान संस्थान

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News Bulletin on Pulp, Paper and Allied Industries

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CPPRI NEWS BULLETIN

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MANAGEMENT NEWS

Meeting of CPPRI Council of Association (CoA)

The 44th meeting of Council of Association (CoA) of CPPRI was held on September 26, 2013 at Udyog Bhawan, New Delhi. The meeting was chaired by Shri Saurabh Chandra, IAS, Secretary, IPP, Ministry of Commerce and Industry, Govt. of India and President, Council of Association of CPPRI. The meeting was attended by Shri Talleen Kumar, IAS, Joint Secretary, IPP, Mrs. Gauri Karol, Deputy Secretary IF Wing-IPP, Shri Harsh Pati Singhanian, Chairman, DCPPI & MD. J.K. Paper Ltd., Shri Pradeep Dhoble, Executive Director, ITC Ltd., Prof. Y. S. Negi, IIT Roorkee, Saharanpur Campus, Shri Anil Kumar, Executive Director & CEO, Shreyans Industries Ltd., Dr. N. V. Satyanarayana, Representative of IICT, Hyderabad, Dr. P. K. Gupta Representative of DG, ICFRE, Dr. R. M. Mathur, Director CPPRI and special invitees Shri Alok Mukhopadhyay, Dy. Secretary IPP, Shri S. K. Agarwal, Under Secretary IPP & senior scientists from CPPRI.

Meeting of CPPRI Research Advisory Committee

A meeting of Research Advisory Committee (RAC) was held on August 23, 2013 at IPP, Udyog Bhawan, New Delhi. The meeting was chaired by Shri Talleen Kumar, IAS, Joint Secretary, Ministry of Commerce & Industry, IPP to review the progress of ongoing research schemes under XII plan. The project leaders presented the progress and outcomes of various ongoing research schemes. The valuable suggestions made by the members were noted for incorporation in the future work plan.

Meeting of Cess Committee

A meeting of the Cess Committee was held on

August 23, 2013 at Udyog Bhawan, New Delhi. The meeting was chaired by Shri Talleen Kumar, Joint Secretary, Ministry of Commerce & Industry, Government of India. Initiating the proceedings of the meeting, Dr. R. M. Mathur, Director CPPRI presented the progress of the ongoing cess projects and new project proposals for approval. The other members who participated in the meeting were Shri Alok Mukhopadhyay, Shri Arun G. Bijur, Shri R. C. Rastogi, Shri Neehar Agarwal, Shri Sanjay Kumar Singh, Shri Anil Kumar, Shri Pawan Agarwal, Shri N. K. Bhardwaj and Shri R. Narayan Moorthy, other Officials from Ministry of Commerce & Industry, DIPP and representative from IPMA, IARPMA, INMA, ACIRD, IIP and senior scientists from CPPRI also participated in the meeting as special invitee.

Meeting of Development Council for Pulp, Paper and Allied Industries (DCPPAI)

The meeting of the Development Council for Pulp, Paper and Allied Industries (DCPPAI) was held under Chairmanship of Shri Harsh Pati Singhanian, MD, JK Paper Limited, on October 4, 2013 at Udyog Bhawan, New Delhi. While welcoming the Chairman & members of the Development Council, Dr. R. M. Mathur, Director CPPRI, made presentation on the current scenario of Indian Paper Industry covering the major issues. Members expressed their concern particularly on issues related to the availability of degraded forest land for plantation to address the problem of raw material shortage in Indian Paper Industry. The Chairman & members of the Development Council dwelt upon the various pressing issues confronting the Indian Paper Industry such as - rising wood prices, availability of degraded forest land for plantation, skill development etc. Other members who participated in the meeting were Shri Pradeep Dhobale, Shri R.R. Vederah, Shri R. C.

Rastogi, Shri Anil Kumar, Shri Sanjay Kumar Singh, Shri P. S. Patwari, Shri Pramod Agarwal, Shri Satya Pal Gupta and Shri Pawan Khaitan as well as officials from DIPP, IPMA, IRPMA, INMA, JK Paper & senior scientist from CPPRI as special invitee.

RESEARCH AND DEVELOPMENT ACTIVITIES

RAC Projects

Raw Material and Product Development

Utilization of Rice Straw and other Non-Conventional Raw Materials for Production of Various Grades of Pulp

Rice straw (*Oryza sativa*) procured from Chhattisgarh was subjected to combined alkaline and methanol pretreatment under different conditions. Subsequently, the pre-extracted rice straws were subjected to soda-anthraquinone pulping maintaining alkali charge 10%, anthraquinone dosage 0.05%, solid to liquor ratio 1:5, temperature 160°C and time 60 min. Various parameters like Kappa number, brightness, screen yield, viscosity and rejects of pre-extracted rice straw pulp were determined and compared with non-extracted rice straw pulp. Some properties such as pH, RAA and solids content of black liquor obtained from treated and untreated rice straw soda-anthraquinone pulping were also assessed. The pulp from pre-extracted rice straw was low in kappa number, high in brightness, high in yield and rejects except few cases. RAA and total solids content in black liquor obtained from treated rice straw pulping were less in comparison to untreated counterpart. Among various pre-treatment studies, two pretreatment studies were identified to be optimum based on the yield and brightness of corresponding soda-anthraquinone pulps. Large scale pre-treatment of these two selected conditions were carried out and subsequently the pre-extracted rice straw was

subjected to Soda-AQ pulping under process conditions mentioned above. Further, oxygen delignification and DEPD bleaching of pulps were performed and physical strength properties were evaluated.

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

The paper & paperboard products manufactured from Recycled fibre furnish are considered to be inferior in quality in comparison to products made up from virgin fibres. This is mainly because of hornification effect due to repeated recycling and drying which prevents the fibrillation of RCF stock, resulting in poor bonding strength of finished paper products. The use of wet end chemicals particularly polymer based chemicals were also not found to be very effective in improving the bond strength of RCF furnish. It is therefore felt necessary to develop selective approach and customized formulation using different combination of chemical additive, which can improve the fibre characteristics of RCF furnish. Preliminary investigation carried out with different types of Bio-copolymer have revealed that these Bio-copolymers can improve the fibre strength of RCF furnish. Around 10 types of Bio-polymers were selected to study their impact on improving the Water Retention Value (WRV), Zero Span Tensile Strength (ZSTS) and Bursting strength of OCC furnish.

Energy Conservation and Environmental Management

Implementation of Enzyme Application in Pulp & Paper Industry

The project aim to implement the biotechnological applications in pulp & paper industry, pursue the cleaner & green technology and achieve reduced energy requirements, quality upgradation and environmental improvement.



Studies were conducted on isolation and screening of microorganism in order to find the effective strains for enzyme production to treat paper mill effluent. Encouraging results has been obtained in initial studies.

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

Studies were conducted on black liquors collected from non-wood based mills. Characterization of collected black liquors were carried out. Lignins from the black liquors were removed and complete analysis of the lignin and filtrate were carried out. The filtrates mixed with initial black liquors and the complete analyses were carried out in order to see its suitability for processing in chemical recovery system. Further studies are being continued, however initial studies have shown that 10-15% capacity expansion may be achieved.

Water Conservation through Application of Kidney Technologies in Pulp and Paper Industry

1. Laboratory studies on various physico-chemical treatment options for treatment of waste water

Preliminary studies conducted with physico-chemical treatment & activated carbon filter. Initial results indicate:

- ❖ Reduction up to 50-60 % in COD & 85-95 % in color could be achieved by chemical treatment using Alum, Ferric Chloride and Polymers.
- ❖ Reduction up to 60-70 % in COD, 25-35 % in TDS and 85-90 % in color could be achieved by activated carbon filter.

2. Mill Study

A detailed study was carried out at a waste paper

based mill, to evaluate feasibility of zero liquid discharge status achieved with the present quality of paper and paper board. Lab scale studies were carried out on assessment of pollution load generated from waste paper used, additives, chemicals and carry over with finished paper for calculation of material balance, water balance and build-up of TDS due to recycling and reuse of back water. Simulation studies related to accumulation of maximum TDS & COD concentration to maximum extent due to zero discharge at PSB Paper Mill were also evaluated.

Infrastructure Development and Capacity Building Activities

Setting up of Paper Board and Speciality Paper Testing Facility at CPPRI

The literature survey regarding the different test standards for testing of paper board and specialty paper were carried out. Large number of end users, paper board manufacturers and equipment suppliers were interacted for the finalization of specifications of instruments need to be procured for setting up the testing facilities in the area of paper board and specialty paper at CPPRI.

Strengthening of Training and HRD Infrastructure in Pulp, Paper and Allied Industry

- ❖ Two personnel from Visaka Industries Ltd., Pune were given training in stock preparation laboratory in Pulp Evaluation & Baur McNett Classification.
- ❖ One month training was imparted to two students in Pulp and Papermaking from Dr. B. Rao Ambedkar University, Agra and Institute of Professional Studies, Indore.
- ❖ Training was given to M.Sc. students of cellulose & paper technology in refining, sheet making and Bauer McNett Classification.
- ❖ Twelve technical personnel from organizations such as BRBMPL Bangalore (Karnataka), Visaka

Industries Ltd., Secunderabad (A.P.) were trained in the areas of paper testing, pulp and papermaking, pulp evaluation.



Dr. Vimlesh Bist Sc. F, distributing the Certificate to the trainees



Participants from BRBMPL Bangalore (Karnataka), in training programme on "Paper Testing Procedures as per ISO Guidelines" with CPPRI Scientists

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

The activities 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 & unit processes to the optimum level. Three training programmes were organized as part of the project activities.



Dr. Vimlesh Bist Sc. F, CPPRI, Dr. R.M. Mathur, Director CPPRI, & Mr. Pawan Aggarwal MD Naini Paper Mills Ltd. Chief Guest during the Session of 12th Cess training programme on July 24, 2013.

12th Cess training programme on "Utilization of Agro-residue Fibres in Indian Paper Industry" was organized at Mahatma Gandhi State Institute of Public Administration Punjab, Chandigarh (UT) from July 24-26, 2013. There were 35 participants from agro based paper mills and Academic Institutions. Total 15 lectures were delivered during three day programme by internal and guest faculty covering all aspects of papermaking using agro residue raw material. This training program focused on area like: raw material handling & storage of nonwood raw materials, structural variations in fibre sources & their influence on fibre line operations, pulping, bleaching and washing practices, preservation of strength in agro-residue pulps, status of technology and opportunities for resource conservation in agro-based paper mills, effluent treatment practices in agro-based mills, biorefinery approach in utilization of agro residue pulps, and competitiveness of agro-based mills in new economic and globalization era.

Sponsored Projects

Additive Pulping of Accacia - Sponsored by Ashland Singapore Pte.Ltd.

The sponsored project entitled "Additive pulping of Accacia" was entrusted by Ashland Singapore Pte. Ltd. The project activities included studies on effect of cooking and washing additives on various pulp properties viz kappa number, unscreened pulp yield, viscosity, brightness, etc. The raw material and additive samples were sent by Ashland Singapore Pte. Ltd. The project activities are in progress.

Improved Digestibility of Lignocellulosic Residue - Rice Straw for Enhanced Biogas Production- Sponsored by DSM Innovation Ltd.

The project aim is to optimize the process conditions of pre-treatment process for enhanced

digestibility of Rice Straw for bio-methanation. Proximate analysis of the received rice straw was carried out. Studies are continued on pre-treatment.

Desilication of Rice Straw Black Liquor - Sponsored by M/s Rakta Paper Mill, Egypt

The objective of the project is to remove the silica from the rice straw black liquor with desilication technology developed by CPPRI at Rakta Paper Mill Egypt. Studies were conducted at CPPRI and on finding initial encouraging results Pilot Plant trials were conducted at mill site in Egypt.



Technical Presentation of the findings of the Desilication Pilot Trial by CPPRI to the senior officials of the General Paper Co. Ltd, Rakta and DIS Industrials, Germany



Demonstration of the Pilot Scale Trial to the Chief Executive of the holding Company, General Paper Co. Ltd., Rakta, Mr. Houssam, DIS Industrial Germany by CPPRI at Rakta, Egypt

Dr. R.K. Jain & Dr. A.K. Dixit visited Rakta Paper Mill, Egypt and performed the desilication trials on pilot plant scale. The results were highly encouraging. Discussion is going on for technology transfer to the mill.

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

The objective of the project is to explore enzymatic refining process for cotton comber to improve the pulp quality, drainability and to reduce energy during refining. Lab trial and plant trial (Breaker beater), studies have been successfully done at Security Paper Mill, Hoshangabad, (M.P.). The results have shown 15-20% reduction in energy demand during refining.

Evaluation of DSR's (3 nos.) to Improve Physical Strength Properties of Different Grades of Paper - Sponsored by ION Exchange (India) Ltd., Hyderabad, Andhra Pradesh

On the request of ION Exchange (India) Ltd., Hyderabad, evaluation of three samples of Dry Strength Resin (DSR) were carried out on four different furnishes i.e. 100% OCC furnish, 100% DIP furnish (ONP/OMG), Wheat Straw/ Hardwood furnish (90%/ 10%) and RCF based multilayer Duplex board.

The three DSR's were characterized as highly anionic (-718 mV) moderately anionic (-437 mV) and slightly cationic (+59 mV). Performance evaluation studies revealed that in OCC furnish highly anionic DSR improved the strength properties with acid sizing chemicals. With DIP furnish use of DSR with Retention Aid was found to improve Bursting strength by 25%. With Wheat Straw/ Hardwood furnish, the DSR with moderate anionicity performed better with AKD sizing showing 11% improvement in Bursting strength and 54% improvement in breaking length.

Evaluation of Deinking Collector Performance in Newsprint and Writing/ Printing Furnish- Sponsored by NALCO Water India Ltd., Chennai, Tamilnadu

NALCO Water India Ltd., Chennai sponsored a project on Evaluation of Deinking collector performance with the product developed by them in comparison to standard product being used by mills. The study was conducted on Newsprint

furnish comprising on ONP (55%), Special news paper (15%), White record (15%) and POC (15%) as well as on Writing/ Printing furnish comprising of Notebook (30%), CBS (30%), POC (30%) and SOP (10%). The performance of Deinking collectors was found to be better than standard chemical.

Energy Audit Studies at Katyayini Paper Mills Private Limited Kashipur, U.K. - A team of Scientists and Engineer of CPPRI visited M/s Katyayini Paper Mills Pvt. Limited during the period December 2-6, 2013 for conducting Energy Audit Studies.

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

The project entitled "Indexing, Digital Abstracting and Digitisation of IPPTA Aricles/ Publications" awarded by IPPTA to CPPRI. The progress of the said project is as under.

Progress:

- ❖ E-library portal has been design and developed for IPPTA. Database of 47 years of Research articles/ publications of IPPTA (since 1965 - 2012) have been created.

- ❖ Scanning of the articles of last 20 years (i.e. 1992 - 2012) have been completed.

Stickies Audit at DIP-3 and PM-3- Sponsored by Emami Paper Mills Ltd., Balasore, Odisha

On the request of Emami Paper Mills Ltd., Balasore (Odisha), stickeis audit was carried out at DIP-3 and PM-3 line. The objective was to assess the performance of stickies control agent used by the mill and to ascertain the level of accumulation of stickies in the process as well as in the process back water circuit. CPPRI scientists visited the mill and collected the samples from different locations to conduct stickies profiling across the process line. Quantification of microstickies in process loop and back water circuit was done. Studies revealed that stickies control agent, which is a detackifier was found to be effective as it reduces the macrostickies area and counts from storage tower outlet to machine chest by 61% and 40% respectively. There is an introduction of macro and microstickies concentration from wet broke chest and recovered fibre chest. There is also a buildup of microstickies concentration in the back water recirculation loop which could cause deposition problem due to system disturbance.

Other Sponsored Projects

| S.No. | Sponsored Projects | Sponsoring Agency |
|-------|--|---|
| 1. | Optimization of Pulp and Paper Making Potential of Merantiwood. | M/s J.K. Paper mill Limited, Unit CPM P.O. Central Pulp Mill, Fort Songadh, Gujarat |
| 2. | Optimization of Pulping Conditions of Teased Gunny | M/s Yash Papers Limited, Yash Nagar, Faizabad, Uttar Pradesh |
| 3. | Prefeasibility Study on Opting Elemental Chlorine Free (ECF) Bleaching as a Replacement of Conventional Elemental Chlorine (CEpHH) Bleaching | M/s Naini Tissues Limited, Kashipur, Uttarakhand |
| 4. | Optimization study for production of the BCTMP (Mehia Dubia) | M/s Tamilnadu Newsprint and Papers Ltd., Karur, Tamilnadu |
| 5. | Evaluation of pulp and papermaking potential of imported hard wood | M/s JK Paper Ltd., Unit: JKPM Jaykaypur, Distt. Rayagada, Odisha |
| 6. | Evaluation of Digester and Oxygen delignification additives using Acacia wood sample | M/s Ashland Water Technologies Jakarta Selatan, Indonesia |



TECHNICAL /CONSULTANCY SERVICES

Following technical/consultancy services were provided to various Pulp, Paper and Allied Industries for the period July - December, 2013 by the Institute. Details are as under:-

- 1) 1160 Nos. of Paper, Paper board, newsprint etc. sample were evaluated for different properties like gsm, brightness, whiteness, tensile, thickness, bulk, breaking length, MD/CD tear factor, smoothness, cobb, opacity, stiffness, Fold Endurance, Burst Index, Fiber Characteristics and Furnish Analysis.
- 2) 30 Nos. of raw material samples were analysed for moisture content, proximate chemical analysis and viscosity.
- 3) 34 Nos. of black liquor, pulp, paper, lignin, lignosulphonate, raw materials & lime sludge samples were analysed for various properties.
- 4) 83 Nos. of black liquor, lime sludge, rice husk, water samples, pulp, scales, coal, effluent, lignin samples were analysed for various Elemental properties viz. Fe, K, Ca, Na, Mg, Hg, Ni, Al, Zn, Ti, C, H, N, S, Lignin purity and Lignosulphonate purity.
- 5) 93 Nos. of pulp samples were evaluated for refining and handsheet making.
- 6) Technical services were rendered to the 35 mills and organizations by analyzing their effluents, ground water and solid waste samples and carrying out air monitoring studies for various pollution parameters.
- 7) Technical consultancy services rendered to two Paper Mills for pulp evaluation.
- 8) Calibration of PFI mill, FRI, Dehradun, Uttarakhand.
- 9) Evaluation of market RCF pulp/ moulded tray for fibre quality
 - ❖ VLS Fibre, Chennai, Tamilnadu.
 - ❖ Jai Traders, Chennai, Tamilnadu.
 - ❖ Everest Industries Ltd., Distt. Haridwar, Uttarakhand.
 - ❖ Everest Industries Ltd., Nashik, Maharashtra.
- 10) Repulpability of Waste paper/ Paper adhesive tape
 - ❖ Intek Tapes Pvt. Ltd., Bangalore, Karnataka.
 - ❖ Seascope Pulp & Papers Pvt. Ltd., Mumbai, Maharashtra.
 - ❖ Solis Global Solution, Dehradun, Uttarakhand
- 11) Evaluation of Dry Strength Additives in OCC, Newsprint furnish, Writing/ Printing furnish and Duplex
 - ❖ ION Exchange (India) Ltd., Hyderabad, Andhra Pradesh.
- 12) Evaluation of Deinking chemical
 - ❖ NALCO Water India Ltd., Chennai, Tamilnadu.
- 13) Stickies Audit
 - ❖ Emami Paper Mill Ltd., Balasore, Odisha.
 - ❖ Shree Rama Newsprint Ltd., Surat, Gujarat.
- 14) Evaluation of Stickies control agent
 - ❖ Thermax Ltd., Pune, Maharashtra.
- 15) Evaluation of AKD samples
 - ❖ Paper Tex Specility Chemicals, Amritsar, Punjab.
- 16) Analysis of Talc/soap stone powder for abrasion value
 - ❖ Kumaon Geosource Pvt. Ltd., Haldwani Uttarakhand.
 - ❖ S. N. Pandey & Company, Kanpur, Uttar

Pradesh.

- ❖ Balaji Enterprises, Haldwani, Nainital, Uttarakhand.
- ❖ Kohinoor Talc Industries, Haldwani, Nainital, Uttarakhand.

17) Analysis of sludge collected from primary combined effluent treatment plant (CETP)

- ❖ Vapi Waste & Effluent Management Co. Ltd., received through Daman Ganga Recycled Resources Ltd., Vapi, Gujarat.

18) Evaluation of polysaccharides for improving the strength properties of OCC furnish

- ❖ Goodrich Agrochem Pvt. Ltd., Karnal, Haryana.
- ❖ Serix Specialities, Surat, Gujarat.
- ❖ Indra AgroTech Pvt. Ltd., Mumbai, Maharashtra.

19) Evaluation of raw material (RCF) consignment for moisture, microbial/fungal attack and deterioration in physical strength properties

- ❖ Pragati Paper Industries Ltd., Mohali, Punjab.

WORKSHOP/SEMINAR/MEETINGS

CPPRI Scientists visited different organisations to participate in the following meetings:-

1. Ministry of Commerce and Industry, Udyog Bhawan, New Delhi attended the meeting of CoA, RAC, Cess committee, Development Council of Pulp Paper Allied & Industries and issues related to paper industry.
2. Energy Efficiency and Services Limited, New Delhi attended the meeting regarding Form -I, finalization of SEC on July 4, 2013.
3. IGNOU, New Delhi, attended the meeting regarding finalization of technical specification for purchase of paper and paper board on July

12, 2013.

4. Bureau of Energy Efficiency (BEE) Ministry of Power, Govt. of India and Energy Efficiency Services Limited (EESL) New Delhi attending Sub-committee Meeting regarding development of normalization factors in energy consumption for pulp and paper sector on July 16, 2013.
5. Attended a Round Table Meeting on Recycle and Reuse of Effluent Water in the Paper Pulp Industry, organized by ETI Dynamics & IIT Kanpur at New Delhi on August 8, 2013.
6. Attended BDT project meeting & FSSAI meeting at New Delhi on September 2, 2013 & September 9, 2013.
7. Naini Tissues Ltd., & University of Kurukshetra for Green Chemistry initiative & BOS meeting on September 29, 2013 & October 8, 2013.
8. Printing and Stationary Department Haryana, Chandigarh attended a meeting as a member of tender technical committee on October 23, 2013.
9. MPD Department IGNOU, New Delhi for attending two meetings of tender opening and evaluation committee (TOEC) on November 12, 2013.
10. Nexent, New Delhi attended the meeting to submit the document of normalization study on November 30, 2013.
11. NIC, DIPP, at Udyog Bhawan New Delhi attended the meeting regarding discussion about IT requirements.

CPPRI Scientists participate in the following Workshop/Seminar:-

1. 12th Cess Training Programme held at Mahatma Gandhi State Institute of Public Administration Punjab, Chandigarh on July 24-

26, 2013.

2. IPPTA Zonal Seminar held at Aurangabad on August 1-2, 2013.
3. One day Workshop on Chemical Recovery by M/s Metso India Pvt. Ltd. at New Delhi on October 23, 2013.
4. Paperex-2013 11th International Conference on Pulp, Paper, Conversion and Allied Industries held at Pragati Maidan, New Delhi on October 24-26, 2013.
5. IPPTA workshop "On Machine, Clothing and its Role in Paper Making for Quality and Cost" at Jaipur on November 14-15, 2013.
6. Short term training program on "Basics and Applications of Computational Fluid Dynamics" organized by Department of Mechanical Engineering, Thapar University, Patiala.

LECTURES & PRESENTATION

1. Mrs. Rita Tandon, Scientist 'F' presented a paper on "Stickies Audit in Recycled Mills- CPPRI's Approach" during IPPTA Zonal Seminar held at Aurangabad on August 1-2, 2013.



Mrs. Rita Tandon, presenting paper in IPPTA Zonal Seminar.

2. Mrs. Rita Tandon, Scientist 'F' presented paper on "Waste Paper Collection Mechanism in India-Current Status & Future Requirement" during IPPTA Zonal Seminar held at Aurangabad on August 1- 2, 2013.
3. Dr. B. P. Thapliyal, Scientist E-II, present the lecture on "PAT of implementation in pulp and paper industry" at Japan on August 2013.
4. Dr. R. M. Mathur, Director CPPRI presented a paper on "Status of Indian Paper Industry" at 11th International Conference on Pulp, Paper, Conversion and Allied Industries held at Pragati Maidan, New Delhi, October 24- 26, 2013.
5. Mrs. Rita Tandon, Scientist 'F' presented paper on "Role of Natural Additives to Improve Fibre-Fibre Bonding Potential of Papermaking Furnishes" in Paperex-2013 Technical Conference on Global Pulp and Paper Industries: Problems and Prospects held at Pragati Maidan, New Delhi on October 24- 26, 2013.
6. Dr. B. P. Thapliyal, Scientist 'E-II' presented paper on "Prediction of Base Paper and Pigment Size Characteristics on Properties of Coated Papers" at 11th International Conference on Pulp Paper, Conversion and Allied Industries held at Pragati Maidan, New Delhi, October 24-26, 2013.
7. Dr. R. M. Mathur, Director also chaired a Technical Session on By Products and Diversification of Pulp & Paper Mills at 11th International Conference on Pulp, Paper, Conversion and Allied Industries held at Pragati Maidan, New Delhi, October 24- 26, 2013.



Dr R. M. Mathur chairing the technical session at Paperex 2013

8. Dr. Sanjay Tyagi, Scientist 'C' presented paper on "A review on developments in paper machine clothing for achieving higher energy savings " in IPPTA workshop on " Machine clothings its role in paper machine for quality and cost " held at Jaipur on November 14-15, 2013.
9. Under 12th Cess Training Programme following lectures were delivered by scientists:-
 - ❖ "Status of Pulping Practices in Agro Residue Based Mill" - Dr. Vimlesh Bist.
 - ❖ "Wet End Chemistry of Agro Based Mill" - Mrs. Rita Tandon
 - ❖ "Morphological Characteristics of Agro Residue Fibres and their Impact on Paper Properties" - Dr. B. P. Thapliyal and Dr. R. D. Godiyal
 - ❖ "Solid Waste Management in Pulp & Paper Industry" - Dr. M. K. Gupta
 - ❖ "Air Pollution Control in Pulp & Paper Industry" - Dr. S. Mishra
 - ❖ "Advances in Bleaching Technologies in Agro Residue Based Mills" - Dr. Priti S. Lal
 - ❖ "Environmental Compatibility of Agro Based Pulp & Paper Mills - An Overview" - Dr. Nitin Endlay
 - ❖ "Understanding Basics for Efficient ETP Operation" - Dr. Nitin Endlay

- ❖ "Washing Practices in Agro Mills" - Dr. Sanjay Tyagi
- ❖ "Raw Material Handling, Storage & Fibre Morphology" - Shri Arvind Sharma

REPORTS AND PUBLICATIONS

Reports

1. Report on implementation of charter for water recycling & pollution reduction in Pulp & Paper Industries of Ganga River Basin
2. Adequacy of existing effluent treatment plant for treatment of mill effluent generated after proposed capacity expansion at Rama Paper Mills Ltd., Kiratpur, District Bijnor, Uttar Pradesh.
3. Adequacy of existing effluent treatment plant for treatment of mill effluent from proposed use of agro residues along with wood & waste paper at Star Paper Mills Ltd., Paper Mill Road, Saharanpur, Uttar Pradesh.
4. Adequacy of existing effluent treatment plant for treatment of mill effluent from proposed use of agro residues at Vishvakarma Paper & Board Ltd., Ramnagar Road, Kashipur, Uttarakhand.
5. Adequacy of existing ETP for treatment of effluent from proposed capacity expansion (175tpd) at Sahota Papers Ltd., Jaspur, U. S. Nagar, Uttarakhand.
6. Adequacy of existing ETP For treatment of effluent from proposed capacity expansion (50 tpd) at Sagar Pulp & Paper Mills Ltd., Village - Mundet, Haridwar, Uttarakhand.
7. Adequacy of existing ETP For treatment of effluent generated from 140 tpd paper productions at Fibermax Papers Ltd, Kashipur Road, Jaspur, Kashipur, Uttarakhand.
8. Adequacy of existing effluent treatment plant



for treatment of mill effluent generated from existing production capacity (70 tpd , Agro : Waste Paper: 20 : 80) and after proposed capacity expansion (180 tpd, Agro : Waste Paper: 65 : 35) at Silverton Papers Ltd., Muzaffarnagar, Uttar Pradesh.

9. Audit assessment of hazardous waste generated at Siddharth Papers Limited, Kashipur, Uttarakhand.
10. Audit assessment of hazardous waste generated at Siddharth Papers Limited (Unit - II), Kashipur, Uttarakhand.
11. Audit assessment of hazardous waste generated at Siddeshwari Papers Limited, Kashipur, Uttarakhand.
12. Audit assessment of hazardous waste generated at Vishvakarma Paper & Boards. Ltd., Kashipur, Uttarakhand.
13. Project report on "Prefeasibility Study on Opting Elemental Chlorine Free (ECF) Bleaching as a Replacement of Conventional Elemental Chlorine (CEpHH) Bleaching" was by sponsoring agency M/s Naini Tissues Limited, Kashipur (U.K.) Project report activities are in progress.
14. Project report on "Evaluation of pulp and paper making potential of imported hard wood" was sponsored by M/s J.K. Paper Mill Limited, Unit JKPM. Project report activities are in progress.

Publications

1. Kumar Anupam, Priti S. Lal, Vimlesh Bist, Arvind Sharma, Vinay Swaroop. **"Raw Material Selection for Pulping and Papermaking using TOPSIS Multiple Criteria Decision Making Design"**, Environmental Progress & Sustainable Energy, DOI 10.1002/ep, August, 2013.

2. Priti S. Lal, Vimlesh Bist, Arvind Sharma, Vinay swaroop. **"Utilization of Soda ash in pulping and bleaching operation as a substitution or partial replacement of sodium hydroxide"**. Journal of Forest Products & Industries, 2(5) September 2013, pg. 5-12.
3. Dr. Sanjay Tyagi, Dr. B.P. Thapliyal, Prachi Kaushik and Dr. R.M. Mathur, **"Prediction of base paper and pigment size characteristics on properties of coated papers"** - a technical paper published in proceedings of 11th International Technical Conference on Pulp , Paper Conversion and Allied Industries " Paperex - 2013, pg.181-190.
4. Dr. Sanjay Tyagi, Dr. B. P. Thapliyal and Dr. R. M. Mathur. **"A review on developments in paper machine clothing for achieving higher energy savings "**, published in IPPTA, 25(4), Oct. - Dec. 2013

INTERACTION WITH INDUSTRY

International Visits of CPPRI personnel during the period from July 2013 to December 2013.

- ❖ Dr. R. K. Jain & Dr. A. K. Dixit visited M/s Rakta Paper Mill, Egypt for pilot plant trials on desilication of rice straw black liquor under the DIS Industrial Solutions sponsored project.

Visits to Mill and Other Organisations

CPPRI officials visited following mills and other organisations:-

1. ETP adequacy
 - ❖ Silverton Papers Ltd., Muzaffarnagar, Uttar Pradesh.
 - ❖ KR Paper Ltd., Sahajahanpur, Uttar Pradesh.
2. Environmental Monitoring
 - ❖ DCRTPP, Yamuna Nagar, Haryana
 - ❖ Century Pulp and Paper Ltd., Lalkuan, Uttarakhand.

- ❖ Shreyans Industries Ltd., Punjab.
 - ❖ Exide Industries Ltd., Rewari, Haryana.
 - ❖ Bilt, Yamuna Nagar, Haryana.
3. Hazardous Waste Audit
 - ❖ Sidharth Papers Ltd., Kashipur, Uttarakhand.
 - ❖ Visvakarma Paper & Board Ltd., Kashipur, Uttarakhand.
 - ❖ Sidharth Papers Ltd., Unit -II Kashipur, Uttarakhand.
 - ❖ Siddheswari Paper Udyog Limited, Kashipur, Uttarakhand.
 4. CPCB Charter Compliance Verification
 - ❖ Garg Duplex. Muzaffarnagar, Uttar Pradesh.
 - ❖ Rana Paper Mills Muzaffarnagar, Uttar Pradesh.
 - ❖ Bindlas Paper Mills. Muzaffarnagar, Uttar Pradesh.
 5. RAC project & Consultancy services
 - ❖ M/s PSB Papers Ltd., Bajpur, Uttarakhand
 - ❖ M/s Gangotri Paper Mill, Roorkee, Uttarakhand.
 6. M/s Ashok Paper Mill, Darbhanga, Bihar for Identification of Scrap and Redundant Material as per list prepared by sub-committee constituted by monitoring committee for revival of the mill under implementation of scheme approved by Hon'ble Supreme Court of India.
 7. Shri Annamaliyar Paper Mills, Madurai, Tamilnadu for Newsprint Paper Sample Collection.
 8. M/s West Cost Paper Mill Ltd., Karnataka for Water Flowmeter Calibration.
 9. M/s Genus Industries, Moradabad, Uttar Pradesh for Water Audit
 10. Shree Rama Newsprint Mills Ltd., Surat, Gujarat for Stickies Audit.
 11. ICFRI, Dehradun, Uttarakhand for discussion with Director on the issue of raw material.
 12. Chemical Recovery
 - ❖ Harihar Polyfibers Ltd., Haveri, Karnataka.
 - ❖ M/s Bindlas Duplex, Muzaffarnagar, Uttar Pradesh.
 - ❖ M/s Garg Duplex Ltd., Muzaffarnagar, Uttar Pradesh.
 13. M/s Security Paper Mill, Hoshangabad, Madhya Pradesh for lab trial and plant trial studies.
 14. M/s Value Addition Papers Pvt. Ltd., New Delhi for pilot plant trials on utilization of lignin as lignosulphonate under the PCRA sponsored project titled "Improved Energy Efficiency through Utilization of Lignin based Biomass from Agro Based Paper Mills".

VISITORS

International

1. Mr. Hussaam Dawood, DIS Industrial GMBH, Germany visited CPPRI to finalize the modalities for transfer of technology to M/s DIS Industrial on "Desilication of Rice Straw Black Liquor".
2. Dr. J. Felligi, consultant Slovak Republic visited CPPRI on October 22, 2013 in connection with deliver Guest Lecture.

National

1. Dr. Dietmar Laudert, R&D manager and Dr. S. Vyas of DSM India Private Limited, visited CPPRI for discussion about the project "Pre-treatment of Lignocellulosic Residues for Bio-methanation (Rice Straw)" on November 12, 2013.

2. Dr. Vimal Kumar, Director CFARM, visited CPPRI to discuss colour reduction process by employing fly ash on December 11, 2013.
3. Shri Alok Mukhopadhyay, Deputy Secretary, DIPP, Ministry of Commerce & Industry visited CPPRI to see the facilities of the Institute.
4. Shri S.K. Agarwal and Shri Naresh Kumar, Century Pulp and Paper, Lalkuan.
5. Shri Jayamohan & Shri Ashtamoorthy, CMRL, Cochin to signed MoU.
6. Dr. Narender Sharma, Kuantum Papers Ltd., Sailakhurd Punjab.
7. Shri Zulfiqar Ali, Prolific Papers Ltd., Kashipur.

MoU Signed

The MoU for joint technical collaboration between Cochin Minerals & Rutile Ltd., Cochin & CPPRI was renewed for next three years on August 13, 2013.



Signing of MoU between CMRL, Cochin & CPPRI

Participation in Paperex 2013

CPPRI actively participated in Paperex 2013 held at Pragati Maidan, New Delhi to showcase its expertise, R & D activities in various areas of papermaking like raw material up-gradation, pulping and bleaching, stock preparation and papermaking, product development, chemical recovery, environmental management, bio-technology, human resource/skill development etc.

CPPRI stall attracted visitors from various pulp,

paper and allied industries, technology and chemical suppliers, technocrats, academicians, paper traders etc. from India & abroad.



View of CPPRI Stall in Paperex 2013

CPPRI INSTITUTE MEMBERSHIP

CPPRI welcome the new members, Kaygaon Paper Mill Ltd., Aurangabad and Everest Industries Ltd., Nashik becoming the part of our membership brigade.

GUEST LECTURE

A Guest Lecture was organized by CPPRI on October 22, 2013 on the topic "Trends in Paper Research". Dr. J. Fellegi Consultant; Slovak Republic delivered the lecture. This was a part of pre foundation celebration of CPPRI. Former Directors of CPPRI viz. DR. R. Pant & Dr. Panda along with retired senior scientist Dr. S. K. Kapoor, Sh. V. K. Mohindru and Sh. G. C. Agarwal were also attended the Guest Lecture. CPPRI scientists, technical & project staff also attended the Guest Lecture.



Dr. J. Fellegi, Consultant Slovak Republic with Dr. R. M. Mathur, Director & Scientists of CPPRI

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STAFF NEWS

Retirement

Name: Shri J. S. Panwar
Designation: Technical Grade VI
Date of Retirement: 30/11/2013

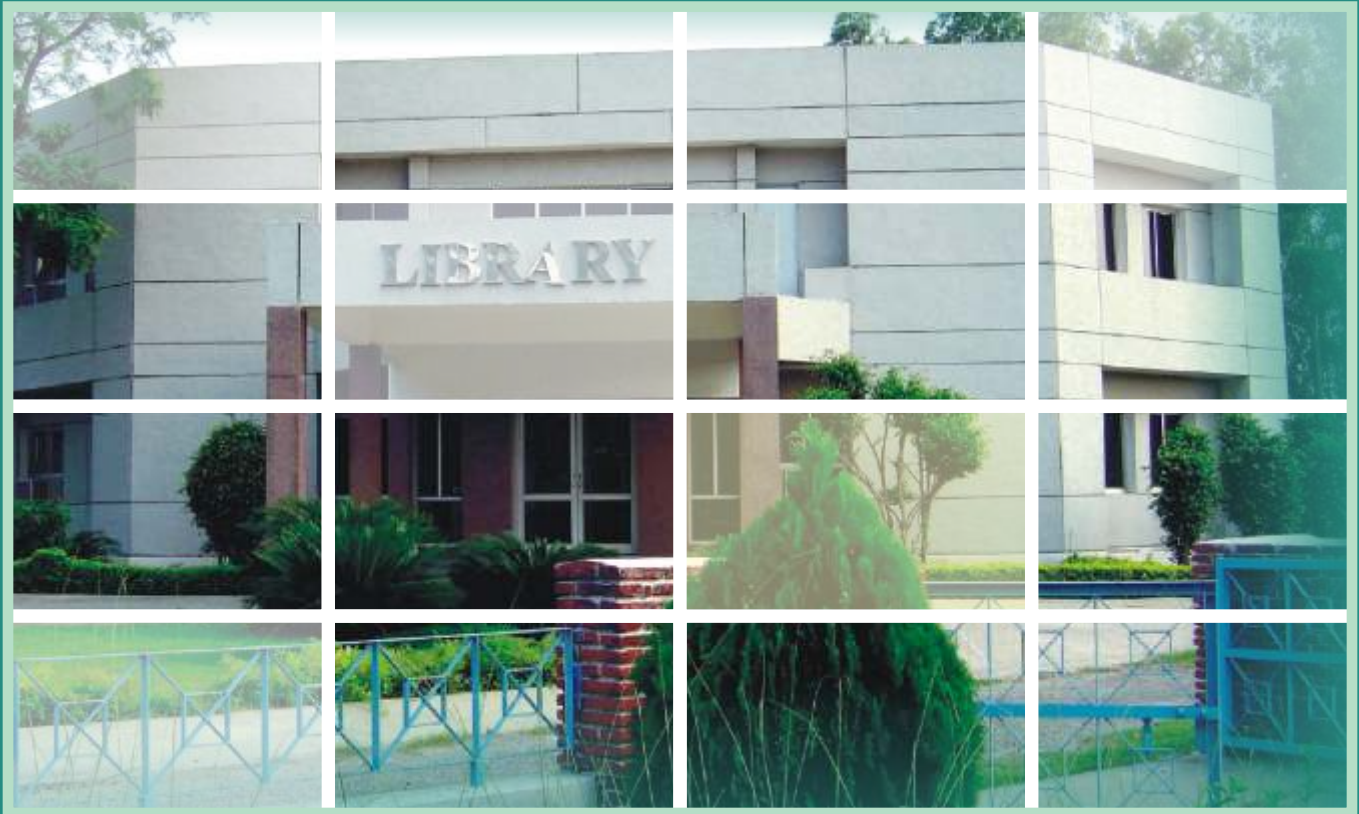
ABSTRACT

Anupam, K., Lal, P. S., Bist, V., Sharma, A. K. and Swaroop, V. (2013), **Raw material selection for pulping and papermaking using TOPSIS multiple criteria decision making design.** Environ. Prog. Sustainable Energy. doi: 10.1002/ep.11851

Abstract: General approach for determining the suitability of a feedstock for pulping and papermaking includes chemical-morphological analysis, cooking experiments, pulp characterization, and physico-chemical properties evaluation. This work attempts to simplify this raw material selection problem using a multi-criteria decision making (MCDM) approach exclusively on the basis of chemical-morphological analysis. Technique for order preference by similarity to ideal solution (TOPSIS) has been applied to the decision making unit comprising chemical and morphological characteristics of three Eucalyptus and Leucaena varieties to evaluate and rank them according to preference for pulping and papermaking. The applicability of the proposed methodology has been illustrated through three examples collected from literature. Results obtained in this investigation are in confirmation of the results published in literature. It reveals that the proposed method is practical, feasible, and easy to apply for pulp and paper based raw material selection. © 2013 American Institute of Chemical Engineers Environ Prog, 2013.

स्वतंत्रता दिवस - 2013

15 अगस्त 2013 को स्वतंत्रता दिवस के उपलक्ष में संस्थान के निदेशक डा. आर. एम. माथुर ने स्वतंत्रता दिवस की 66वीं वर्षगांठ पर संस्थान के सभी लोगों को हार्दिक बधाई दी। निदेशक महोदय ने अपने संदेश में कहा कि भारत ने स्वतंत्रता के लिए एक लम्बी और कठिन यात्रा तय की है, परन्तु आज आज़ादी को परिभाषित करना बहुत मुश्किल हो गया है। आज हर व्यक्ति अपनी आज़ादी की सीमा स्वयं तय करता है फिर भी आज़ादी का सच्चा अर्थ है विकास के पथ पर आगे बढ़कर समाज को ऐसी दिशा देना है जिससे हमारे देश की संस्कृति की खुशबू चारों ओर फैल सके, इसके लिए हमें अपने अधिकारों के साथ साथ उन कर्तव्यों का पालन करना भी ज़रूरी है जिससे देश और समाज का विकास एक साथ हो सके। 12वीं पंचवर्षीय योजना का उल्लेख करते हुए निदेशक महोदय ने कहा कि संस्थान की 12वीं पंचवर्षीय योजना की सभी परियोजनाओं को योजना आयोग और भारत सरकार की उच्च समितियों से संचालन की स्वीकृति मिल चुकी है जिन्हें कुशलतापूर्वक पूर्ण करना हमारा प्रथम ध्येय होना चाहिए। ताकि देश के विकास में हमारा भी कुछ योगदान हो सके चाहे वह छोटा सा ही क्यों न हो। संस्थान इस पंचवर्षीय योजना में एक प्रशिक्षण केन्द्र का निर्माण भी करने जा रहा है। जिसके लिए आवश्यक नीतिगत औपचारिकताएं पूरी की जा रही है। इस केन्द्र के निर्माण के बाद संस्थान शिक्षा के क्षेत्र में भी महत्वपूर्ण भूमिका निभाएगा। संस्थान विदेशों में भी अपनी पहचान बनाने के लिए प्रतिबद्ध है। हाल ही में संस्थान ने कनाडा की एक परियोजना को सफलतापूर्वक सम्पन्न किया और वर्तमान में मिश्र की परियोजना पर कार्य चल रहा है। वित्त वर्ष 2012-13 के लिए संस्थान ने 2.75 करोड़ का आंतरिक राजस्व अर्जित करने का लक्ष्य रखा था जिसे संस्थान ने रु. 2.79 करोड़ का आंतरिक राजस्व अर्जित कर प्राप्त किया है जो हमारे लक्ष्य से अधिक है। वर्ष 2013-14 के लिए संस्थान ने 3 करोड़ का लक्ष्य निर्धारित किया है उम्मीद है हम इसे भी प्राप्त कर लेंगे। मुझे यह सूचित करते हुए भी हर्ष हो रहा है। कि संस्थान के सभी अधिकारी/कर्मचारी देश में समय-असमय घटने वाली प्राकृतिक आपदाओं में भी मदद के लिए स्वेच्छा से आगे आते हैं और अपनी सामर्थ्य के अनुसार सदैव मदद करते हैं। अभी हाल ही में उत्तराखंड में प्राकृतिक आपदा से जूझते हुए लोगों की मदद के लिए संस्थान के लगभग सभी अधिकारियों/कर्मचारियों ने स्वेच्छा से एक दिन का वेतन दिया है। स्वतंत्रता का मंगल पर्व इस बात का साक्ष्य है कि स्वतंत्रता एक अमूल्य निधि है। अनेक देशभक्तों ने भारत के सिर पर ताज रखने के लिए अपना उपसर्ग कर दिया था। इसलिए इस पावन पर्व पर हम पुनः उन महान शहीदों को नमन करते हैं। अन्त में मैं संस्थान के सभी अधिकारियों एवं कर्मचारियों और उनके परिवार के लिये ईश्वर से मंगलकामना की प्रार्थना करता हूँ।



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