

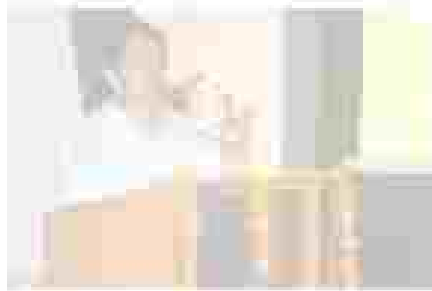
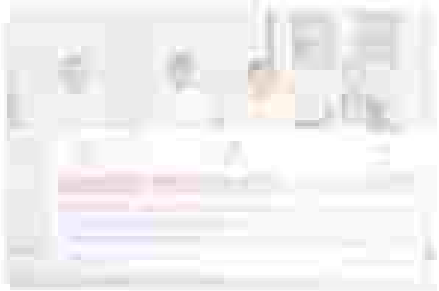
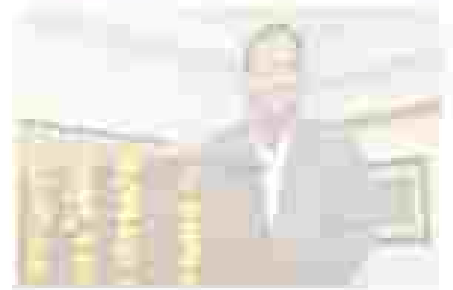
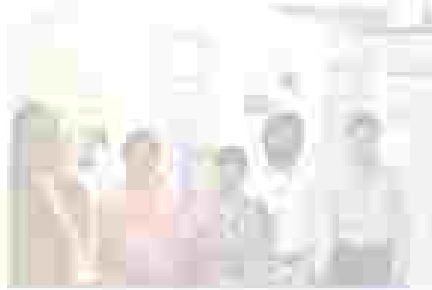
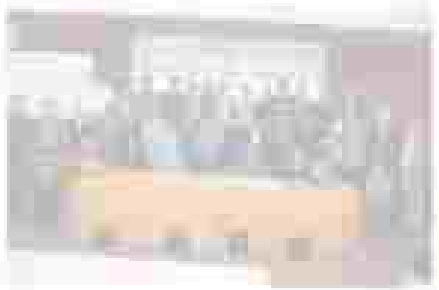
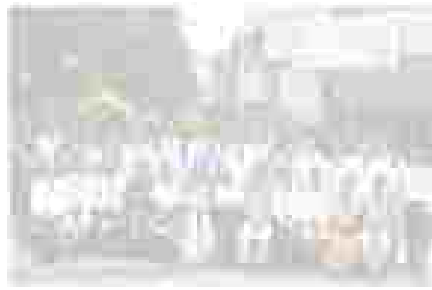
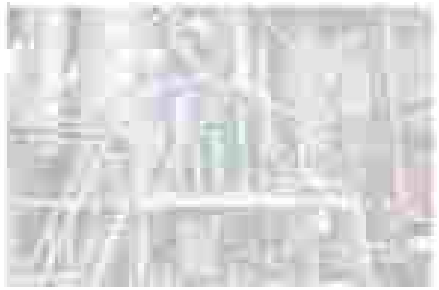
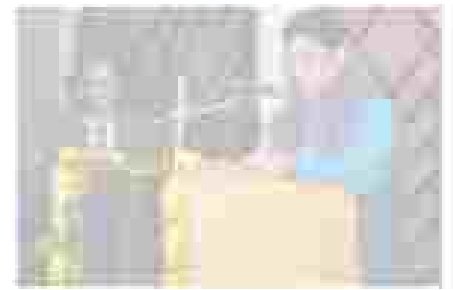
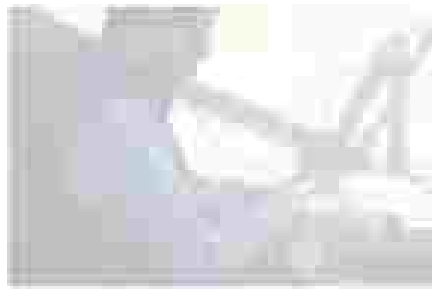
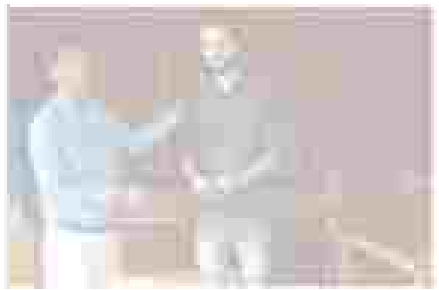
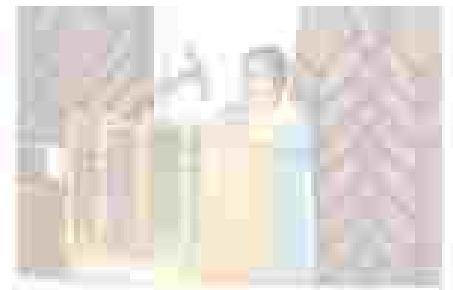
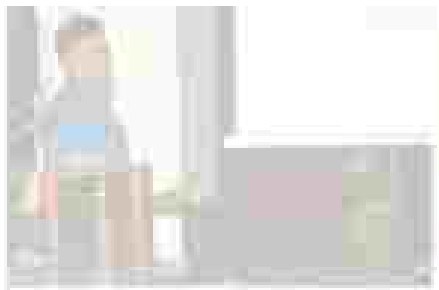
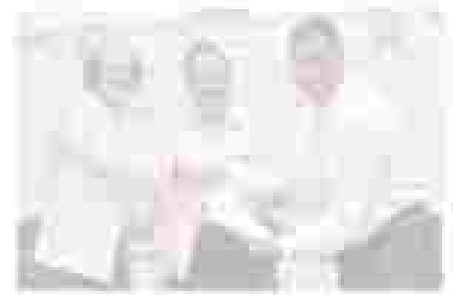
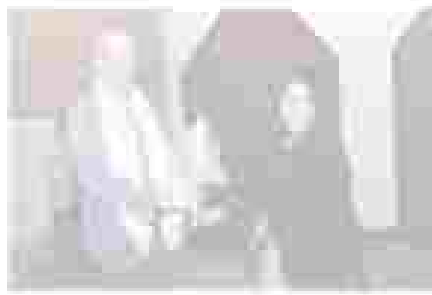


# Central Pulp & Paper Research Institute



Annual  
Report

**2015-16**



# Annual Report 2015-16



## **Central Pulp & Paper Research Institute**

An autonomous organisation registered under societies act under  
the administrative control of Ministry of Commerce & Industry,  
Department of Industrial Policy & Promotion, Government of India



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## From the Director's Desk

It is my pleasure to present the progress and achievements of CPPRI during 2015 -16 through this Annual report.

Among the major achievements during the year is the award of UNIDO (IC-ISIS) Project on **Development & Adoption of Appropriate Technologies for Enhancing Productivity in the Paper and Pulp Sector** to CPPRI. The objective of the project is to strengthen the global competitive position of the Indian Paper & Pulp Sector and to facilitate development and adoption of technologies for waste management and improving energy efficiency in the pulp and paper sector.

The project was initiated with successful organization of **four stake holder consultation meets at Kashiapur, Chandigarh, Yupi and Coimbatore** which was well attended by officials from industries, government agencies, R & D institutions, academia and other stake holders.

Another achievement was the publishing of **Compendium of Census Survey of Indian Paper Industry** prepared by CPPRI which was released during **Paper'ex 2015**. The compendium is a useful ready reckoner for industry, students, academia and various stake holders in context of global paper industry trends as well as status of the Indian Pulp & Paper Industry. The compendium includes inventory of over 80 Pulp & Paper mills compiled through survey carried out by CPPRI along with details related to their current installed & production capacities, paper grades produced, issues and challenges etc. CPPRI also participated actively in Paper'ex 2015 as co - sponsor.

The institute has been executing 9 plan projects and 10 Cost funded projects in the area of **Raw Material and Product Development, Process Optimization, Cleaner Production Technologies, Energy Conservation, Environmental Management, Skill Development** etc to address the various issues of India Paper Industry.

CPPRI provided technical services, consultancy and developed process like currency paper through indigenously available fibrous raw material, effective product processing and recycling of high strength waste paper like post consumer tetra pak cartons, commercialization of liquor heat treatment technology for improved efficiency of chemical recovery system, application of tertiary treatment system for compliance with environmental norms etc. Under the second phase of **Charter for Water Recycling and Pollution Prevention for Pulp and Paper Industries in Ganga River Basin** CPPRI continued its assistance as a third party in monitoring and verification of the progress of charter implementation.

Two **Memorandum of Understanding (MoU)** between CPPRI and Institute of Chemical Technology (ICT), Mumbai and Uttarakhand Technical University, Dehradun, Uttarakhand were signed during this year.

In addition to four UNIDO workshop mentioned above, CPPRI successfully conducted four training programme on **Energy and Environment Management, Calibration and Quality Evaluation of Pulp and Paper Products, Physical & Optical Properties of Different Grades of Paper and Printing and Surface Properties Evaluation of Paper** during 2015-16. The feedback received from the trainees has been quite encouraging and satisfactory.

Dedicated efforts made by the Institute in rendering technical, testing and consultancy services to various agencies has resulted in **Internal Revenue Generation (IRG)** of ₹ 260.40 Lacs during 2015-16.

With an objective to maintain corruption free and transparent work culture, CPPRI has been strictly complying with the directives of **Right to Information Act, Central Vigilance Commission, Ministry of Culture National Archives of India** etc. The Hindi Cell also continued its efforts for further increase in use of Hindi in official work.

CPPRI as usual, observed with great fervor national and other important days during the year like **Independence Day, Republic Day, World Environment Day, Hindi Diwas, and Vigilance Awareness Week** etc., through organization of meetings and functions for creating awareness among the staff and their families on the related issues.

CPPRI would like to place on record the guidance and encouragement extended by **Shri Amitabh Kant, IAS, Secretary (IPP), Ministry of Commerce & Industry, Govt. of India** and **President, Council of Association (CoA) of CPPRI**. The institute would also like to place on record the guidance and professional leadership provided by **Shri Shailendra Singh, IAS, Joint Secretary (IPP), Ministry of Commerce & Industry, Govt. of India** and **Chairman, Chairman Cess Committee and Research Advisory Committee (RAC) of CPPRI**.

The valuable guidance and support extended by the **Hon'ble Chairman and Members of Development Council for Pulp, Paper and Allied Industries (DCPPAI), Council of Association (CoA) of CPPRI** and **Research Advisory Committee (RAC) of CPPRI** is also sincerely acknowledged.

CPPRI also thank **Indian Paper Manufacturers Association (IPMA), Indian Newsprint Manufacturers Association (INMA), Indian Agro and Recycled Paper Mills Association (IARPMA)** and **Indian Recycled Paper Mills Association (IRPMA)** as well as all our valued clients from pulp, paper and allied industries for their continued support in various activities and projects being executed by CPPRI.

I also thank CPPRI's scientific, technical, administrative and accounts staff for their dedicated and sustained team work which has been a driving force for CPPRI's growth and progress.

**Dr. R.K. Jain**



## INDIAN PULP & PAPER INDUSTRY – A BRIEF PROFILE

### Paper Industry

India continued to retain as one of the fastest growing paper market in the world. The growing knowledge base coupled with synergistic contributions from flagship schemes of the government, namely, Sakshar Bharat, Skill India, Beti Bachao Beti Padhao, Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA), Inclusive Education for the Disabled at Secondary School (IDSS), Adult Education, Right to Education and Central Government Scholarship & Education Loan Scheme, assured a robust demand for paper and paper board. The industry was delicensed in July, 1997. As per the the present policy, FDI up to 100 per cent is allowed on the automatic route for the pulp and paper sector. There are around 850 units which manufacture pulp, paper, paper board and newsprint with an installed capacity of nearly 24 million tonnes out of which 7 million tonnes are lying idle. The total operating capacity is around 20 million tonnes. The Indian paper industry is in a fragmented structure, consisting of small, medium and large paper mills having capacity ranging from 10 to 1500 tonnes per day. These units use wood and agro residues as well as recovered paper as raw material. The production share of these units is around 20%, 10% and 70% respectively.

### Paper & Paperboard Segment

Indigenous paper and paper board segment produces all the main varieties of paper that are in demand in the market viz writing and printing (38%) packaging grade paper (53%), newsprint (8%) and speciality paper (<1%). However, certain speciality paper such as coated paper, security papers and cheque paper, etc., are being imported in the country.

The production of paper and paper board in the year 2015-16 stood at around 17 million tonnes (estimated figure) as compared to 16.63 million tonnes in the previous year (2014-15). During the year 2015-16, 1.48 million tons of paper and paper board was imported whereas in the previous year (2014-15) this figure stood at 1.36 million tons. On the other hand about 0.64 million tons of paper and paper board was exported in the year 2015-16, up from a figure of 0.60 million tons in the year 2014-15.

### Newsprint Segment

The newsprint sector in the country is governed by the Newsprint Control Order (NCO), 2004. The mills listed under the schedule of this order are exempt from excise duty, subject to actual user condition. At present, there are 123 mills registered under the Schedule to the NCO. However, only 64 are producing newsprint making the operating installed capacity 2.52 million tonnes per annum. 23 mills have closed operations since being listed in the NCO and 36 mills have discontinued the production of newsprint. The domestic production of newsprint dropped from 1.44 million tons in 2014-15 to 1.02 million tons (Estimated figures) in year 2015-16. Nearly half of the newsprint demand in the country is met by imports. 1.50 million tons of newsprint was imported in 2015-16.

which is higher from a 1.33 million tonn for the previous year. The export of newsprint from the country is negligible.

### Raw Material Scenario

The raw material consumption pattern has drastically changed in the recent years with the pulp & paper industry witnessing a rise in the use of waste paper. This shift has been mainly brought about for purpose of environmental compliance.

Presently, the consumption of wood, agro and waste paper is 20 %, 10% and 70 % respectively. Till about a few years ago, the consumption of wood, agro and waste paper was 31%, 22% and 47% respectively. Fig.1 illustrates the changing raw material consumption pattern of the Indian Paper Industry.

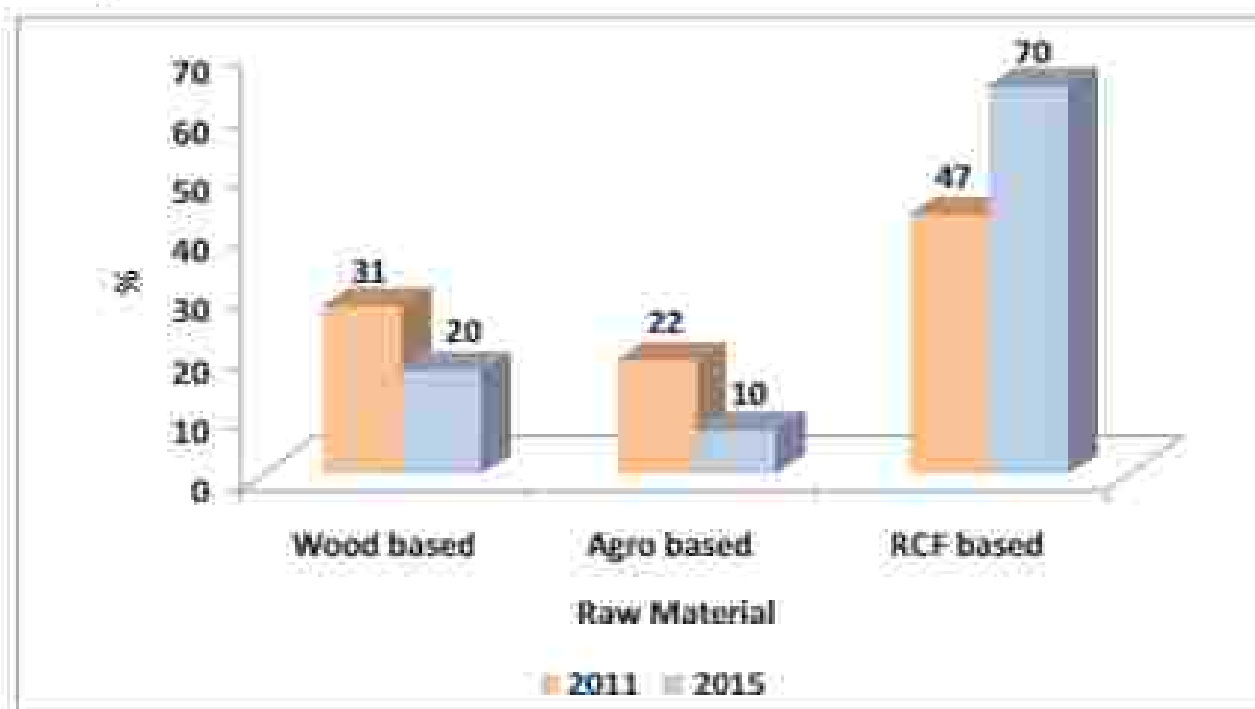


Fig.1 - Changing Raw material Consumption Pattern in Indian Paper Industry

### Production Trends for Different Grades of Paper

The Indian Paper Industry produces writing and printing, newsprint as well as packaging grade of paper. Writing and printing paper, packaging, newsprint and speciality paper contribute to 38%, 53 %, 8 % and <1 % respectively.

The domestic production trend follows the global trends in writing & printing paper, packaging grades & newsprint accounting for 26%, 51% & 7% respectively. However, global production of speciality grades like tissue paper is higher at around 8% of total global production.

## MANAGEMENT

### Council of Association (CoA)

The Council of Association of Central Pulp & Paper Research Institute (CPPRI) is the supreme body consisting of 18 members having representation from Ministry of Commerce & Industry, Department of Science & Technology (DST), Council of Scientific and Industrial Research (CSIR), Indian Council of Forestry Research and Education (ICFRE), Indian Institute of Technology (IIT), Roorkee etc. The President of Council of Association of CPPRI is appointed by Government of India. At present, Shri Amitabh Kant, IAS, Secretary to the Government of India, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion (IPP) is President CoA. Shri Shailendra Singh, IAS, Joint Secretary to the Govt. of India, Ministry of Commerce and Industry (IPP), was also closely associated with the affairs of the Council.

### Composition of the Council of Association

President	Secretary to the Government of India, Ministry of Commerce & Industry (IPP)
Vice-President	Joint Secretary to the Government of India, Ministry of Commerce & Industry (IPP)
Member Secretary	Director, Central Pulp & Paper Research Institute
Members from Government	1
Members from Academic Institutions	1
Members from Scientific Institutions	3
Members from Paper Industry	10

## MEMBERS OF COUNCIL OF ASSOCIATION OF CPPRI

1. **Shri Amitabh Kant, IAS**  
Secretary,  
Government of India  
Ministry of Commerce & Industry  
Department of Industrial Policy & Promotion  
**PRESIDENT**
2. **Shri Shalendra Singh, IAS**  
Joint Secretary,  
Government of India  
Ministry of Commerce & Industry  
Department of Industrial Policy & Promotion
3. **Director**  
IT Wing-ITP  
Govt of India  
Ministry of Commerce & Industry,  
Department of Industrial Policy & Promotion
4. **Chairman**  
Development Council for Pulp, Paper and  
Allied Industries
5. **Dr. G.S. Goeyra,**  
Deputy Director General (Research)  
Indian Council of Forestry Research and Education (ICFRE)
6. **Dr. Sanjay Mishra**  
Scientist G,  
Department of Science & Technology  
Ministry of Science & Technology
7. **Director**  
Indian Institute of Chemical Technology
8. **Professor V.S. Negi**  
IICD  
IIT Roorkee (Sitarganj Campus)
9. **Shri R.C. Rastogi**  
President,  
Indian Recycled Paper Mills Association (IRPMA)  
and CMD - Khaima Fibres Limited
10. **Shri Pramod Agarwal**  
President,  
Indian Agri and Recycled Paper Mills Association (IARPMA)  
and CMD - Rama Paper Mills Limited

11. **Shri Sanjay Singh**  
President,  
Indian Paper Manufacturers Association (IPMA)  
and Divisional Chief Executive, JTC Ltd (PSPT)
12. **Shri P.S. Patwari**  
President,  
Indian Newspaper Manufacturers Association (INMA)  
and Executive Director - Emami Paper Mills Limited
13. **Shri Nandhar Agarwal**  
President,  
Indian Pulp & Paper Technical Association (IPPTA) and  
Senior Vice President Operations BILT
14. **Shri Kamal Khaitan**  
Managing Director,  
Wires & Fabrics (I.A.) Limited
15. **Shri S.K. Jain**  
Chairman cum Managing Director,  
Hindustan Paper Corporation Limited
16. **Shri Pradeep Dhole**  
Executive Director,  
JTC Limited
17. **Shri Anil Kumar**  
Executive Director and CEO,  
Shreeyam Industries Limited (Unit: Shreeyam Papers)
18. **Dr R.K. Jain**  
Director (In-charge),  
Central Pulp & Paper Research Institute

**MEMBER SECRETARY**

### Research Advisory Committee (RAC)

The Research Advisory Committee (RAC) of Central Pulp & Paper Research Institute (CPRI) comprises of prominent scientists and technologists and also representatives from Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Govt. of India, Deptt. of Science and Technology (DST), Council of Scientific and Industrial Research (CSIR), Indian Council of Forestry Research and Education (ICFRE), Indian Institute of Technology (IIT), Roorkee etc. The RAC monitors the progress of various Five Year Plan Projects of the Institute periodically. Shri Shailendra Singh, IAS, Joint Secretary (IPP), Ministry of Commerce and Industry, as Chairman of RAC took keen interest in the R&D programmes of the Institute. Valuable suggestions and guidelines given by the Chairperson and members of the committee from time to time enabled the Institute to design R&D programme focusing on thrust areas of Indian Paper Industry.

#### Composition of the Research Advisory Committee

Chairman	Joint Secretary (IPP), Ministry of Commerce & Industry
Member Secretary	Director, Central Pulp & Paper Research Institute
Members from Government	3
Members from Academic Institutions	1
Members from Scientific Institutions	3
Members from Paper Industry and other organizations	10
Consultants / Technologists	3

## MEMBERS OF RESEARCH ADVISORY COMMITTEE OF CPPRI

- |     |   |                 |
|-----|---|-----------------|
| 1.  | <p><b>Shri Shailendra Singh, IAS</b><br/>         Joint Secretary,<br/>         Government of India<br/>         Ministry of Commerce &amp; Industry<br/>         Department of Industrial Policy &amp; Promotion</p>               | <b>CHAIRMAN</b> |
| 2.  | <p><b>Director</b><br/>         IPWing (IP)<br/>         Government of India<br/>         Ministry of Commerce &amp; Industry<br/>         Department of Industrial Policy &amp; Promotion</p>                                      |                 |
| 3.  | <p><b>Md. Zakaia Khan Yusufi</b><br/>         Senior Development Officer (Engg)<br/>         Government of India<br/>         Ministry of Commerce &amp; Industry,<br/>         Department of Industrial Policy &amp; Promotion</p> |                 |
| 4.  | <p><b>Shri K. R. Sinha</b><br/>         Industrial Advisor (IP)<br/>         Government of India<br/>         Ministry of Commerce &amp; Industry,<br/>         Department of Industrial Policy &amp; Promotion</p>                 |                 |
| 5.  | <p><b>Chairman cum Managing Director</b><br/>         Hindustan Paper Corporation Ltd.</p>  |                 |
| 6.  | <p><b>Professor Y.S. Negi</b><br/>         IICD<br/>         IT - Rohtak (Salawasat Campus)</p>   |                 |
| 7.  | <p><b>Shri P.S. Patwari</b><br/>         President,<br/>         Indian Newspaper Manufacturers Association (INMA)<br/>         and Executive Director - Eastern Paper Mills Limited</p>  |                 |
| 8.  | <p><b>Shri R.C. Rastogi</b><br/>         President,<br/>         Indian Recycled Paper Mills Association (IRPMA)<br/>         and CMD - Khosla Fibers Limited</p>   |                 |
| 9.  | <p><b>Dr. N.V. Sathyanarayana,</b><br/>         Chief Scientist and<br/>         Head, Business Development<br/>         Indian Institute of Chemical Technology</p>  |                 |
| 10. | <p><b>Shri R. Varadhan</b><br/>         Consultant</p>  |                 |

11. **Shri Sandeep Bhatia,**  
General Manager (Development)  
J.K. Papers Ltd.
12. **Dr. Sanjay Nathani**  
Head (C and P Division)  
Indian Institute of Wood Science & Technology
13. **Dr. A. B. Akolkar**  
Member Secretary  
Central Pollution Control Board
14. **Shri N.K. Jain**  
Director  
Valmet Technologies Co. Pvt. Limited
15. **Shri Neehar Agarwal**  
President, Indian Pulp & Paper Technical Association (IPPTA) and  
Senior Vice-President Operations IITJ
16. **Shri Paswan Agarwal**  
Chairman Karnataka Garbha Chamber of Commerce  
and Industry (KCGCCI - Paper Unit Chapter) and  
JMD - Naim Group of Industries
17. **Dr. H.D. Kulkarni**  
Vice President (Plantations)  
TTC Ltd / FSPD
18. **Shri Tushar Shah**  
Director  
Hansar Ganga Group
19. **Shri Anil Kumar**  
Executive Director and CEO  
Siregami Industries Limited (Unit: Siregami Papers)
20. **Shri Paswan Khallan**  
Managing Director  
Kuantam Papers Limited
21. **Shri Arun G. Bhat**  
Managing Director  
SPBPC Limited
22. **Dr R.K. Jain** **MEMBER SECRETARY**  
Director (In-charge)  
Central Pulp & Paper Research Institute





## STAFF

As on April 1, 2015, CPPRI's core team includes **Scientists (21), Technical Staff (30) and Administrative & Finance Staff (18)**. CPPRI staff is dedicatedly engaged in providing quality services, support and assistance to Pulp, Paper & Allied Industries. The scientific staff is highly qualified and have vast experience in various areas of paper making like **Raw Material Preparation, Pulping and Bleaching, Stock Preparation and Paper Making, Paper Testing, Chemical Recovery, Energy Conservation, Environmental Management, Biotechnology, Product Development, Quality Control** etc. The list of staff along with qualification is annexed with this report. In addition to permanent staff, **Research Associates, Senior / Junior Research Fellows, Computer Assistants & Field Assistants** are also recruited periodically on temporary basis under various projects.

## MAJOR ACHIEVEMENTS DURING 2015-16

The major achievements of CPPRI during 2015-16 are summarised as under:

### Raw material upgradation

Successful bagasse depilbing pilot scale trials resulting in over 80 % reduction in pith content. The studies are to be scaled up to mill scale at Tamilnadu Newsprint & Papers Limited soon.

### Paper making potential of alternate fibrous raw materials

Preliminary studies carried out with various non conventional / alternate raw materials like lantana camara, pine needle hard wood, acacia dubia etc have indicated good paper making potential of these raw materials.

### Setting up of Paper Board & Special Paper Testing Facilities

Infrastructure being developed to provide services for Paper Board & Speciality Paper Testing.

### Paper making

- Development of expertise in optimization of coating color formulations for target values using statistical techniques.
- Data base generated on the variation of fluting strength of commercial liner and medium collected from different suppliers and impact on load carrying capacity of corrugated board.

### Energy Management

- Assisted Bureau of Energy Efficiency (BEE) in implementation of Perform Achieve & Trade (PAT) scheme of Ministry of Power, Government of India in pulp and paper sector.
- The pulp and paper sector has been identified as one of the energy intensive sectors under Perform Achieve & Trade (PAT) scheme by Ministry of Power, Govt. of India. 31 pulp and paper mills consuming 30,000 metric tons of oil equivalent (TOE) per annum and above were notified as Designated Consumers (DCs) and assigned 1.84% of the total National Energy saving target (equivalent to 0.123 million TOE) in the first PAT cycle from 1 April 2012 to 31 March 2015.
- These 31 DC pulp and paper industries have used the PAT-1 scheme as an opportunity to implement measures to improve energy efficiency in order to achieve the assigned specific energy reduction targets. Benefits of compliance under PAT scheme is issuance of tradable ESCerts (Energy Saving Certificates) per TOE energy saving achieved above the target set for each DC. In PAT-1, 25 pulp and paper DCs achieved saving of 0.289 MTCE against the target of 0.119 MTCE.

### Environmental Management

- Assisting pulp & paper mills in implementation of Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries of Ganga River Basin.
- Assisting CPCB in verifying the progress of implementation of Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries of Ganga River Basin in various mills on regular basis.
- Feasibility study of zero liquid discharge in a RCT based pulp and paper mill producing kraft paper.

### Chemical Recovery

- Successful pilot scale trials on improving chemical recovery and energy efficiency through liquor heat treatment and desiccation of agro based liquor carried out at Satia Paper Mills Limited, Muktaur, Punjab and Trident Limited, Barnala Punjab.



Pilot Scale Desiccation & Liquor Heat Treatment Trials at Mill Site

### Book Release

Compendium of Census Survey of Indian Paper Industry at Paper'ex 2015.



Release of Compendium of Census Survey of Indian Paper Industry at Paper'ex 2015

### Training/Skill Development

- One day Training Programme for LIC officials on Physical & Optical Properties of Different Grades of Paper at CPPRI on October 13, 2015.
- 13<sup>th</sup> Cess training Programme on Energy & Environment Management in Pulp & Paper Industry at CPPRI on July 28 - 29, 2015.
- 14<sup>th</sup> Cess Training Programme on Calibration and Quality Evaluation for Pulp and Paper Products at CPPRI on July 30 - 31, 2015.
- 15<sup>th</sup> Cess Training Programme on Printing and Surface Properties Evaluation of Paper at CPPRI on January 19-20, 2016.

### Technical and Consultancy Services

- Technical and consultancy services were rendered to various pulp and paper mills and allied industries, technology and chemical suppliers by way of evaluation of raw materials, pulp and paper samples, pulping additives, deinking chemicals, sizing chemicals, stickies control agents, evaluation of suitability of newer grades of imported waste paper, characterization and analysis of various fibrous and non-fibrous raw materials, environmental samples as well as providing assistance in trouble shooting, adequacy assessment, performance evaluation of various process operations, effluent treatment plant and pollution control equipments leading to internal revenue generation of around ₹ 260.40 Lacs.

### Contract Agreement/ MoU Signed

- A MoU was signed between CPPRI and Institute of Chemical Technology (ICT), Mumbai to provide higher education opportunities for faculty, support staff and students of CPPRI and ICT.



Signing of MoU between CPPRI & ICT, in the presence of Honorable Dr. Harsh Vardhan, Minister of Science & Technology and Earth Science, Government of India

- A MoU was signed between CPPRI and Uttarakhand Technical University, Dehradun, Uttarakhand for joint co-operation in the area of undertaking projects for specifically identified clients working in various sectors on mutually agreed basis.



Signing of MoU between CPPRI & Uttarakhand Technical University

#### **Research Papers Published**

- 9 Research Papers were published in various journals during 2015-16.

#### **Reports Prepared**

- 112 Technical / Consultancy reports were prepared during 2015 - 16.

#### **Infrastructure Development / Capacity Building**

Upgradation of infrastructure and facilities through the installation of following equipments in different laboratories of CPPRI.

### Infrastructure Development / Capacity Building

- Upgradation of Infrastructure and Facilities through purchase of :



Bench top Yellow Membrane Filtration Unit for Waste Water Treatment Studies on colour removal



TTC Analyser - For measurement of Total Carbon, Inorganic Carbon, Total Organic Carbon and Non purgable organic carbon in waste water and aquatic sample



Rotary Evaporator for Concentrating the Black Liquor



Water Bath



Shaking water bath



**Moisture Analyzer for determination of moisture in raw material and pulp sample**



**Brightness Tester for determination of brightness of pulp sheet**



**Surface Tension Analyzer to study the property of liquid surface**



**Rheometer for pulp viscosity**

## Receipts & Expenditure

During the year 2015-16, total receipts of the Institute were ₹1909.30 Lacs and total expenditure was ₹1242.551 Lacs (i.e. revenue expenditure ₹1140.77 Lacs + capital expenditure ₹102.18 Lacs).

Following are the broad heading of income & expenditure of the Institute during the year under review:

S. No.	INCOME	₹ in Lacs.	S. No.	EXPENDITURE	₹ in Lacs.
1.	Balance as on 1.4.2015	706.88	A.	REVENUE EXPENDITURE	
2a.	Grants from Ministry of Commerce & Industry, DIPP, Govt. of India.	270.00	1.	Grant Refund to Ministry	77.74
b.	High level support through Development Council for pulp, paper & allied industries.	325.00	2.	Salary & Allowances	764.23
c.	Grants received from Development Council for pulp, paper & allied industries for Govt. funded projects/Conc. Secretariat.	147.02	3.	Plant & Lab Maintenance	52.70
3.	Testing fees	155.64	4.	Electricity charges	75.02
4.	Consultancy fees / Membership fee / License fee against patent	39.63	5.	Repair of Assets	69.72
			6.	Miscellaneous	100.66
			B.	CAPITAL EXPENDITURE	102.18
5.	Training fees / M.Sc. fees	7.91	C.	BALANCE WITH CIPRI	666.73
6.	Miscellaneous receipts	37.22			
	<b>TOTAL</b>	<b>1909.30</b>		<b>TOTAL</b>	<b>1909.30</b>

## Internal Revenue Generation

CIPRI in its endeavour to become self-reliant continued to make concerted efforts to generate internal revenue through rendering of technical and consultancy services to pulp, paper and allied industries. The efforts have translated into generation of internal revenue worth ₹260.40 Lacs during the financial year 2015-16.



## R&D ACTIVITIES

### (A) 12th Five Year Plan Research Schemes

#### (a) Raw Material and Product Development

#### I. Utilization of Rice Straw and other Non Conventional Raw Materials for Production of Various Grades of Pulp

##### Objective

- Identification of papermaking potential of cellulosic raw materials viz. rice straw, jute, banana fiber, coconut fiber, areca nut husk and other locally available grasses and production of different grades of pulp to supplement shortage of raw material in Indian paper industry.

##### Highlights

Studies on evaluation of paper making potential of various cellulosic raw material like rice straw, *Lantana camara*, *Melia dubia*, pine needle and coir fibers were carried out as under :

- ECF bleaching studies with rice straw and evaluation of strength and optical properties of bleached pulp.
- Optimisation of pulping conditions for soda and kraft pulping of *lantana camara* followed by studies on oxygen delignification and ECF bleaching of unbleached pulp.
- Proximate chemical analysis of *lantana camara*, *melia dubia*, pine needle and coir fibers.
- Optimisation of kraft pulping of *melia dubia*, pine needle and coir fibers followed by ECF bleaching.

#### II. New Approaches in Processing and Paper Making of Recycled Fibre to Improve the Quality of End Product

##### Objective

- To improve the quality of recycled paper products such as packaging paper, newsprint and tissue paper employing selective approach i.e. dry and wet strength improvement of packaging paper, brightness and yield improvement of newsprint and softness improvement of tissue paper.

## Highlights

### Fibre Strength Improvement of Indigenous raw material

- Studies conducted on biopolymer treated Indigenous Old Corrugated Cartons (OCC) furnish have shown remarkable improvement in Zero Span Tensile Strength (ZSTS) and burst factor.
- The studies also indicate that as compared to alkaline sizing, acid sizing is detrimental in improving the bonding properties. In fact, the alkaline sizing restored the bonding strength of treated pulp.
- Study also revealed that when the paper was surface sized with biopolymer, there is a remarkable improvement in bursting strength to the around of 8 to 9 units as compared to non surface sized treated pulp.

### Mineral Deinking- A New Approach to Improve Quality of Newsprint

- Studies initiated on development of mineral deinking technology to improve the quality of newsprint.
- Optimization studies on flotation deinking of Old Newsprint Paper (ONP), Old Magazine Grade (OMG) and Mixed Office Waste (MOW) were carried out using mineral aided deinking formulation to study its impact on improving deinking efficiency and quality of the deinked stock for newsprint manufacture.
- An improvement up to 15% in brightness with an added advantage of increased ash up to 5% was achieved in the initial studies.
- More studies with new formulations and new additives are in progress.

### (b) Energy Conservation and Environmental Management

#### L Incremental Capacity Enhancement and Improved Efficiency of Conventional Chemical Recovery System in Wood and Non-Wood Based Paper Mills

## Objective

- Marginal expansion of existing chemical recovery system with minimum capital cost involvement to assist mills in handling excess black liquor generated due to adoption of oxygen delignification or marginal expansion in pulp mill capacity.

### Highlights

- Studies on adequacy of Low Temperature Incineration (LTI) based chemical recovery system of agro based paper mills were conducted.
- Studies on partial lignin removal from black liquor for facilitating marginal capacity expansion and improving efficiency of chemical recovery system were continued during the period.
- Studies on desiccation and liquor heat treatment of black liquor to improve the rheological and combustion behaviour of black liquor were conducted at lab scale as well as pilot plant scale.

## II. Implementation of Enzyme Applications in Pulp and Paper Industry

### Objective

- Implementation of biotechnological applications in Pulp and Paper Industry to pursue the clean and green technology and address the issues related to energy conservation, quality up-gradation and environmental improvement.

### Highlights

#### Development of indigenous capabilities for production of various enzymes and implementation of these enzymes in Indian Paper Industry.

- Optimization of various physical and nutritional parameters were carried out with identified microorganisms having potential for Xylanase and Laccase enzyme production. Enzyme activity was found 825 IU/gds and 6250 IU/gds for Xylanase and Laccase respectively by using wheat bran as substrate under optimum conditions.
- Mixed enzyme bleaching was carried out with indigenously produced enzymes. The effect of mediator during mixed bio-bleaching was also studied.
- Improvement in brightness by 1.5 unit with mediator and 1.0 unit improvement without mediator was obtained during bleaching.

#### Bioremediation of Paper Mill Effluent

- Optimization of various physiological parameters (pH, time, temperature) was carried out for enhancing reduction in COD and Colour from identified bacterial strains.
- 17% and 20% reduction was obtained in COD and Colour respectively at pH 7 and temperature 37°C after 72 hrs.

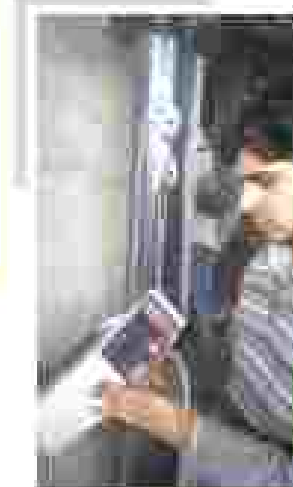
### III. Water Conservation through Application of Kidney Technologies in Indian Pulp and Paper Industry

#### Objective

- To reduce fresh water consumption in pulp and paper mills by increased reuse and recycling of back water / treated effluent through application of kidney technologies.

#### Highlights

- RTP adequacy assessment of two large integrated pulp and paper mills and two agro and 18 waste paper based mills carried out. Detailed reports with recommendations and suggestions for improving the performance of RTP was submitted to the mill.
- Feasibility of ZLD status studied at 2 waste paper based mills producing kraft paper.
- Experimental studies continued on physico – chemical treatment of agro based writing and printing paper mill's treated effluent using ozone w.r.t to residual color & COD reduction. The preliminary results appear to be encouraging with color reduction of 80 - 85% and COD reduction of 60 - 70%. Further studies are under progress.
- Water audit of two waste paper based paper mills and a large integrated pulp and paper mill were carried out.
- A bench top hollow membrane filtration unit was procured and commissioned for study on color and TDS removal in pulp and paper mill effluent.



*Water Audit / ZLD feasibility studies being carried out at mill site by CPPRI Scientists.*

## **C. Infrastructure Development and Capacity Building Activities**

### **I. Setting up of Paper Board and Speciality Paper Testing Facilities at CPPRI**

#### **Objective**

- To develop complete facilities of the testing of paper board and speciality paper for benefit of manufacturers of paper board / corrugated board carton and speciality paper.

#### **Highlights**

- The Crush Tester (L & W Make) was commissioned in newly established paper board and speciality paper testing laboratory of CPPRI.
- Samples of liner, kraft and corrugated boxes collected from paper manufacturers and converters were evaluated for different properties viz, ring crush test (RCT), edge crush test (ECT) and concore medium test (CMT), concore crush test (CCT), concore liner test (CLT), face crush test (FCT), etc..

### **II. Modernisation of CPPRI Library**

#### **Objective**

- Modernization of library by initiating application of ICT (Information Communication and Technology) in the library, strengthening of library to provide good quality services to user community, digital preservation of past records for future use and to develop an effective information network between CPPRI and Indian Paper Industry.

#### **Highlights**

#### **Compilation**

- Four issues of Current Awareness Services (CAS) and Table of Content (TOC) for the period of April 2015 to March 2016 compiled.

#### **New Arrivals**

- 49 (Forty nine) new books on different subjects procured during 2015–2016.

#### **Infrastructure Up gradation**

- During 2015-16 One 3.0 KVA UPS, Two HP desktop personal computers and One Xerox photocopy machine (B&W) model no. 5945 were procured and installed.

### Printing coordination

- Printing coordination for Annual Report 2014-2015 (English and Hindi version) and News bulletin

### III. Strengthening of Training and Human Resource Development (HRD) in Pulp, Paper and Allied Industry

#### Objective

- To create infrastructure facilities for imparting training to the technical manpower of pulp, paper and allied industries across the country on sustainable basis.

#### Highlights

- Provided logistic support in organisation of three Cess training programme, one programme for LIC officials and four UNIDO workshop conducted by CPPRI.
- Facilitation of audio – visual aid for conducting M.Sc (Cellulose & Paper Technology) classes at CPPRI.

### IV. Infrastructure and Capacity Building ( Infrastructure for Civil / Electrical / Mechanical / Information Technology and Maintenance of R & D Facilities at CPPRI)

#### Objective

- To upgrade the infrastructure and support systems (Electrical / Mechanical / Civil / Information Technology) in the Institute in order to ensure smooth functioning of the R&D activities and support services.

#### Highlights

Logistic support in facilitating pilot plant trials at CPPRI and mill site for:

- Pulping and bleaching of agri fibre sponsored by ITC Limited, Bengaluru
- Pulping and bleaching trials of coir fibres sponsored by Indian Institute of Carpet Technology, Raibari, Uttar Pradesh
- Pilot scale extraction & pulping trials of hard wood raw materials sponsored by ITC Life Science, Bengaluru
- Desiccation and Liquor Heat Treatment (LHT) pilot plant trials at Trident Papers Limited, Barnala, Punjab
- Repairing and maintenance of lab equipments, pilot plant equipments, boiler, horticulture, DG sets etc
- Coordination of transportation services and communication services
- Horticulture & plantation activities

## (B) Cess Funded Projects

### I. Census Survey of the Indian Paper Industry

#### Objective of the Project

- To enumerate the basic primary data of the Indian paper Industry such as consumption pattern, installed capacity, number of pulp and paper mills, imports and exports, demand and supply gap etc.
- The data base generated will form the basis for future planning and in policy framework pattern of the government.

#### Highlights

- Data collection pertaining to 813 paper mill containing details of contact person/address installed capacity, production, raw material used, product etc. was completed.
- The compilation of the data was released in form a book titled **Compendium of Census Survey of Indian Paper Industry** during Paperex 2015. The book covers global paper Industry trends along with the status of the Indian Paper Industry, current installed and production capacities, demand/supply scenario including import/export trends and status of the newsprint sector in India were included in the book.
- The book also highlights issues related to raw material use, technological status, energy & environmental scenario & quality issues. An updated directory of 813 number Paper & Pulp Mills was also included in book which will serve as a ready reckoner for personnel looking for authentic data of mills.

### II. Improvement in Selectivity of Oxygen Bleaching (Joint Project of IPMA-SPB – ACIRD – CPPRI)

#### Objective of the Project

- To optimise the conditions and explore additives for oxygen delignification of different indigenous raw materials with the objective to reduce cellulose degradation, pulp shrinkage during oxygen delignification stage and to perform plant scale trial using optimized conditions with identified additive.

#### Highlights

- Studies on oxygen delignification of kraft pulp of eucalyptus and Melic arborea using different chemical additives and polymeric additives to improve selectivity of oxygen bleaching as well as pulp properties were carried out.

- Out of the different chemical and polymeric additives used to improve selectivity of oxygen bleaching, EDTA and  $Mg(OH)_2$  were found the most suitable.

Particulars	0.1% EDTA	0.2% $Mg(OH)_2$
Improvement the pulp yield	0.5 %	1.1 %
Improvement in viscosity	0.8 units	1.1 units
Improvement in final pulp brightness	0.8 units	0.9 units
Improvement in Final pulp yield	0.3%	0.6 %
Improvement in final pulp viscosity	Comparable	1.2 units

- The lab scale studies with the selected additive/chemical are to be scaled up to plant scale trial at Seshasayee Paper and Boards Limited., Erode, Tamilnadu.

### III. Achievement of Highest Brightness and Whiteness in Paper in a Cost Effective Manner through Selective Addition of OWA at Wet-end and Size Press (Joint Project of IPMA – INPL – ACIRD – CPPRI)

#### Objective of the Project

- To provide a scientific base for understanding the interaction chemistry of OWA with different types of cellulosic fibers and wet-end chemicals, and to help paper industry in selection of appropriate OWA for wet-end and size press with an added advantage of improvement in optical properties and reduction in cost.

#### Highlights

- The studies with different OWAs using mixed hardwood pulp and bagasse pulp with different fillers and wet-end chemicals were completed. The intrinsic brightness of filler had significant impact on brightness of paper. Improvement in optical properties of paper was observed with split addition of different OWAs.
- Using mixed hardwood pulp and GCC filler, maximum brightness i.e. 94 %ISO, was achieved by different combinations of OWAs viz. 3 kg/t of BMKD at wet end along with 2 kg/t of AHLCT at surface sizing, 6 kg/t of BOPT at wet end and 0.4 kg/t of NPSD at surface sizing and 5 kg/t of NPSD at wet end along with 2kg/t of NPSD at surface sizing.
- Using bagasse pulp and GCC filler, maximum brightness i.e. 101-103 %ISO, was achieved by different combinations of OWAs viz. 7 kg/t of BMKD at wet end along with 2 kg/t of ASPT at surface sizing, 9 kg/t of HOPT at wet end and 3kg/t of SPPZ at surface sizing and 6 kg/t of NPSD at wet end along with 3 kg/t of SPPZ at surface sizing.



- Cost analysis of OWAs and application of di and tetra-sulfonic OWAs and chemicals at different proportions in wet end using optimized conditions using recycled pulp is in progress.

#### **IV. Increase in Brightness Ceiling of Agro Residue Pulps in Cost Effective Manner Specifically for Wheat Straw (Joint Project of IARPMA-ACIRD-CPPRI)**

##### **Objective of the Project**

- To study the reasons for low brightness development in agro residue pulp and carry out research on producing + 85 % ISO brightness pulp from Indian agro residues specifically wheat straw in a cost effective manner.

##### **Highlights**

- The studies in detail were carried out on effect of raw material cleaning (clarification of back water using flocculants, wash water temperature, chelating agents etc.), effect of oxidative, reductive and redox pulping additives/conditions, modifications during bleaching (pre, in-situ, post bleaching treatments) in enzymatic treatment on final pulp brightness.
- Following processes/treatments are found suitable to enhance final pulp brightness of wheat straw pulp to +85% ISO:

##### **Use of hydrogen peroxide activator in EOP stage of bleaching:**

Use of suitable hydrogen peroxide activators improved the final bleached pulp brightness by 1.1 unit and whiteness by 1.5 unit.

##### **Hydrogen peroxide pre treatment:**

- Hydrogen peroxide pre-treatment of unbleached wheat straw pulp improved final bleached pulp brightness by 1.7 - 2.1 units with substantial reduction in chlorine based bleaching chemicals and pollutants generated during bleaching.
- Study on impact of metal ions and Hexaricinic acid on pulp brightness and removal of metal ions during pulping and post pulping stages - Under progress.

## V. **Studies on Technological Status and Potential of Productivity Enhancement in Indian Pulp & Paper Industry under Existing Liberalization and Globalization Scenario**

### **Objective**

- To evaluate the technological status and explore potential of productivity enhancement in Indian Paper Industry, prepare a road map or action plan for implementation both by Industry as well as Government to improve the industry's overall sustainability and competitive ability in domestic and international market.

### **Highlights**

- A meeting of the sub - committee constituted by Cess Committee was to deliberate the technical and financial aspects as well as carry out financial negotiations with the bidder for carrying out the above project was held on November 11, 2015.
- Subsequently in context of the recent UNIDO-ICISD Project on Development and Adoption of Appropriate Technologies for Enhancing Productivity in Paper & Pulp Sector, the DCPPI has deferred the project till the submission of UNIDO project report to avoid duplication of the efforts. The Council is of the view that subsequent to submission of UNIDO report if required, a separate study to substantiate the UNIDO study may be undertaken which may involve much less financial requirement and time.

## VI. **Bio-chemical Abatement of Pollution Load in Waste Water to Meet the Future Stringent Norms for Agro based Pulp and Paper Mills. (Joint Project of IARPMA-ACIRD-CPPRI)**

### **Objective of the Project**

- Improvement in the biological treatment by augmentation of attached growth of organisms and/or dispersed nature of efficient organisms and development of techno-economical process for removal of BOD with coagulants and flocculants.

### **Highlights**

- Identification of agro based pulp and paper mill in collaboration with CPPRI.
- Collection of effluents from different streams of agro based pulp and paper mill.
- Study on removal of colour from wheat straw washing – under progress.
- Study on meeting the discharge norms by chemical method followed by biological treatment – under progress.

## **VII. Continuing Education (Training Programme) for Technical Personnel in Pulp and Paper Industry**

### **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.

### **Highlights**

The following training programme was successfully organised by CTPRI:

- 13<sup>th</sup> Cess training Programme on Energy & Environment Management in Pulp & Paper Industry on July 28-29, 2015.
- 14<sup>th</sup> Cess Training Programme on Calibration and Quality Evaluation for Pulp and Paper Products on July 30-31, 2015.
- 15<sup>th</sup> Cess Training Programme on Printing and Surface Properties Evaluation of Paper on January 19-20, 2016.



Participants of 13<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup> Case Training Programmes at CPPRI

### **VIII. Development of Protocol for Deposit Control in RCF Based Mills for Better Machine Runnability (Joint Project of INMA & CPPRI)**

#### **Objective**

- To develop / establish a methodology for measurement of Dissolved Colloidal Matters (DCM) to control deposition on paper machine and to study the affect of variation such as water hardness, furnish blends, paper making chemistry, white water clarity etc. on paper machine deposition.

#### **Highlights**

- Total Organic Carbon (TOC) Analyser was purchased & installed successfully.
- Studies initiated to develop / establish a methodology for measurement of Dissolved Colloidal Material (DCM) to control deposition on paper machine and to study the affect of variation such as water hardness, furnish blends, paper making chemistry, white water clarity etc. on paper machine deposition.

### **IX. Pilot Scale Studies on Efficient Depithing of Bagasse: a Process Developed by CPPRI (Joint a project of Tamilnadu Newsprint & Papers Ltd., (TNPL) Tamilnadu & CPPRI)**

#### **Objective**

- To develop and design depithing equipment for efficient depithing of bagasse based on technology developed by CPPRI in order to help the paper industry to get high fibre content and to improve the quality of paper produced from bagasse.

#### **Highlights**

- Depithing studies on bagasse, collected from a sugar mill, were conducted. Demonstration of existing pilot plant was given to officials from TNPL. Bagasse, before and after depithing, was characterized for pith content. Pith content was reduced to less than 7%w/w from 35% w/w after depithing.

## Assistance to Central Pollution Control Board (CPCB) & United Nations Industrial Development Organisation (UNIDO)

### I. Implementation of CPCB Charter for Water Recycling and Pollution Prevention in Pulp & Paper Industries of Ganga River Basin

#### Objective

- To reduce water consumption and waste water discharge from pulp and paper mills located in Ganga river basin through implementation of water conservation measures, process upgradation and ETP upgradation and ultimately reducing the over all impact on Ganga river quality.

#### Highlights

- CPPRI as third party continued to play an active role through verification of action plan for Charter compliance submitted by mills, quarterly Charter implementation progress verification, ETP adequacy assessment, etc in over 100 pulp and paper mills of Uttar Pradesh & Uttarakhand as well as West Bengal and Madhya Pradesh.
- CPPRI also provided assistance to mills in technology identification, water conservation and ETP upgradation to achieve Charter norms.

### II. Development and Adoption of Appropriate Technologies for Enhancing Productivity in Pulp & Paper Sector ( UNIDO project )

#### Objective

- The objective of the project is to strengthen the global competitive position of the Indian Pulp & Paper Sector and to facilitate development and adoption of technologies for waste management and improving energy efficiency in the pulp and paper sector.

#### Highlights

- Under this recently initiated project, detailed questionnaire for generation of data base related to technological and environmental status of pulp and paper mills in the selected clusters viz. Kashipur, Vapi, Coimbatore & Punjab were prepared. CPPRI scientists were deputed to collect the data and information from mills and mill associations in the selected cluster.
- Further four stake holder consultation meeting were organized at Kashipur, Chandigarh, Vapi and Coimbatore to sensitize the mills in the selected clusters mill associations and other stake holders about the objectives and deliverables of the UNIDO project as well as seek inputs on the challenges and technology gaps faced by the sector and suggest the way

forward to address such challenges or gaps. The purpose of the meeting was also to identify suitable paper and pulp units for detailed diagnostic under the project. The meeting attracted active participation from pulp and paper mills, government agencies, R&D institutions, academia and other stake holders.

- International UNIDO experts Mr Jari Mannikko, University of Helsinki & Mr Oyvind Erickson, Paper & Fiber Research Institute, Norway visited CPPRI to get acquainted with facilities and expertise available at CPPRI as well as identify the areas and scope for further capacity development and improvement in capability / expertise.



UNIDO Workshop at Kadiapur



UNIDO Workshop at Chandigarh



UNIDO Workshop at Coimbatore



UNIDO Workshop at Vapi

## PROJECTS SPONSORED BY PULP, PAPER AND ALLIED INDUSTRIES

### Raw Material Preparation, Evaluation, Pulping and Bleaching

#### Efficient Depithing of Bagasse Through Disc Mill

- Tamilnada Newsprint & Papers Limited, Kagithapuram, Tamilnada

#### Additive Pulping of Acacia Wood Chips

- Solem Singapore Private Limited, Indonesia

#### Laboratory and Pilot Plant Pulping and Bleaching Trials of Agrifibres

- ITC Life Sciences and Technology Centre, Bengaluru, Karnataka

#### Laboratory and Pilot Plant Extraction of Pulping Trials of Hardwood

- ITC Life Sciences and Technology Centre, Bengaluru, Karnataka

#### Ozone Bleaching of Unbleached Hardwood Pulp

- ITC Life Sciences & Technology Centre, Bengaluru, Karnataka

#### Laboratory and Pilot Plant Trials for Producing High Alpha Cellulose Pulp from Coir Fibers

- Indian Institute of Carpet Technology, Bhadohi

#### ECF Bleaching of Hardwood Pulp

- BITS Pilani - Hyderabad Campus, Telangana

#### Oxygen pretreatment followed by ClO<sub>2</sub>/H<sub>2</sub>O<sub>2</sub> and DClO<sub>2</sub>/H<sub>2</sub>O<sub>2</sub> bleaching of hardwood pulp

- Grassia Industries Limited (Unit: Harihar Polyfibers) Kumarapattam, Karnataka

#### Evaluation of additive pulping of mix hard wood sample

- Pirai Bio Sciences Pvt. Limited, Bengaluru, Karnataka

#### Additive pulping of hardwood sample

- Novicare India Technical Specialty-IF Business, Thane (W), Maharashtra



## **Pulp / Chemical Evaluation, Waste Paper Recycling and Paper making**

### **Lab Scale Flootation Deinking of OCC & NCC Furnish**

- Arab Paper Manufacturing Company, Dammam, Kingdom of Saudi Arabia

### **Effect of Refining on development of Fiber Properties of Used Tetra Pak Cartons (UTPC)**

- Tetra Pak India Private Limited, Choragram, Haryana

### **Evaluation of Impact of Dry Strength and Wet Strength Resin Samples to Improve Physical Strength Properties of Different Grades of Paper**

- Ion Exchange (India) Limited, Hyderabad

### **Repulpability of Waste Paper / Paper Adhesive Tape**

- Grippio Solutions (India) Private Limited, Mumbai, Maharashtra
- Sri Laxmi Exports, Chennai, Tamilnadu

### **Evaluation of Choked Material Collected from a Mill for Percentage Fiber & Hemicellulose Content**

- Goodrich Agrochem Private Limited, Karnal, Haryana

### **Evaluation of Oxidised Starch Sample**

- Hindal Paper Mills Limited, Meerapuragar, Uttar Pradesh
- Gayatri Shakti Paper & Boards Limited, Unit - II, Mumbai, Maharashtra

### **Evaluation of Card paper (White board paper) & Dissolving grade pulp**

- Intertek India Private Limited, Mumbai, Maharashtra

### **Evaluation of Pulp Sample for Pitch Content in the Pulp**

- Century Pulp & Paper, Lalkua, Uttarakhand

### **Evaluation of Market RCF Pulp/ Moulded Tray for Fiber Quality**

- Everest Industries Limited, Haridwar, Uttarakhand

- Archana Traders, Chennai, Tamilnada
- Quantum Papers Limited, Sialkhot, Punjab
- Universal Engineering Corporation, Saharanpur, Uttar Pradesh
- Tradecom International Limited, New Delhi
- DFE Pharma, Tamil Nadu
- Century Rayon, Thane, Maharashtra
- **Analysis of GCC powder for chemical composition and Abrasion value**
- HPC - Nagaon Paper Mill, Kapainghat, Assam
- **Evaluation of Softwood/Acacia wood Pulp for brightness**
- Regent Exim International Limited, New Delhi
- Seascope Pulp & Papers Private Limited, Muribul, Maharashtra
- **Analysis of Paper Board for DBA HMK/Sulphur Content**
- Rochira Papers Limited, Sirmour, Himachal Pradesh
- Khanna Paper Mills Limited, Gurgaon, Haryana
- **Analysis of Fibre Quality of Market/Wood Pulp**
- Tradecom International Limited, New Delhi
- DFE Pharma, Tamil Nadu
- Century Rayon, Thane, Maharashtra
- **Evaluation of Softwood/ Hardwood for Moisture, Brightness & Strength properties**
- Avantha Center for Industrial Research & Development (ACIRD), Yamuna Nagar, Haryana
- Quantum Papers Limited, Sialkhot, Punjab

## Environmental Management

### Adequacy Assessment / Performance Evaluation of ETP

- The International Paper APPM Limited, Rajahmundry, Andhra Pradesh
- Sandeep Papers (P) Limited, Noida, Uttar Pradesh
- Sidharth Paper (P) Limited (Unit -II), Kashipur, Uttarakhand
- Meenu Paper Mills (P) Limited, Mozaffarnagar, Uttar Pradesh
- Deoria Paper Mills Limited, Deoria, Uttar Pradesh
- Nikita Papers Limited, Shamli, Uttar Pradesh
- Shree Mahavir Straw Board Mills Private Limited, Mainpuri, Uttar Pradesh
- Vishwanath Paper & Boards Limited, Jaspur, Uttarakhand
- Katyayini Paper Mills Private Limited, Kashipur, Uttarakhand
- Bill Unit Shree Gopal, Yamunanagar, Haryana
- Shree Badri Kedar Papers Private Limited, Bijnor, Uttar Pradesh

### Evaluation of Zero Liquid Discharge (ZLD) Status

- Gangotri Paper Mills Private Limited, Narsan Kanan, Distt. Haridwar, Uttarakhand
- Aristocraft Papers Private Limited, Mozaffarnagar, Uttar Pradesh

### Feasibility of Lime Kiln to Incinerate the Lime Sludge Generated

- Nami Paper Industries Limited, Kashipur, Uttarakhand

### Fresh Water Consumption Water Audit

- Dev Priya Industries Private Limited ( Unit I ) Meerut, Uttar Pradesh
- Dev Priya Industries Private Limited ( Unit II ) Meerut, Uttar Pradesh
- Gangotri Paper Mills Limited, Narsan Kanan, Uttarakhand

### **ETP Performance Evaluation**

- Bilt ( Unit Shree Copal), Yamunanagar, Haryana

### **Audit Assessment of Hazardous Waste**

- Century Pulp and Paper, Lalkua, Uttarakhand
- Chandigar Industries Limited, Noorpur, Uttar Pradesh
- Khutima Fibers Limited, Khutima, Uttarakhand

### **Chemical Recovery Trouble Shooting**

#### **Improved Chemical Recovery and Energy Efficiency through Liquor Heat Treatment in Combination of Desilication**

- Satia Paper Industries Limited, Muktsar, Punjab
- KR Pulp & Papers Limited, Shahjahanpur, Uttar Pradesh
- Trident Papers Limited, Harnala, Punjab

### **Adequacy Assessment of LTI Based Chemical Recovery System**

- Garg Duplex Private Limited, Muzaffarnagar, Uttar Pradesh
- Bindals Duplex Private Limited, Muzaffarnagar
- Rayana Paper Mills Limited, Khalilabad, Uttar Pradesh
- Mohit Paper Mills Limited, Bijpur, Uttar Pradesh
- Tehri Paper Mill Limited, Muzaffarnagar, Uttar Pradesh

## TECHNICAL & CONSULTANCY SERVICES

- Technical and Consultancy services were rendered to the following mills and organizations by analyzing various samples of fibrous and non-fibrous raw materials, pulp, paper, black liquor, lime, lime sludge, rice husk, green liquor, white liquor, effluents, ground water, solid waste, etc.:

- Acro Ventures Private Limited., Meerut, Uttar Pradesh
- Agarwal Duplex Board Mills Limited, Muzaffarnagar, Uttar Pradesh
- Agarwal Zarda Factory Private Limited., Saharanpur, Uttar Pradesh
- Alok Printers & Publishers, Agra, Uttar Pradesh
- Anand Duplex Limited, Meerut, Uttar Pradesh
- Anand Triplex Board Limited, Meerut, Uttar Pradesh
- Anandeshwar Industries Private Limited, Kanpur, Uttar Pradesh
- Anna University, Chennai, Tamilnadu
- Antardeshiye Container Depot, New Delhi
- Anupam Prakashan, Mathura, Uttar Pradesh
- Archana Traders, Chennai, Tamilnadu
- Arcoy Biorefinery Private Limited, Gujarat
- Arham Technochem, Sahibabad, Uttar Pradesh
- Asad Rehman, Saharanpur, Uttar Pradesh
- Avantha Centre for Industrial Research & Development, Yamunanagar, Haryana
- Axiom Sarbha Shiksha Abhiyan Mission, Guwahati, Assam
- Baba Saheb Bhimrao Ambedkar University, Lucknow
- Bahl Paper Mill Limited, Kashipur, Uttarakhand
- Ballarpur Industries Limited, Yamunanagar, Haryana
- Bank Note Paper Mills India Private Limited, Mysore, Karnataka
- Banwari Paper Mills Ltd., Kashipur, Uttarakhand
- Batra Art Press, New Delhi
- Bennett Coleman & Company Limited, New Delhi
- Bhagwat Printing Press, Mathura, Uttar Pradesh
- Bhagwati Kripa Paper Mill Private Limited, Jaipur, Rajasthan
- Bhupendra Narayan Mandal Vishwavidyalaya, Bihar
- Bihar Lok Prashashan Avam Gramin Vikas, Patna, Bihar
- Bihar State Text Book Publishing, Patna, Bihar
- Bihar Vidyalaya Pariksha Samiti, Patna, Bihar
- Bihar Sanskrit Shiksha Board, Patna, Bihar
- Hindals Papers Mills Limited, Muzaffarnagar, Uttar Pradesh
- HTS Pilani, Hyderabad, Telangana
- Board of School Education Haryana, Bhiwani, Haryana
- Brown Group, Mumbai, Maharashtra
- Harda Druck India Private Limited, Greater Noida, Uttar Pradesh
- Chaudhary Charan Singh University, Meerut, Uttar Pradesh
- Central Board of Secondary Education, Delhi
- Central Excise, New Delhi

- Central Pollution Control Board, New Delhi
- Centre For Environmental Studies, Chennai
- Century Pulp and Paper, Lucknow, Uttarakhand
- Century Pulp and Paper, New Delhi
- Century Rayon, Thane, Maharashtra
- Chacha Printers & Publisher, Lucknow, Uttar Pradesh
- Chamunda Paper Private Limited, Hapur, Uttar Pradesh
- Chandpur Enterprises Limited, Bijnor, Uttar Pradesh
- Cheema Papers Limited, Kashipur, Uttarakhand
- Chhattisgarh Madhyamic Shiksha Mandal, Raipur, Chhattisgarh
- Chhattisgarh Pathya Pustak Nigam, Raipur, Chhattisgarh
- Commissioner of Customs (Import), Chennai, Tamilnadu
- Commissioner of Customs, Erode, Tamilnadu
- Coral News Prints Limited, Gorakhpur, Uttar Pradesh
- Currency Note Press, Nashik, Maharashtra
- Deepak Printers & Publishers, Haridwar, Uttarakhand
- Delhi Bureau of Text Books, New Delhi
- Delta Paper Mills Limited, Vendra, West Godavari, Karnataka
- Deoria Paper Mills Limited, Deoria, Uttar Pradesh
- Dev Priya Fibres Private Limited, Meerut, Uttar Pradesh
- Dev Priya Industries Private Limited, Meerut, Uttar Pradesh
- Dev Priya Papers Private Limited, Meerut, Uttar Pradesh
- Dev Priya Industries Limited (Unit I) Meerut, Uttar Pradesh
- Dev Priya Industries Limited (Unit II) Meerut, Uttar Pradesh
- Dev Priya Product Limited, Meerut, Uttar Pradesh
- Devishi Papers Private Limited, Kashipur, Uttarakhand
- Directorate of Printing Stationery & Publication, Orissa
- Directorate of Publicity & Public Relation, New Delhi
- Directorate of Revenue Intelligence, Surat, Gujarat
- Disha Industries Limited, Moradnagar, Uttar Pradesh
- Dr. Hari Singh Gauri Vishwavidyalaya, Nagari, Madhya Pradesh
- Durga Brick Field, Sahibabad, Uttar Pradesh
- Durgesh Printing Press, Mathura, Uttar Pradesh
- Dynamic Text Books Printers Private Limited, Jhansi, Uttar Pradesh
- Ectorpulpac, Roorkee, Uttarakhand
- Elementary Education Haryana, Panchkula, Haryana
- Enakay Enterprises, New Delhi
- Employment News, New Delhi
- Enmas Andritz Private Limited, Chennai, Tamilnadu
- Everest Industries Limited, Bhagwanpur, Uttarakhand
- Fibrenews Papers Limited, Jaipur, Uttarakhand
- Galaxy Papers Private Limited, Moradnagar, Uttar Pradesh
- Ganga Pulp & Papers Private Limited, Chandauli, Uttar Pradesh
- Gangotri Paper Mills Private Limited, Haridwar, Uttarakhand

- Garg Duplex & Paper Mills Private Limited, Muzaffarnagar, Uttar Pradesh
- Gayatri Paper & Boards Limited - Unit-II, Mumbai, Maharashtra
- Genus Paper & Boards Limited, Moradabad, Uttar Pradesh
- Genus Paper Products Limited, Moradabad, Uttar Pradesh
- Godawari Biorefinery Limited, Mumbai, Maharashtra
- Good Luck Publisher Limited, Saharanpur, Uttar Pradesh
- Govt. Printing & Stationery, Gandhinagar, Gujarat
- Grassim Industries Limited ( Unit Haripur Polyfibers ) , Kumarpatnam , Karnataka
- Grippio Solutions India Private Limited., Mumbai, Maharashtra
- Gujarat Offset Private Limited, Ahmedabad, Gujarat
- Gujarat State Board of School Text Book, Gandhinagar, Gujarat
- Guru Gobind Singh Indraprastha University, New Delhi
- Hariom Industries Limited, Kanpur, Uttar Pradesh
- Harsh Enterprises, Kanpur, Uttar Pradesh
- Harsh Enterprises, New Delhi
- Haryana School Shiksha Pariyojna Parishad, Panchkula, Haryana
- Himalaya Bricks Field, Saharanpur, Uttar Pradesh
- Hindustan Paper Corporation Limited, New Delhi
- Hi-Tech Printers & Publishers, Mathura, Uttar Pradesh
- Holy Faith International Private Limited, Ghaziabad, Uttar Pradesh
- Holy Faith International Private Limited, New Delhi
- Huhtamaki Paper Product Limited, Thane, Maharashtra
- The Institute of Chartered Accountants of India, Noida, Uttar Pradesh
- Indira Gandhi Open University (IGNOU), New Delhi
- International Paper India Private Limited, Hyderabad, Andhra Pradesh
- Intertek India Private Limited., Mumbai, Maharashtra
- ITC Life Science, Bangalore, Karnataka
- ITC Limited, Coimbatore, Tamilnadu
- ITC Limited, Mangalore, Karnataka
- ITC Limited, Bhadrachalam, Andhra Pradesh
- ITC Limited, Khummati, Andhra Pradesh
- J.B. Datta Papers Limited, Sitapur, Uttar Pradesh
- J.K. Paper Limited, New Delhi
- J.K. Paper Limited, Rayaguda, Orissa
- Jarak Education, Bhaktapur, Nepal
- Janki Newsprint Limited, Meerut, Uttar Pradesh
- Jawahar Nandaya Vidyalyaya, Saharanpur, Uttar Pradesh
- JMI Paper Products, Roorkee, Uttarakhand
- K.R. Pulp & Papers Limited, Delhi
- K.C. Printing & Allied Works, Mathura, Uttar Pradesh
- K.R. Pulp & Paper Limited, Unit I, Shahjahanpur, Uttar Pradesh
- K.R. Pulp & Paper Limited Unit II, Shahjahanpur, Uttar Pradesh
- Kailash Printing Press, Bhopal, Madhya Pradesh
- Kamakshi Paper Private Limited, J.P. Nagar, Uttar Pradesh

- Kanakshi Papers Private Limited, Gazraula, Uttar Pradesh
- Kangaroo Industries, Ludhiana, Punjab
- Karafiya Collector Avam Zila Nirvachan Adhikari, Indore, Madhya Pradesh
- Karafiya Collector Avam Zila Nirvachan Adhikari, Jabalpur, Madhya Pradesh
- Karafiya Madhyamie Shiksha Mandal, Bhopal, Madhya Pradesh
- Katyayini Paper Mills Private Limited, Kashipur, Uttarakhand
- Kawatra Papers Private Limited, Dadri, Uttarakhand
- Karmi & Associates, Allahabad, Uttar Pradesh
- Khanna Paper Mills Limited, Gurgaon, Haryana
- Khadema Fibers Limited, Khairua, Uttarakhand
- Kota University, Kota, Rajasthan
- Kuantan Papers Limited, Hoshiarpur, Punjab
- Laji Board India Private Limited, Ferozabad, Uttar Pradesh
- Life Insurance Corporation of India Zonal Office, Kanpur, Uttar Pradesh
- Lovely Professional University, Phagwara, Haryana
- Lucknow Printers & Publishers, Lucknow, Uttar Pradesh
- Madhya Pradesh Shram Kalyan Mandal, Bhopal, Madhya Pradesh
- Madhyamie Shiksha Board Rajasthan, Ajmer, Rajasthan
- Madhyamie Shiksha Mandal Madhya Pradesh, Bhopal
- Magnum Ventures Limited, Sahibabad, Uttar Pradesh
- Mahadev Pulp Products Private Limited, Kanpur, Uttar Pradesh
- Mahalaxmi Kraft & Tissue, Uttar Pradesh, Muzaffarnagar, Uttar Pradesh
- Maheshi Postkalaya, Mathura, Uttar Pradesh
- Manohar Printing Press, Mathura, Uttar Pradesh
- Maroti Papers Limited, Shamli, Uttar Pradesh
- Makhmal Chaturvedi National University of Journalism and Communication, Bhopal, Madhya Pradesh
- Meenu Paper Mills Private Limited, Muzaffarnagar, Uttar Pradesh
- Mehuli Paper Private Limited, Daboj, Gujarat
- Mohit Paper Mills Limited, Bijnor, Uttar Pradesh
- Modern Avam Lekhan Samagri Vibhag, New Raipur, Chattisgarh
- Modern Mahal Printers and Publisher, Agra, Uttar Pradesh
- Multiwall Duplex Private Limited, Kashipur, Uttarakhand
- Multiwall Pulp and Board Mills Private Limited, Kashipur, Uttarakhand
- MWV India Paperboard Packaging Private Limited, Pune, Maharashtra
- NP Enterprises, Meerut, Uttar Pradesh
- NR Agarwal Industries Limited, Unit-5, Vapi, Gujarat
- Nagaon Paper Mills, Nagaon, Assam
- Naini Papers Limited, Kashipur, Uttarakhand
- Naini Tissues Limited, Kashipur, Uttarakhand
- National Book Trust of India, New Delhi
- National Health Mission, Paschkula, Haryana
- National Institute of Open Schooling, Noida, Uttar Pradesh
- National Insurance Company Limited, Chandigarh



- National Printers, Ranchi, Jharkhand
- Navodaya Vidyalaya Samiti, Bhopal, Madhya Pradesh
- Nehrui Yuva Kendra Sangthan, Lucknow, Uttar Pradesh
- New Bonanza India Limited, Meerut, Uttar Pradesh
- Nikita Papers Limited, Sharnli, Uttar Pradesh
- National Institute of Open Schooling, Noida, Uttar Pradesh
- North Bihar Power Distribution Company Limited, Patna, Bihar
- Nove Care India, Thane, Maharashtra
- Office of the Assistant Commissioner of Customs, Ahmedabad, Gujarat
- Office of the Commissioner of Customs, Cochin, Kerala
- Office of the Assistant Commissioner of Customs, Chennai, Tamilnadu
- Office of the Deputy Commissioner of Customs, Gandhinagar, Gujarat
- Office of the Additional Commissioner of Customs, Bangalore, Karnataka
- Office of the Assistant Commissioner of Customs, Gandhinagar, Gujarat
- Office of the Commissioner of Customs, Gautam Budh Nagar, Uttar Pradesh
- Office of the Deputy Commissioner of Customs, Surat, Gujarat
- Orient Packaging Limited, Saharanpur, Uttar Pradesh
- Orient Paper Industries Limited, Amlai, Madhya Pradesh
- Oyster Printers & Publishers Private Limited, Mathura, Uttar Pradesh
- Patas Biosciences Private Limited, Bangalore, Karnataka
- Parijat Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Paswan Papers Limited, Meerut, Uttar Pradesh
- Pathya Postak Adhikari, Lucknow, Uttar Pradesh
- Pellet Energy Systems Private Limited, Bhagwanpur, Uttar Pradesh
- Pioneer Printers & Publishers, Kanth, Uttar Pradesh
- Ptambra Books Private Limited, Jhansi, Uttar Pradesh
- Pragati Papers Industries Limited, Delhi
- Pragy Publication Private Limited, Mathura, Uttar Pradesh
- Pratibha Printing Press, Mathura, Uttar Pradesh
- Premier International, Saharanpur, Uttar Pradesh
- Prime Pulp & Paper Private Limited, Muzaffarnagar, Uttar Pradesh
- District Institute of Education Training, Bharatpur, Rajasthan
- Printex India Printers & Publisher, Allahabad, Uttar Pradesh
- Printing & Stationery Department Haryana, Chandigarh
- Prolific Papers Private Limited, Kashipur, Uttarakhand
- PSB Papers Limited, Harpur, Uttarakhand
- Punjab National Bank, Noida, Uttar Pradesh
- Punjab State Lotteries, Chandigarh
- Queensland University of Technology, Australia
- R.P. Printers, Noida, Uttar Pradesh
- R.D. Papers Limited, Kasganj, Uttar Pradesh
- Raj Chemicals Limited, Ahmedabad, Gujarat
- Raj Enterprises, Haldwani, Uttarakhand
- Rajasthan Rajya Pathya Postak Mandal, Jaipur, Rajasthan

- Rajasthan State Open School, Jaipur, Rajasthan
- Rajasthan State Road Transport Corporation, Jaipur, Rajasthan
- Rajaya Swanthya Avam Parivar Kalayan, Lucknow, Uttar Pradesh
- Rajeev Prakashan, Allahabad, Uttar Pradesh
- Rajlakshmi Paper & Board Limited, Hazipur, Uttarakhand
- Rajya Kendriya Mudramalaya, Jaipur, Rajasthan
- Rama Shyama Paper Limited, Haridwar, Uttar Pradesh
- Ramesh Publishing House, Mathura, Uttar Pradesh
- Ramraja Printers & Publisher, Jhansi, Uttar Pradesh
- Ravi Offset Printers & Publisher Private Limited, Agra, Uttar Pradesh
- Rawat Prakashan Mansir, Hathras, Uttar Pradesh
- Rayana Paper Board Industries Limited, Unit II, Sant Kabir Nagar, Uttar Pradesh
- Rayana Paper Board Industries Limited, Sant Kabir Nagar, Uttar Pradesh
- Regent Exim International Limited, Delhi
- Rohdia Speciality Chemicals India Limited, Thane, Maharashtra
- RPIE Industries (India), Meerut, Uttar Pradesh
- Rochira Papers Limited, Sirmour, Himachal Pradesh
- S.G. Technologies, Roorkee, Uttarakhand
- Sahita Papers Limited, Jaipur, Uttarakhand
- Sainsons Paper Industries Limited, Pehowa, Haryana
- Sakshar Bharat Mission, Lucknow, Uttar Pradesh
- Sandeep Paper Mills Private Limited, Noida, Uttar Pradesh
- Sangal Papers Limited, Mowana, Uttar Pradesh
- Sangal Papers Limited, Meerut, Uttar Pradesh
- Sarawati Press, Mathura, Uttar Pradesh
- Satia Industries Limited, Muktsar, Uttar Pradesh
- Sehanai Business Forms Private Limited, Mirambai, Maharashtra
- Sh. L. Muthupalasamippris, Chennai, Tamilnadu
- Sh. R. S. Shah, Surat, Gujarat
- Shah Deevi Shree & Co., Mumbai, Maharashtra
- Shakti Kraft and Tissues, Muzaffarnagar, Uttar Pradesh
- Shakambhari Pulp & Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Shankya Mudran Avam Lekhan Samagri Vibhag, Bhopal, Madhya Pradesh
- Shankya Mudran Avam Stationery, Bhopal, Madhya Pradesh
- Sheel Printers, Mathura, Uttar Pradesh
- Shree Badri Kedar Private Limited, Najibabad, Uttar Pradesh
- Shree Laxmi Exports, Chennai, Tamilnadu
- Shree Mahaveer Straw Board Private Limited, Mainpuri, Uttar Pradesh
- Shree Nageshwar Papers Limited, Kanpur, Uttar Pradesh
- Shree Siddhali Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Shree Venkatesh Paper Mills Limited, Meerut, Uttar Pradesh
- Shreyam Industries Limited, Ahmednagar, Gujarat
- Shreyam Industries Limited, New Delhi
- Shri Bhageshwari Papers Limited, Muzaffarnagar, Uttar Pradesh

- Shri Bhageshwari Papers Limited, Unit-I, Muzaffarnagar, Uttar Pradesh
- Shri Bhageshwari Papers Limited, Unit-II, Muzaffarnagar, Uttar Pradesh
- Shri Kela Gee Books Private Limited, Agra, Uttar Pradesh
- Stratum Institute for Industrial Research, Delhi
- Shyam Paper Mart, Kanpur, Uttar Pradesh
- Siddheshwari Industries Private Limited, Muzaffarnagar, Uttar Pradesh
- Siddheshwari Paper Udyog Limited, Kashipur, Uttarakhand
- Sidharth Papers Limited, Kashipur, Uttarakhand
- Sidharth Papers Limited, Unit II, Kashipur, Uttarakhand
- Silverton Pulp & Paper Private Limited, Muzaffarnagar, Uttar Pradesh
- Singhal Agencies, Lucknow, Uttar Pradesh
- Skylark Printers & Publishers Private Limited, Mathura, Uttar Pradesh
- Solenis Chemicals India Private Limited, Pune, Maharashtra
- Sonex Print Pack Private Limited, New Delhi
- South Bihar Power Distribution Company Limited, Patna, Bihar
- South Eastern Railway, Kolkata, West Bengal
- Sripathi Paper & Boards Private Limited, Srivakasi, Tamilnadu
- SSUPSW, Kanpur, Uttar Pradesh
- Star Kraft Papers Private Limited, Meerut, Uttar Pradesh
- Star Paper Mill Limited, Saharanpur, Uttar Pradesh
- State Bank of Patiala, Patiala, Punjab
- State Educational & Training Center Chhatisgarh, Raipur, Chhattisgarh
- State Election Commission Haryana, Panchkula, Haryana
- State Health Society Bihar, Patna, Bihar
- State Society For Ultra Poor and Social Welfare, Patna, Bihar
- Suchi Paper Mills Limited, Noida, Uttar Pradesh
- Suchna Avam Jan Sampark Vibhag, Patna, Bihar
- Suryash Kraft and Paper Limited, Muzaffarnagar, Uttar Pradesh
- Suryash Paper Mills, Hasti, Uttar Pradesh
- Suryash Paper Mills, Ganeshpur, Uttar Pradesh
- Swarnop Papers Private Limited, Saharanpur, Uttar Pradesh
- Tamilnadu News Print and Papers Limited, Kallihapuram, Tamilnadu
- Tamilnadu Text Book & Educational Corporation, Chennai, Tamilnadu
- Tehri Pulp & Paper Limited, Unit-I, Muzaffarnagar, Uttar Pradesh
- Tehri Pulp & Paper Limited, Unit-II, Muzaffarnagar, Uttar Pradesh
- Terry Jose & Associates Limited, Chennai, Tamilnadu
- Tetra Pack India Private Limited, Gurugram, Haryana
- The Oriental Insurance Company Limited, Chandigarh
- The Sandesh Limited, Ahmedabad, Gujarat
- The Tribune Trust, Chandigarh
- The West Coast Paper Mills Limited, Dandeli, Karnataka
- The West Coast Paper Mills Limited, New Delhi
- Tirupati Balaji Fibers Limited, Muzaffarnagar, Uttar Pradesh
- Tirupati Stationery Private Limited, Kanpur, Uttar Pradesh

- Tradecom International Limited, Mumbai, Maharashtra
- Trident Limited, Barnala, Punjab
- Universal Engineering Corporation, Saharanpur, Uttar Pradesh
- Uttar Pradesh Zila Nirvachan Adhikari, Sahajahanpur, Uttar Pradesh
- Upkar Printers & Publishers, Agra, Uttar Pradesh
- Varidman Industries, Meerut, Uttar Pradesh
- Ved Cellulose Limited, Hapur, Uttar Pradesh
- Veer Bahadur Singh Parvanchal University, Jaunpur, Uttar Pradesh
- Veer Bundelkhand Press, Jhansi, Uttar Pradesh
- Vikram Vishwavidyalaya, Ujjain, Madhya Pradesh
- Vinaka Industries Limited, Nalgonda, Telangana
- Vishwakarma Paper & Boards Limited, Kashipur, Uttarakhand
- Vishwa Pariwar, Raipur, Chhattisgarh
- Vishwanath Paper & Boards Limited, Kashipur, Uttar Pradesh
- Yash Papers Limited, Faizabad, Uttar Pradesh
- Yojana Aam Vikas Vibhag, Patna, Bihar
- Zila Gramin Vikas Adhikaran, Baksa
- Zila Gramin Vikas Adhikaran, Muzaffarpur, Bihar
- Zila Gramin Vikas Adhikaran, Sitamahi, Bihar
- Zila Gramin Vikas Adhikaran, Supaul, Bihar
- Zila Swasthya Samiti, Betwa, Bihar

## MEETINGS DURING 2015-2016

### Meeting of Cess Committee

The first meeting of reconstituted Cess Committee was organized at Udyog Bhawan New Delhi on July 29, 2015 under the Chairmanship of Shri Shailendra Singh, Joint Secretary, Ministry of commerce & Industry (DIPP). Members of the Council as well as special invitees from DIPP, IARPMA, INMA, CPPRI etc attended the meeting. The agenda of the meeting was to discuss the progress of on – going projects and new project proposals for approval of the Cess Committee. The Chairman Cess Committee constituted different sub – committees to review the new project proposals as well as progress of on- going projects.

### Meeting of Council of Association of CPPRI

A meeting of Council of Association of CPPRI was held on February 23, 2016 at Udyog Bhawan, New Delhi under the Chairmanship of Shri Shailendra Singh, Joint Secretary DIPP. Various issues related to CPPRI were taken up for discussion during the meeting.



Meeting of CPPRI Council of Association

### Meeting of Technical Sub-Committee

In its meeting held on July 29, 2015, the Cess Committee constituted a technical sub - committee to review the progress of various on going Cess projects and new projects proposals. The committee constituted included:

- |    |   |   |                  |
|----|---|---|------------------|
| 1. | Dr.H.L. Bihani, Consultant                        | * | Chairman         |
| 2. | Shri Anil Kumar, VP, IARPMA                       | * | Member           |
| 3. | Dr.Dharam Dhill, IIT Roorkee, (Saharanpur Campus) | * | Member           |
| 4. | Dr. Suresh Panwar, Sc F, CPPRI                    | * | Member           |
| 5. | Dr.R.K. Jain, Director In Charge, CPPRI           | * | Member Secretary |

In the same context the meeting of sub- committee was held under the chairmanship of Dr. H.L. Bihani at CPPRI Base Office, New Delhi on December 23, 2015. The meeting was also attended by senior scientists from CPPRI and officials from Acumtha Centre for Industrial research & Development (ACIRD), Indian Paper Manufacturers Association (IPMA), Indian Agro & Recycled Paper Mill Association (IARPMA), Indian Rubber Manufacture & Research Association (IRMRA), International Paper - APPM, JK Paper Ltd.

## Other Meetings Attended by CPPRI Scientists during 2015-16

- Dr. R.K. Jain and Dr. M.K. Gupta attended the meeting of Empowered Committee chaired by the Secretary DIPP related to subsidy claim of Cent Ply Pvt. Ltd., Distt. Kamrup, Assam under CCIS Scheme 2007 at Udyog Bhawan, New Delhi on April 6, 2015.
- Dr. S. Panwar attended a meeting organized by UKPPCH & CPCB on April 17, 2015 at Dehradun related to Implementation of Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries of Uttarakhand.
- Dr. S. Panwar and Dr. Nitin Endlay attended a meeting organized by Pulp & Paper Mills of Meerut Cluster related to Implementation of Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries in Meerut Cluster.
- Dr. S. Panwar and Dr. Nitin Endlay attended meeting at CPCB, New Delhi on June 17-18, 2015 to review of action plan submitted by various pulp and paper mills under Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries (Specific to Ganga River Basin).
- Dr. R. K. Jain & Dr. B.P. Thapliyal attended a meeting with UNIDO (IC-ASID) officials for preparation of project document for submission to DIPP at New Delhi on July 6 - 9, 2015.
- Dr. Sanjay Tyagi, attended a purchase committee meeting at Printing and Stationary Department, U.P. Govt. Lucknow on July 23, 2015.
- Dr. B. P. Thapliyal and Dr. Sanjay Tyagi attended the IPPTA Nomination Committee meeting at Ahmedabad on August 5, 2015.
- Dr. B. P. Thapliyal, attended a meeting on varnishing of Indian bank notes for increasing its life on August 19, 2015.
- Smt. Rita Tandon attended meeting with Joint Secretary at DIPP, Udyog Bhawan, New Delhi on August 14, 2015 regarding revival of Ashok Paper Mill, Darbhanga (Bihar).
- Dr. B. P. Thapliyal attended a meeting of Technical Committee for review on revival of Ashok Paper Mills, Bihar on August 21, 2015 at Udyog Bhawan New Delhi.
- Dr. M. K. Gupta attended a meeting organized by UPPCB & CPCB at Kanpur on August 22, 2015 to review the progress of Charter Implementation by Pulp & Paper mills of Kanpur and near by Cluster.
- Dr. S. Panwar, Dr. S. Mishra and Dr. Nitin Endlay attended a meeting at Bilt (Unit Shree Gopal) on August 27, 2015 to discuss the mill's action plan related to compliance with requirements of Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries (specific to Ganga River Basin).

- Dr. S. Patwar attended a meeting organized by UPPCB & CPCB on September 15, 2015 at Meerut related to Implementation of Charter for Water Recycling & Pollution Prevention in Pulp & Paper Industries of Meerut Cluster.
- Dr. M. K. Gupta attended a meeting at Uttarakhand Environment Protection & Pollution Control Board, Dehradun on September 16, 2015 to discuss the Zero Liquid Discharge Status claimed by Gangotri Paper Mills Pvt Ltd., Roorkee.
- Dr. H. K. Jain and Dr. Nitin Endlay attended a meeting on Designing an Industrial Cleaner Production Program for Hindon Rejuvenation at Embassy of Sweden, October 12, 2015.
- Dr. B. P. Thapliyal, to attend the meeting on Indigenisation of Indian Currency on October 28, 2015 at RBI Mumbai.
- Dr. B. P. Thapliyal attended the meeting at the office of Controller Printing and Stationary, Haryana at Chandigarh on November 4, 2015.
- Dr. B. P. Thapliyal attended a meeting at BPE, New Delhi on December 15-16, 2015 to review Monitoring & Verification reports of paper sector.
- Dr. M. K. Gupta attended a meeting organized by UPPCB at Kanpur on March 12, 2016 to review the progress of charter implementation by pulp & paper mills of Eastern UP.
- Dr. S. Patwar attended meetings organized by UPPCB at Meerut (March 17, 2016), Moradabad (March 23, 2016) & Muzaffarnagar (March 29, 2016) to review the progress of charter implementation by pulp & paper mills in respective clusters.
- Dr. Nitin Endlay and Dr. Shivaker Mishra attended a meeting on River Hindon rejuvenation at Saharnpur Municipal Board Office on January 18, 2016.
- Dr. Sanjay Tyagi visited IGNOU for participating in tender opening Committee as a Technical expert January 25, 2016.
- Dr. B. P. Thapliyal, attended the meeting at BIS, New Delhi for discussion of upcoming CHD-15 meeting of Agenda Points on January 28, 2016.
- Smt. Rita Tandon and Dr. B. P. Thapliyal attended Bureau of Indian Standard (BIS)- CHD-15 meeting for Pulp, Paper & Allied products for review of Indian Standards at Manak Bhawan, New Delhi held on February 9, 2016.



## **NATIONAL DAYS & OTHER IMPORTANT DAYS OBSERVED BY CPPRI**

### **Independence Day**

CPPRI observed the Independence Day on August 15, 2015 and with usual fanfare and gaiety. After the guard of honour from CPPRI security staff, the Director Incharge Dr. Vinlesh Bist unfurled the national flag followed by singing of national anthem. She addressed the staff and their family, remembering the sacrifices of our national leaders, highlighting the activities of achievements of CPPRI and unveiling the future plans for growth of CPPRI. Meritorious students of CPPRI staff were rewarded for their excellent performance in Class X & XII examinations.

### **Republic Day**

CPPRI observed the Republic Day on January 26, 2016. After the guard of honour from CPPRI security staff, the Director Incharge Dr. R. K. Jain unfurled the national flag followed by singing of national anthem. Greeting the staff and their family on this auspicious occasion Dr. Jain paid homage to the freedom fighters and the makers / architects of the Constitution of India. He highlighted the achievements being made by CPPRI in addressing the technological and environmental issues of Indian Paper Industry.

## Glimpses of Independence Day Celebrations



## Glimpses of Republic Day Celebrations



### Rajbhasa Hindi Month

Hindi Pakhrasava was observed at CPPRI from September 1 to 30, 2015 to promote the use of Hindi in all official work including Scientific & Technical work. To summarize the progress of work in Hindi a meeting chaired by Dr. Vinlesh Biju, Director-in-charge, CPPRI was convened on September 14, 2015. Senior Officers of the Institute attended the meeting. The progress of the use of Hindi in Official work was reviewed and some guide lines were issued. It was informed that efforts are being made to translate the scientific articles and course manuals in Hindi for their wide use by technical personnel of paper mill located in Hindi speaking regions of the Country.

- Dr. R.K. Jain attended the meeting of Hindi Advisory Committee of Deptt. of Industrial Policy and Promotion on May 21, 2015 chaired by Hon'ble Minister of State for Commerce and Industry, Smt. Nirmala Sitharaman in Udyog Bhawan, New Delhi.
- Shri K.P.Sharma, Deputy Director, Ministry of Home Affairs, Department of Official Language visited the Institute on October 16, 2015 for inspection of progress of Hindi in official work in CPPRI.

### Vigilance Awareness Week

As per the directives of Central Vigilance Commission, the Institute observed **Vigilance Awareness Week** from October 26 -31, 2015. The theme of observing the Vigilance Awareness Week for year 2015 was **Preventive Vigilance as a tool for Good Governance**. To mark the occasion the **Vigilance Pledge** was administered to the employees & students of the Institute to fight against corruption by Dr. R.K.Jain, Director Incharge & Chief Vigilance Officer (CVO). The message of His Excellency, **President of India, Shri Pranab Mukherjee** and **Hon'ble Prime Minister, Shri Narendra Modi** were read out by Shri Anil Kumar, Administrative Officer. Posters and banners carrying anti corruption motivational slogans were displayed at the various prominent locations in the institute to create an awareness and promote transparency & integrity among the officials. Competitions related slogans, poster making and debates were organised to mark the occasion. The programme was coordinated by Shri. M.P. Sharma.



Administration of Pledge on Vigilance Awareness Week

## **TRAINING PROGRAMME ORGANISED / TRAINING RENDERED**

### **13<sup>th</sup> Cess Training Programme on Energy & Environment Management in Pulp & Paper Industry, CPPRI, July 28-29, 2015**

The objective of the training programme was to create an awareness on the Energy and Environmental issues like - Condition based diagnostic technique, Implementation of PAT, Normalization of specific energy consumption, Energy conservation opportunities and technologies, Strategies and technologies for Water conservation, Pollution reduction, Basics and fundamentals of efficient ETP operation management, Charter for Water Recycling and Pollution Prevention etc. Around 49 participants from various mills, institutes and organisations attended the training programme.

### **14<sup>th</sup> Cess Training Programme on Calibration and Quality Evaluation for Pulp and Paper Products, CPPRI from July 30-31, 2015**

The objective of the training programme was to disseminate information and provide hands-on training on calibration of paper testing equipments and methodology for quality evaluation of pulp and paper products. Around 31 participants from various mills, institutes and organisations attended the training programme.

### **Training Programme on Physical & Optical Properties of Different Grades of Paper, CPPRI, October 13- 2015**

A One day Training Programme was conducted at CPPRI Saharanpur for around 26 officials of Life Insurance Company of India (LIC) to create an awareness on the quality evaluation of physical characteristics of paper, different grades of paper and their properties, optical properties of paper, effect of environmental conditions on quality of paper, general defects in paper and provided training in the area of paper testing.

### **15<sup>th</sup> Cess Training Programme on Printing & Surface Properties Evaluation of Paper, CPPRI, January 19-20, 2016**

The objective of the training programme was to disseminate information and provide training on evaluation of printing & surface properties of paper. Around 40 participants from various mills, institutes and organisations attended the training programme.

**Glimpses of 15<sup>th</sup> Cess training Programme on Energy & Environment Management in Pulp & Paper Industry, CIPRI, July 28-29, 2015**



**Glimpses of 14<sup>th</sup> Cess training Programme on Calibration & Quality Evaluation for Pulp & Paper Industry, CPPRI, July 30-31, 2015**



**Glimpses of Training Programme on Physical & Optical Properties of Different Grades of Paper, CPPRI, October 13-2015**





**Glimpses of 15<sup>th</sup> CESA Training Programme on Printing and Surface Properties Evaluation of Paper January 19-30, 2016**



In addition, in - house training of one week to one - three month duration was provided to various officials nominated by their mills and students from following universities / colleges in the various area of pulp and paper making, biotechnology, environmental management and chemical recovery.

- Sam Higginbottom Institute of Agriculture Technology & Sciences, Allahabad, Uttar Pradesh
- Banasthali University, Banasthali, Rajasthan
- Guru Jambheshwar University of Science and Technology, Hisar, Haryana
- Maharishi Markandeshwar University, Mullana, Haryana

## PARTICIPATION IN SEMINAR, WORKSHOP AND TRAINING PROGRAMME

CPPRI scientists attended various seminars, workshop & training programme during 2015-16 to disseminate the information about the findings of various projects being executed by CPPRI as well as to update the knowledge about the latest developments in various aspects of pulp and paper technology. A brief summary of the seminar / workshop / training programme attended during 2015-16 is as under:

- **Conference on Indigenization of Currency, Vigyan Bhawan, New Delhi, June 1, 2015- Dr.B.P.Thapliyal**
- **Solar power Workshop, Vigyan Bhawan, New Delhi July 7, 2015 – Dr. B.P.Thapliyal**
- **Workshop on Advances in Packaging Technology, IIT Roorkee (Saharanpur Campus), October 6-7, 2015 – Dr. S. Panwar, Dr. B.P. Thapliyal, Dr.R.D. Godiyal, Dr. Nitin Indray, Dr.Sanjay Tyagi and Ms Prachi Kaushik**
- **Paperex 2015 Conference, Pragati Maidan, New Delhi – Dr. R.K. Jain, Mrs. Rita Tandon, Dr. S. Panwar, Dr. B.P. Thapliyal, Dr. M.K. Gupta, Dr. Kunaljeet Singh, Dr. R.D. Godiyal, Dr. A.K. Dixit, Dr. S. Mishra, Dr. Prii S. Lal, Mrs. Anuradha Jadhavle, Dr. Nitin Indray, Shri Alok Goyal, Dr. Sanjay Tyagi and Shri Satya Dev Negi.**

### CPPRI Participation Paperex 2015, New Delhi



- **IPPTA Workshop on Technological Advancement in Manufacturing Packaging Grades of Paper, Kashipur, Uttarakhand, 10-11 December 2015 - Dr. R.K. Jain, Smt. Rita Tandon, Dr. S. Panwar, Dr. B.P. Thapliyal, Dr. Nirm Endlay and Dr. Sanjay Tyagi.**
- **IPPTA Seminar on Resource Conservation as Key to Competitiveness, Kolkata, West Bengal, March 10-11, 2016 - Dr. R.K. Jain and Dr. S. Panwar,**



Participation of IITRI Scientists at IPPTA Seminar at Kashipur & Kolkata

- **National Workshop on Contemporary Surfacing Trends in analytics: Applications in Engineering and Management , February 12-13, 2016 at Department of Management Studies, National Institute of Technology, Hamirpur, Himachal Pradesh – Shri Kumar Anupam and Shri Pankaj Goley.**

**Stakeholders Consultative Meeting on UNIDO Project: Development and Adoption of Appropriate Technologies for Enhancing Productivity in the Paper and Pulp Sector**

- **Kashipur, February 18, 2016**

Dr. R. K. Jain, Smt. Rita Tandon, Dr. S. Panwar, Dr. B. P. Thapliyal, Dr. Karwaljeet Singh, Dr. Nirm Endlay and Dr. Sanjay Tyagi.

• **Chandigarh, March 5, 2016**

Dr. R. K. Jain, Smt. Rita Tandon, Dr. S. Patwar, Dr. B. P. Thapliyal, Dr. Karwaljeet Singh, Dr. R. D. Godiyal, Dr. A. K. Dixit, Dr. S. Mishra, Dr. Priti S. Lal, Smt. Amradhna Jambhale and Shri Alok Goyal

• **Vapi, March 12, 2016**

Dr. R. K. Jain, Smt. Rita Tandon, Dr. S. Patwar, Dr. B. P. Thapliyal, Dr. Karwaljeet Singh, Dr. R. D. Godiyal, Dr. A. K. Dixit and Shri Satya Dev Negi

• **Coimbatore, March 19, 2016**

Dr. R. K. Jain, Smt. Rita Tandon, Dr. S. Patwar, Dr. B. P. Thapliyal, Dr. M. K. Gupta, Dr. Karwaljeet Singh, Dr. R. D. Godiyal, Dr. A. K. Dixit

**Glimpses of First Stakeholders Consultative Meeting on UNIDO Project: Development and Adoption of Appropriate Technologies for Enhancing Productivity in the Paper and Pulp Sector, Kathipur, February 18, 2016**



**Glimpses of Second Stakeholders Consultative Meeting on UNIDO Project: Development and Adoption of Appropriate Technologies for Enhancing Productivity in the Paper and Pulp Sector, Chandigarh, March 5, 2016**



**Glimpses of Third Stakeholders Consultative Meeting on UNIDO Project: Development and Adoption of Appropriate Technologies for Enhancing Productivity in the Paper and Pulp Sector, Vapi, March 12, 2016**





**Glimpses of Fourth Stakeholders Consultative Meeting on UNIDO Project: Development and Adoption of Appropriate Technologies for Enhancing Productivity in the Paper and Pulp Sector, Coimbatore, March 19, 2016**



## PAPERS PRESENTED AND LECTURES DELIVERED

### 4<sup>th</sup> National Conference on Role of Technology and Management in Technocracy at Dev Bhoomi Group of Institutions, Saharanpur, April 5, 2015

- P. Kaushik, S. Tyagi and B.P. Thapliyal, "Role of calendaring technology in paper finishing –an Overview", 4<sup>th</sup> National conference on Role of technology and management in technocracy held at Dev Bhoomi in Group of Institute in April 2015.
- Black liquor heat treatment: to improve rheological and combustion behaviour –Dr. Titin
- Optimization of dilute acid pre-treatment conditions for efficient recovery of xylene from rice straw- Shri Vipin Gupta

### National Conference on Bio-fuel and Bio-energy, University of Petroleum and Energy Studies, Dehradun, June 12-13, 2015

- Poster presentation : Bagasse pith - a valuable source of bio-energy – Shri Dharmendra Kumar
- Cellulase production under solid state fermentation and it's application in hydrolysis of lignocellulosic biomass for 2nd generation bio-fuel - Ms Priyanka Jain

### 13<sup>th</sup> Cess training Programme on Energy & Environment Management in Pulp & Paper Industry, CPPRI, July 28 – 29, 2015

- Status of Indian Paper Industry –Dr. H.P. Thapliyal
- Application of IR Thermography as a Condition Based Preventive Maintenance Technique for Energy Conservation in Pulp and Paper Industry-Dr. B.P. Thapliyal
- CPCB Charter – An Overview of Challenges & Efficient ETP Management for Achieving Environmental Compliance – Dr.Nitin Foadlay
- Air Pollution, Control Equipments & Their Health Impact – Dr. Shivaker Mishra
- Latest Developments in Pulping and Bleaching Technologies to Reduce Water Consumption & Pollution Load Generation – Dr. Priti S. Lal
- Efficient Black Liquor Management Techniques to Reduce Pollution Load –Dr.A.K. Dixit
- Energy saving opportunities in Compressors & compressed air systems. – Dr. Sanjay Tyagi
- Energy Savings in Motors Mr. N. K. Naik

### **14<sup>th</sup> Cess Training Programme on Calibration and Quality Evaluation for Pulp and Paper Products, CPPRI, July 30 – 31, 2015**

- Status of Indian Paper Industry - Dr. R. K. Jain
- Laboratory Evaluation of Pulps for Physical and Strength Characteristics of Paper- Smt. Rita Tandon
- Importance of calibration and suitable methodology for pulp and paper mills – Dr. B.P. Thapliyal
- Optical properties of paper and their importance and measurement, – Dr. B.P. Thapliyal
- Fiber furnish analysis - Dr. R.D. Godiyal
- Quantitative Determination of Elemental Composition – Equipment Performance Evaluation through Calibration – Smt. Anuradha Jadhav
- Effects of environmental conditions on testing of paper properties - Dr. R.D. Godiyal
- Quality evaluation of Optical characteristics of paper - Dr. R.D. Godiyal
- Quality Evaluation of Physical Characteristics of paper - Dr. Sanjay Tyagi
- Methods of evaluating the Dynamic surface characteristics - Dr. Sanjay Tyagi
- Determination of kappa number and viscosity of pulp and their calibration - Dr. Arvind Kumar Sharma

### **IPPTA Zonal Seminar on Waste, Water & Air Management with Focus on Recycled, Ahmedabad, Gujarat Uttarakhand, August 6-7, 2015 2015**

- Water pinch innovative approach towards water conservation in pulp and paper industry – Dr. B.P. Thapliyal

### **Workshop on Advance in Packaging Technology, DPT of Paper Technology, IIT Roorkee, Saharanpur Campus on October 7, 2015**

- An innovative nano-coated packaging material – Dr. B.P. Thapliyal

### **Training Programme on Paper Properties, CPPRI, October 13, 2015**

- Importance of calibration and suitable methodology for pulp and paper mills – Dr. B.P. Thapliyal

- Optical properties of paper – their importance and measurement - Dr. B.P. Thapliyal
- Fiber furnish analysis - Dr. R.D. Godiyal
- Effects of environmental conditions on testing of paper properties - Dr. R.D. Godiyal
- Quality evaluation of physical characteristics of paper – Dr. Sanjay Tyagi

#### **IPPTA Workshop on Technological Advancement in Manufacturing Packaging Grades of Paper, Kashipur, Uttarakhand, December 10-11 2015**

- Reducing environmental footprint through holistic approach – a case study of pulp & paper mills in Kashipur cluster - Dr. Nitin Endray
- Performance evaluation of corrugated packaging – a key to success for paper mills and corrugators – Dr. Sanjay Tyagi

#### **15<sup>th</sup> Cess Training Programme on Printing & Surface Properties Evaluation of Paper, CPPRI, January 19-20, 2016**

- Development in surface characterization of paper and paper board - Dr. B.P. Thapliyal
- Demonstration on optical and microscopic evaluation of paper - Dr. R.D. Godiyal
- Facilities for testing of dynamic paper properties at CPPRI - Dr. Sanjay Tyagi

#### **IPPTA Seminar on Resource Conservation as Key to Competitiveness, Kolkata, March 10-11, 2016**

- Innovative Approach for Improved Energy & Chemical Recovery Efficiency in straw Based Paper Mills - Dr. R.K. Jain

## REPRESENTATION IN EXTERNAL COMMITTEES

### Ministry of Environment and Forests, New Delhi

- Member Environmental Impact Assessment Committee, Ministry of Environment and Forests - Dr. R.K.Jain
- Expert Member Committee for Import Policy for Waste Paper Ministry of Environment and Forests - Mrs. Rita Tandon

### Ministry of Commerce & Industry / Ministry of Finance

- Member of Technical Committee constituted by DIPP, Ministry of Commerce & Industry for inspection/verification of plant and machinery at Cent Ply Pvt Ltd, Assam and preparation of the inspection and assessment report related to subsidy claim of the mill under Central Capital Investment Subsidy Scheme 2007 - Dr.R.K. Jain and Dr.M.K. Gupta.
- Member of Technical Subcommittee of the Monitoring Committee constituted for Implementation of Revival Scheme of Ashoka Paper Mill, Durbhanga - Dr.M.K. Gupta and Shri S.D. Negi

### Kumarappa National Handmade Paper Institute (KNHPI), Jaipur

- Member Council of Association - Dr. R.K. Jain

### Bureau of Indian Standards (BIS), New Delhi

- Member Sectional Committee CHD 15 of Bureau of Indian Standards (BIS), New Delhi for Development of Standards of Different Paper and its Products - Mrs. Rita Tandon, Dr. B.P. Thapliyal and Dr. Sanjay Tyagi (Alternate Member)
- Member Sectional Committee on Water Quality for Industrial Purposes, Bureau of Indian Standards (IIS), New Delhi - Dr. S. Panwar
- Alert Panel Convener Paper and its Product Sectional Committee CHD15, Bureau of Indian Standard - Dr B.P. Thapliyal and Dr. Sanjay Tyagi ( Alternate Member)

### Bureau of Energy Efficiency (BEE), New Delhi

- Expert Member of Committee for Normalization of Specific Energy Consumption in Pulp and Paper Sector - Dr.B.P. Thapliyal

### **Indian Pulp and Paper Technical Association**

- Member Executive Committee – Dr. R.K. Jain
- Member Technical Committee – Smt. Rita Tandon
- IPTA Coordinator – Dr. B.P. Thapliyal

### **Avantha Centre for Industrial Research & Development, Yamuna Nagar Haryana**

- Member RAC Committee – Smt. Rita Tandon

### **External Examiner**

- Department of Paper Technology, IIT Roorkee – Smt. Rita Tandon, Dr. S. Parwar, Dr. B. P. Thapliyal, Dr. R.D. Godiyal, Dr. Nitin Endlay and Dr. Sanjay Tyagi (M.Tech Examiner)
- University of Petroleum and Energy Studies, Dehradun – Dr. Nitin Endlay (Ph.D Examiner)

### **Others**

- Member Technical Advisory and Paper Purchase Committee (TAAPC) of KINOU, New Delhi. – Dr. Sanjay Tyagi
- Member of Technical Committee for purchase of paper for Printing and Stationary Department, UP Govt, Lucknow – Dr. R. D. Godiyal and Dr. Sanjay Tyagi
- Member Technical Committee for Purchase of Paper, Haryana Government - Dr. Sanjay Tyagi

## PUBLICATIONS

- Kumar, Anupam, Swaroop, Vinay, Deepika, Lal, Priti S., and Bist : Vinodh Turning *Leucaena leucocephala* bark to biochar for soil application via statistical modelling and optimization technique; *Biological Engineering Onl.* 82(2015)
- Kaushik, Prachi, Tyagi, Sanjay, Thapliyal, B.P., Kumar Anupam; An approach for selection of coating color formulation using TOPSIS multi criteria decision making design; *TAPPSA Journal* 6 (2015)
- Thapliyal, B.P. and Tyagi : Sanjay. Water pinch innovative approach towards water conservation in pulp and paper industry *IPPTA*, 27 (3), 2015
- Tyagi, Sanjay, Thapliyal, B.P., Godiyal, R.D, Kaushik, Prachi and Manoj, Performance evaluation of corrugated packaging a key to success for paper makers and corrugators, *IPPTA*, 27 (4) 2015
- Endlay, Nitin, Mishra, Shivaker, Panwar, Suresh, Mohl, Salim, Vidyarthi, A.K and Agarwal, Pawan, Reducing environmental footprint through holistic approach – a case study of pulp & paper mills in Kashipur cluster, *IPPTA*, 27 (4), 2015
- Kamoga, Omar L.M., Byaruhanga, J.B., Godiyal, R.D., Kumar, Anupam, Characterization and evaluation of pulp and paper from selected Ugandan grasses for paper industry; *Cellulose Chemistry and Technology* 50 (2)(2016)
- Kumar, Anupam, Sharma, A.K., Lal, Priti S., Dutta, Soman, Maity and Sudip Preparation, characterization and optimization for upgrading *Leucaena leucocephala* bark to biochar fuel with high energy yielding; *Energy*, Vol. 106 (2016)

## REPORTS PREPARED

### Pulping and Bleaching

- Laboratory and Pilot Plant Pulping & Bleaching Trials of Agrifibres (project sponsored by ITC-Life Sciences & Technology Centre, Bengaluru, Karnataka)
- Laboratory and Pilot Plant Trials of Coir Fibres (project sponsored by Indian Institute of Carpet Technology, Bhadohi)
- Oxygen Pretreatment followed by Chlorite and Dioxide Bleaching of Hardwood Pulp (project sponsored by Grasim Industries Ltd., (Unit: Harihar Polyfibers, Kumarapattam, Karnataka)
- Evaluation of Additive Pulping of Mix Hard Wood Sample (project sponsored by Paras Bio Sciences Pvt. Ltd., Bengaluru, Karnataka)
- Additive Pulping of Hardwood Sample (project sponsored by Novenare India Technical Specialty-IP Business, Thane, Maharashtra)
- ECF Bleaching of Hardwood Pulp (project sponsored by BITS Pilani-Hyderabad Campus, Telangana)
- Laboratory and Pilot Plant Extraction of Pulping Trials of Hardwood (project sponsored by ITC-Life Sciences & Technology Centre, Bengaluru, Karnataka)

### Waste Paper Processing

- Evaluation of Wood pulp (sponsored by DTE Pharma, Tamil Nadu).
- Flotation Deinking of OCC & NCC furnish for stickies removal (sponsored by Arab Paper Manufacturing Company, Dammam, Kingdom of Saudi Arabia).

### Environmental Management

#### Charter Progress Verification Report

- Magnum Ventures Limited, Ghaziabad, Uttar Pradesh
- Star Kraft Papers Private Limited, Meerut, Uttar Pradesh
- Janka Newsprint Limited, Meerut, Uttar Pradesh
- Chandpur Enterprises Limited, Bijnor, Uttar Pradesh
- Kanav Papers Limited, Meerut, Uttar Pradesh
- Paswani Papers Limited, Meerut, Uttar Pradesh
- Sandeep Paper Mills (P) Limited, Gautam Buddh Nagar, Uttar Pradesh



- Mrituk Paper Mills Limited, Bijnor, Uttar Pradesh
- Rama Paper Mills Limited, Bijnor, Uttar Pradesh
- Dev Priya Product Private Limited, Meerut, Uttar Pradesh
- Maruti Papers Limited, Shamli, Uttar Pradesh
- Nikita Paper Limited, Shamli, Uttar Pradesh
- Sangal Papers Limited, Meerut, Uttar Pradesh
- Shree Badri Kedar Papers Private Limited, Najibabad, Uttar Pradesh
- Naini Tissues Limited, Kashipur, Uttarakhand
- Naini Papers Limited, Kashipur, Uttarakhand
- Siddheshwari Paper Udyog (P) Limited, Kashipur, Uttarakhand
- Sidharth Papers (P) Limited, Unit-I & Unit-II, Kashipur, Uttarakhand
- Hindals Duplex Limited, Unit-I & Unit-II, Muzaffarnagar, Uttar Pradesh
- Parijat Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Meenu Paper Mills (P) Limited, Muzaffarnagar, Uttar Pradesh
- Shree Sultibali Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Shri Ramesh Chander Straw Products Limited, Moradabad, Uttar Pradesh
- Shree Bhageshwari Papers (P) Limited, Unit-I & Unit-II, Muzaffarnagar, Uttar Pradesh
- Sahota Papers Limited, Jaspur, Uttarakhand
- Prolific Papers (P) Limited, Kashipur, Uttarakhand
- Cheerata Papers Limited, Kashipur, Uttarakhand
- Vinaywanath Paper & Boards Limited, Jaspur, Uttarakhand
- PSH Papers Limited, Udham Singh Nagar, Uttarakhand
- Rajlakshmi Paper & Board Pvt. Limited, Jaspur, Uttarakhand
- Magnum Ventures Limited, Sahibabad, Uttar Pradesh
- Shree Sultibali Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Shree Bhageshwari Paper Limited, Muzaffarnagar, Uttar Pradesh
- Silverton Pulp & Paper Private Limited, Muzaffarnagar, Uttar Pradesh
- Garg Duplex & Paper Mills Private Limited, Muzaffarnagar, Uttar Pradesh
- Star Paper Mill Limited, Saharanpur, Uttar Pradesh
- Hill (Unit Shree Gopal), Yamunanagar, Haryana
- NS Paper Limited, Muzaffarnagar, Uttar Pradesh
- Garg Duplex & Paper Mills Private Limited, Muzaffarnagar, Uttar Pradesh
- Sidharth Paper Limited, Kashipur, Uttarakhand
- Siddheshwari Paper Udyog Limited, Kashipur, Uttarakhand
- Shakti Kraft and Tissues Mill Limited, Muzaffarnagar, Uttar Pradesh
- Sahota Papers Limited, Jaspur, Uttar Pradesh
- Soyash Paper Mills Ltd, Basti, Uttar Pradesh
- Rajlakshmi Paper & Board Limited, Barapur, Uttarakhand
- Soyash Kraft and Paper Limited, Muzaffarnagar, Uttar Pradesh
- Shree Badri Kedar Papers Private Limited, Bijnor, Uttar Pradesh
- Gangotri Paper Mills Limited, Nainital, Uttarakhand
- Sainsons Paper Industries Limited, Kurukh, Haryana
- Shree Bhageshwari Paper Limited, Unit-I Muzaffarnagar, Uttar Pradesh
- Shree Bhageshwari Paper Limited, Unit-II Muzaffarnagar, Uttar Pradesh
- Genus Paper & Boards Limited, Moradabad, Uttar Pradesh

- Sandeep Paper Mills Private Limited, Noida, Uttar Pradesh
- Tehri Pulp and Paper Limited, Muzaffarnagar, Uttar Pradesh
- Multiwal Pulp & Board Mills Private Limited, Kashipur Uttarakhand
- Cheema Papers Limited, Kashipur, Uttarakhand
- Chamunda Papers Private Limited, Hapur, Uttar Pradesh
- Dev Priya Papers Private Limited, Meerut, Uttarakhand
- New Bonanza India Limited, Meerut, Uttar Pradesh
- Sangal Paper Limited, Maswana, Uttar Pradesh
- Mahalaxmi Craft & Tissues Private Limited, Muzaffarnagar, Uttar Pradesh
- Tirupati Balaji Fibers Limited, Muzaffarnagar, Uttar Pradesh
- Shakumbhari Pulp & Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Silverson Pulp & Paper Private Limited, Muzaffarnagar, Uttar Pradesh
- Parijat Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Galaxy Papers Pvt. Limited, Muzaffarnagar, Uttar Pradesh

#### **Adequacy Assessment / Performance Evaluation of ETP**

- The International Paper APPM Pvt. Limited, Rajahmundry, Andhra Pradesh
- Sandeep Papers (P) Limited, Noida, Uttar Pradesh
- Sidharth Paper (P) Limited (Unit - II), Kashipur, District Udham Singh Nagar, Uttarakhand
- Meera Paper Mills (P) Limited, Bhoga Road, Muzaffarnagar, Uttar Pradesh
- Deoria Paper Mills Limited, Deoria, Uttar Pradesh
- Nikita Papers Limited, Shamli, Uttar Pradesh
- Shree Mahavir Straw Board Mills Pvt. Limited, Mainpuri, Uttar Pradesh
- Vishwanath Paper & Boards Limited, Jaspur, Uttarakhand
- Katyayani Paper Mills Pvt Limited, Kashipur, Uttarakhand
- Bill Unit Shree Gopal, Yamunanagar, Haryana
- Shree Badri Kedar Papers Pvt. Limited, Bijnor, Uttar Pradesh

#### **Evaluation of Zero Liquid Discharge (ZLD) Status**

- Gangotri Paper Mills Pvt. Ltd., Naran Kanj, Distt. Haridwar, Uttarakhand
- Aristocrat Papers Pvt Ltd, Muzaffarnagar, Uttar Pradesh

#### **Feasibility of Lime Kiln to Incinerate the Lime Sludge Generated**

- Nani Paper Industries Ltd., Kashipur, Uttarakhand

#### **Verification report of Action Plan for Charter Compliance**

- Bill (Unit Shree Gopal), Yamunanagar, Haryana

### **Fresh Water Consumption Water Audit**

- Dev Priya Industries Private Limited, ( Unit I ) Meerut, Uttar Pradesh
- Dev Priya Industries Private Limited, ( Unit II ) Meerut, Uttar Pradesh
- Gangotri Paper Mills Ltd, Narsun Kalam , Uttarakhand

### **ETP Performance Evaluation**

- Hilt ( Unit Shree Gopal), Yamunanagar, Haryana

### **Audit Assessment of Hazardous Waste**

- Century Pulp and Paper Ltd, Lalkua , Uttarakhand
- Chandpur Industries Ltd, Noorpur , Uttar Pradesh
- Khatima Fibers Ltd , Khatima , Uttarakhand

### **Adequacy Assessment of Chemical Recovery**

- Shree Bhageshwari Paper Mill Limited, Muzaffarnagar, Uttar Pradesh
- Bindal Papers Limited, Muzaffarnagar, Uttar Pradesh
- Bindal Duplex Limited, Muzaffarnagar, Uttar Pradesh
- Garg Duplex and Paper Mill Private Limited, Muzaffarnagar, Uttar Pradesh
- KR Pulp and Papers Limited., Shubjahanpur, Uttar Pradesh
- Mohit Paper Mills Limited, Bijnor, Uttar Pradesh
- Nami Papers Limited, Kashipur, Uttarakhand
- Shree Sidhball Paper Mills Limited, Muzaffarnagar, Uttar Pradesh
- Silverton Pulp and Papers Private Limited., Muzaffarnagar, Uttar Pradesh
- Sidharth Papers Limited, Kashipur, Uttarakhand
- Siddheshwari Paper Udyog Limited, Kashipur, Uttarakhand
- Tehri Pulp & Paper Limited, Muzaffarnagar, Uttar Pradesh
- Vishwakarma Paper & Boards Limited, Kashipur, Uttarakhand
- Yash Papers Limited, Patnahat, Uttar Pradesh

### **Improved Chemical Recovery and Energy Efficiency through Liquor Heat Treatment in combination of Desilication**

- Satta Industries Limited, Muktsar, Punjab

## VISIT TO PULP & PAPER MILLS AND OTHER ORGANISATIONS

During 2015-16 CPPRI scientists visited various pulp and paper mills to provide technical and consultancy services and well as in connection with various R&D and Cess projects as well sponsored projects activities. The scientists also visited various academic and scientific institutes and organizations, regulatory bodies, ministries etc in connection with various collaborative activities, meetings and discussions etc. The summary of visits undertaken by CPPRI scientists during 2015- 16 is as under :

### Raw Material Collection / Evaluation, Pulping and Bleaching Trials and Project Studies

- Forest Research Institute, Dehradun, Uttarakhand - Shri. Kumar Anupam
- Hindal Paper Mills Ltd., Muzaffarnagar, Uttar Pradesh - Dr. Prii S. Lal, Dr. Arvind Kumar Sharma, Shri Vinay Swaroop and Shri Ajay Kumar

### UNIDO Project : Development & Adoption of Appropriate Technologies for Enhancing Productivity in the Paper and Pulp Sector

- Collection of data base of pulp and paper mills of Kashiwar Cluster - Dr.M.K. Gupta and Dr.Sanjay Tyagi
- Collection of data base of pulp and paper mills in Vapi Cluster - Dr.M.K. Gupta and Shri Satya Dev Negi
- Century Pulp & Paper Limited, Lalqan, Uttarakhand - Dr. Nitin Endlay

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

- Quarterly Charter Progress Verification of over 66 Pulp & Paper Mills of Uttar Pradesh & Uttarakhand - Dr. S. Panwar, Dr.M.K. Gupta, Dr.Shivaker Mishra, Dr.Nitin Endlay, Mohd.Salim, Shri Raj Pal Singh, Shri Abhishek Tyagi & Shri Amitabh Raj
- ETP adequacy assessment - Dr. S. Panwar, Dr.M.K. Gupta, Dr.Shivaker Mishra, Dr.Nitin Endlay and Mohd.Salim
- Deoria Paper Mills Limited, Deoria, Uttar Pradesh
- Nikita Paper Limited, Shamli, Uttar Pradesh
- Rama Shyama Papers Limited, Bareilly, Uttar Pradesh
- Veit Cellulose Limited, Hapur, Uttar Pradesh
- Sachi Paper Mills Limited, Chhaprauli, Uttar Pradesh

- Kumakshi Papers (P) Limited, Gajraula, Uttar Pradesh
- Chandpur Enterprises Limited, Chandpur, Uttar Pradesh
- Coral Newsprints Limited, Gajraula, Uttar Pradesh
- Shri Nageshwar Paper Limited, Kanpur, Uttar Pradesh
- Anandeshwar Industries (P) Limited, Kanpur, Uttar Pradesh
- Genus Paper & Boards Limited, Aghwanpur, Uttar Pradesh
- Dev Priya Industries Private Limited, Meerut, Uttar Pradesh
- Sangal Papers Limited, Mauana, Uttar Pradesh
- Naini Paper Mills Limited, Kashipur, Uttarakhand
- Naini Tissues Limited, Kashipur, Uttarakhand
- Banwari Paper Mills Limited, Kashipur, Uttarakhand
- Gomya Straw Board Mills Pvt. Limited, Kashipur, Uttarakhand
- Katyayini Paper Mills Pvt. Limited, Jaspur, Uttarakhand
- Maruti Papers Limited, Village-Sikka, Uttar Pradesh

#### **Evaluation of Zero Liquid Discharge Feasibility**

- Gangotri Paper Mills Private Limited, Narsan Kalan, Uttarakhand – Dr. Shivaker Mishra & Dr. Nitin Endlay
- Aristocraft Papers Private Limited, Muzaffarnagar, Uttar Pradesh – Dr. S. Panwar, Dr. Shivaker Mishra, Dr. Nitin Endlay and Mohd. Salim

#### **Environmental Monitoring / Technical Services**

- Century Pulp and Paper Limited, Lalkuan, Uttarakhand - Dr. Nitin Endlay, Shri R. P. Singh, Sh. Mohd. Salim and Shri Amitabh Raj
- Bili (Unit Shree Gopal) Yamuna Nagar, Haryana – Dr. Nitin Endlay & Shri Mohd Salim
- Shreyans Industries Limited, Ahmedgarh, Punjab - Shri Raj Pal Singh and Shri Mohd. Farid
- International Papers Limited, Rajahmundry, Andhra Pradesh Dr M.K. gupta, Shri Raj Pal Singh and Shri Mohd. Salim
- Star Paper Mills Limited, Saharanpur, Uttar Pradesh - Shri Raj Pal Singh, Shri M.S. Bhandari and Shri Mohd Salim
- Sandeep Paper Mills Limited, Noida, Uttar Pradesh - Dr. Nitin Endlay and Shri Mohd. Salim

#### **Hazardous Waste Audit**

- Century Pulp and Paper Limited, Lalkuan, Uttarakhand - Dr. Nitin Endlay and Shri Mohd.

Salim

#### **Water Audit / Calibration of Flow Meter**

- The West Coast Paper Mills Limited, Dandeli, Karnataka - Dr. S. Mishra and Shri Mohd. Salim
- Deepriya Industries Limited Unit-I, Meerut, Uttar Pradesh - Dr. Nitin Endray and Shri Mohd. Salim
- Deepriya Industries Limited Unit-II, Meerut, Uttar Pradesh - Dr. Nitin Endray and Shri Mohd. Salim
- ITC Tribeni, West Bengal - Dr M.K. Gupta and Shri Mohd. Salim

#### **Process Evaluation**

- Bhagwati Kripa Paper Mills Limited, Jaipur, Rajasthan - Shri Satya Dev Negi

#### **Energy Audit / Assistance to BEE / Collection of Energy Consumption Data**

- Bureau of Energy Efficiency, New Delhi - Dr. B. P. Thapliyal & Dr. Sanjay Tyagi

#### **Chemical Recovery - Troubleshooting / Adequacy assessment Consultancy / Mill trials / Project Studies**

- Trident Papers Ltd., Barnala Punjab - Dr. R.K. Jain, Dr. A.K. Dixit, Shri Kumar Anupam, Shri Pankaj Goley and Dr. Tarun,
- Godawari Biorefineries Ltd., Karnataka - Dr. R.K. Jain and Dr. A.K. Dixit
- Chemical Recovery Adequacy Assessment of over 16 agro based pulp and paper mills of Uttarakhand & Uttar Pradesh - Dr. R. K. Jain and Dr. A. K. Dixit

#### **Scientific / Academic Institutes & Other Organisations**

- UNIDO - ICSD, New Delhi - Dr. R. K. Jain, Dr. S. Parwar & Dr. B. P. Thapliyal
- Central Pollution Control Board, Delhi - Dr. S. Parwar and Dr. Nitin Endray
- Kururappu National Handmade Paper Institute, Jaipur, Rajasthan - Vipin Gupta
- Science & Technology Council, Chandigarh, Punjab - Dr. R. K. Jain and Dr. A. K. Dixit

- Printing & Stationary Department, Uttar Pradesh Government, Lucknow, Uttar Pradesh – Dr. Sanjay Tyagi

#### **Collection of Newsprint Samples**

- Katygiri Paper Mills Private Limited, Kashipur, Uttarakhand - Dr. Sanjay Tyagi and Pankaj Goley
- Sripaithi Paper & Boards Ltd, Sivukani, Tamilnadu – Shri Satya Dev Negi and Shri N.K. Nair

#### **Joint Inspections under Hon'ble National Green Tribunal (NGT) Order**

- Khaterna Fibers Limited, Khatema, Uttarakhand – Dr.Nitin Endlay, Dr Shivaker Mishra, Dr Sanjay Tyagi and Shri S.D. Negi
- Chadha Paper Mill, Bilaspur, Uttar Pradesh - Dr.Nitin Endlay and Shri S.D. Negi

#### **Industrial Visits of M.Sc (Cellulose & Paper Technology) Students**

- Hindal Papers Limited, Muzaffarnagar, Uttar Pradesh - Dr. S. Panwar, Dr. Nitin Endlay and Shri Amitabh Raj Tripathi
- Siddeshwari Industries (P) Limited, Muzaffarnagar, Uttar Pradesh - Dr. S. Panwar, Dr. Nitin Endlay and Shri Amitabh Raj Tripathi

#### **Others**

#### **Inspection of Paper Mills using Wet Strength Paper under National Green Tribunal Order**

- Khaterna Fibres Ltd, Khatema, Uttarakhand – Dr.Nitin Endlay & Shri Satya Dev Negi
- Chadha Paper Mill, Bilaspur, Uttar Pradesh – Dr.Nitin Endlay & Shri Satya Dev Negi

#### **Visits for Verification of Plant and Machinery for subsidy claim under Central Capital Investment Subsidy (CCIS) Scheme 2007 as a part of North East Industrial Promotion Policy (NEIPP) 2007.**

- Hevtech Papers Limited, Kamalpur & Dalmu, Dist. Kamrup, Assam - Dr. R.K. Jain & Dr. M.K. Gupta
- Heihmaputra Papers Ltd., Tezpur, Dist. Sonitpur, Assam - Dr. R.K. Jain & Dr. M.K. Gupta for

## VISITORS TO CPPRI

During 2015-16 CPPRI was visited by various international / national technocrats, scientists, academicians, officials from various pulp, paper and allied industries for consultation, technical services and training. Some of them are mentioned as under:

### International

- Dr. Øyvind Eriksen, Laboratory Manager, Paper and Fibre Research Institute, Norway
- Shri Jani Marmikko, University of Helsinki, Finland
- Shri Miikka Lievonen, Hägglom and Partners Limited, Finland
- Shri Andre. M. Verhoeven, Area Manager, KTT Netherland
- Dr. Rekha Bharti, Application & Business Development Manager, Solenis Singapore Pte. Ltd, Singapore

### National

- Shri Pawan Kumar, District Magistrate, Saharanpur, Uttar Pradesh
- Dr. Hamdani Adhikari, Polymer Division, Materials Science Centre, IIT Kharagpur, West Bengal
- Dr. Y.K. Negi, Dr. A.K. Ray, Dr. Pradip K. Maji, Dr Vivek Kumar IIT Roorkee (Saharanpur Campus), Saharanpur
- Shri Vikas Kumar, UNIDO- IC- ISID, New Delhi
- Shri M.K. Gupta, Dr Kashikar & Shri H.K. Madan, Hifi Group
- Dr. N.K. Bhardwaj & Dr. Sanil Kumar, ACHRD, Yamunanagar
- Shri Vikash Ranjan, Senior Technical Expert – GIZ, New Delhi
- Shri Soumya Gantaik, Head-Energy Efficiency, ICF International, New Delhi
- Shri Suresh Kt, Cochin Minerals & Rutile Limited, Kerala
- Shri Naresh Kumar, Century Pulp & Paper, Lalkuan, Uttarakhand
- Dr. Mohan Lal, Khalema Fibers Ltd., Khatima, Uttarakhand
- Shri D.K. Singhal, Chandpur Enterprises Ltd., Chandpur, Uttar Pradesh
- Shri Laxmi Prasad & Shri Piyush Shah, International Paper, New Delhi



- Shri A.K.Atri & Shri A.K. Rai, Orient Paper Mills Ltd., Amliai, Madhya Pradesh
- Shri G.P. Veerbhadradaswamy & Shri R.Nagaraj, Mysore Paper Mills Ltd., Bhadravati, Karnataka
- Shri Himanshu Marwal, Sidharth Papers Ltd., Kuchipuri, Uttarakhand
- Shri Anubhav Gupta, Modinagar Paper Mills Ltd., Modinagar, Uttar Pradesh
- Shri Reyaz Ahmad Ishaq, Doon Group of colleges, Dehradun, Uttarakhand
- Prof. Rekha Chaudhary & Dr. Veena Gupta, National Bureau of Plant Genetic Resources, New Delhi

## **M.Sc. (Cellulose & Paper Technology)**

(A Joint Collaborative Course of FRI (Deemed University), Dehradun & CPPRI, Saharanpur.)

### **Activities**

The final year classes of the students of the fourth batch (2014 -16) of M.Sc. (Cellulose and Paper Technology) were conducted at CPPRI. Both theoretical and practical knowledge on various aspects of pulp and paper making i.e. raw material handling and preservation, pulping and bleaching, stock preparation and paper making, chemical recovery, environmental management and biotechnological applications were imparted to the students by CPPRI scientists and guest faculty.

The students of M.Sc (Cellulose & Paper Technology) went on a industrial tour along with Dr. S.Purwar & Dr.Nitin Endlay to Star Paper Mills Ltd., Saharanpur, Bindal Papers Limited, Muzaffarnagar and Siddeshwari Industries (P) Ltd, Muzaffarnagar to get conversant about the technologies and process adopted by wood based, agro based and waste paper based pulp and paper mills for paper making as well as effluent treatment systems adopted by the mill.

The students also undertook a two month compulsory industrial training at various pulp & paper mills, companies and research institutes as a part of curriculum.

The students attended the training programme on Cess Training Programme on Energy & Environmental Management in Pulp & Paper Industry.

The students observed Teachers Day on September 5, 2015 and organised a cultural programme in honour of CPPRI faculty.

The students also participated in the debate and poster competition organised to commemorate Vigilance Awareness Week 2015.

### **List of Students**

Abhishek Rawat, Abhishek Verma, Arul Kumar Maurya, Bhavnika Chhabra, Deshpal Singh, Kewal Kumar Sinha, Pankaj Kumar Pahal, Priyanka Pandey, Sanchit Maharia, Sandhya Devi SM, Saumabh Joshi, Vikas Kumar



Glimpses of Vigilance Awareness Posters Prepared by M.Sc. (CPT) Students



*Felicitation of Winners of Poster & Debate Competition on Vigilance Awareness Day*



Financial Report  
2015-2016







**SANJAY MISRA & CO.**  
Chartered Accountants

116, New Avaz Vikas Colony  
Delhi Road, Saharanpur  
Phone-(0132) 2760642

## **CENTRAL PULP & PAPER RESEARCH INSTITUTE**

An autonomous organization registered under societies Act under the administrative control of the Ministry of Commerce & Industry (Govt. of India)

POST BOX - 174, PAPER MILL ROAD, HIMMAT NAGAR, SAHARANPUR (U.P.)

### **AUDITOR'S REPORT TO THE MEMBERS OF THE CENTRAL PULP AND PAPER RESEARCH INSTITUTE, SAHARANPUR (U.P.)**

We have audited the attached Balance Sheet of CENTRAL PULP AND PAPER RESEARCH INSTITUTE, SAHARANPUR (U.P.) as on 31.3.2016 and Income and Expenditure account & Receipt & Payment Account for the year ended on that date, which is in agreement with the books of accounts maintained by the Institute. These financial statements are the responsibility of the auditee's management. Our responsibility is to express an opinion on these financial statements based on our Audit.

We conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purpose of audit. In our opinion proper books of accounts have been kept/maintained by the Institute.

In our opinion and to the best of our information and according to the explanation given to us, the said account reads with notes thereon, give a true and fair view in conformity with the accounting principles generally accepted in India.

- i) In case of Balance Sheet, of the state of affairs of the Institute as at 31.03.2016, and
- ii) In the case of Income & Expenditure Account of the deficit for the year ended on 31.03.2016.

**For SANJAY MISRA & CO.**  
Chartered Accountants

Date: 7.9.16  
Place: Saharanpur.

(SANJAY MISRA)  
F.C.A., ISA (DISA)



**SANJAY MISRA & CO.**  
Chartered Accountants

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#### **BALANCE SHEET AS AT 31.3.2016**

Amount (Rs.)

<b>PARTICULARS</b>	<b>Schedule</b>	<b>Current Year 2015-16</b>	<b>Previous year 2014-15</b>
<b>CAPITAL FUND AND LIABILITIES</b>			
CAPITAL FUND	1	120950688.74	123648944.40
UN-UTILISED SP. PROJECT& CONSULTANCY	2	14148.51	14148.51
UNUTILISED GRANTS	3	25069753.64	24958418.50
CURRENT LIABILITIES AND PROVISIONS	4	77370734.90	76618559.15
<b>TOTAL</b>		<b>223405325.79</b>	<b>225236070.56</b>
<b>ASSETS</b>			
FIXED ASSETS	5	101779252.97	102437717.29
CURRENT ASSETS, LOANS, ADVANCES ETC.	6	121626072.82	122800353.27
<b>TOTAL</b>		<b>223405325.79</b>	<b>225236070.56</b>

The Schedules referred above form an integral part of the Balance Sheet.

As per our separate report of even date.  
**FOR SANJAY MISRA & CO.**  
CHARTERED ACCOUNTANTS

**FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE**

(SANJAY MISRA)  
F.C.A., I.S.A.(DISA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16





**SANJAY MISRA & CO.**  
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#### INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED ON 31.3.2016

Amount (Rs.)

PARTICULARS	Schedule	Current Year 2015-16	Previous year 2014-15
<b>A: INCOME</b>			
Income from Institutional & Consultancy fee	7	22687949.00	18436865.00
Grants from Govt. of India	8	76370109.00	99353094.00
Fees/Subscription	9	534973.00	449000.00
Interest earned	10	5159446.00	3650271.00
Other income	11	743811.00	1041389.92
<b>TOTAL (A)</b>		<b>105496288.00</b>	<b>122930619.92</b>
<b>B: EXPENDITURE</b>			
Establishment expenses	12	77595687.60	84525073.00
Administrative Expenses etc.	13	26930077.84	23362474.16
Exp. by IIP on Bagas Pith Project		0.00	2974200.35
Exp. by DBT Delhi		0.00	1229550.00
Depreciation for current year	5	13887134.08	14886433.59
<b>TOTAL (B)</b>		<b>118412899.52</b>	<b>126977731.10</b>
Excess of Expenditure over Income (B-A)		12916611.52	4047111.18
Excess of Income over Expenditure(A-B)		0.00	0.00

The Schedules referred above form an integral part of the Income and Expenditure Account.

As per our separate report of even date,  
**FOR SANJAY MISRA & CO.**  
CHARTERED ACCOUNTANTS

**FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE**

(SANJAY MISRA)  
FCA, ISA(DISA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16





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SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16  
**SCHEDULE I - CAPITAL FUND**

PARTICULARS	Current Year 2015-16		Previous year 2014-15	
	<b>CAPITAL FUND</b>			
Balance as at the beginning of the year	123648944.40		118602506.58	
<b>Add:-</b>				
1. Grants towards Capital Fund	9112789.00		7003546.00	
2. Cost project(Capital purpose)	1105866.86		2090003.00	
	133867300.26		127696055.58	
<b>Less:-</b>				
Balance of net expenditure transferred from the income & expenditure account	12916611.52	120950688.74	4047111.18	123648944.40
<b>BALANCE AS AT THE YEAR - END</b>		<b>120950688.74</b>		<b>123648944.40</b>

As per our separate report of even date,  
FOR SANJAY MISRA & CO.  
CHARTERED ACCOUNTANTS

FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE

(SANJAY MISRA)  
F.C.A., ISA(DISA)

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SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16



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SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16

**SCHEDULE - 2- DETAILS OF UN-UTILIZED AMOUNT  
SPONSORED PROJECT/ CONSULTANCY**

Sl No.	PARTICULARS	Current Year 2015-16	Previous year 2014-15
		Amount	Amount
1.	CPCB	13024.26	13024.26
2.	DBT-Technological improvment of Process	1124.25	1124.25
		<b>14148.51</b>	<b>14148.51</b>

As per our separate report of even date,  
FOR SANJAY MISRA & CO.  
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FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE

(SANJAY MISRA)  
FCA, ISA(DISA)

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SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16





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POST BOX - 174, PAPER MILL ROAD, HIMMAT NAGAR, SAHARANPUR (U.P.)

SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16  
**SCHEDULE - 4-CURRENT LIABILITIES AND PROVISIONS**

S.No.	PARTICULARS	CURRENT YEAR 2015-16		PREVIOUS YEAR 2014-15	
<b>A.</b>	<b>CURRENT LIABILITIES AND PROVISIONS</b>				
	<b>CURRENT LIABILITIES:</b>				
	Other Liabilities				
1.	Retention Money received	32792.00		32792.00	
2.	Security Received from Contractor	103624.00		103624.00	
3.	Unpaid money received	11300.00		11300.00	
4.	Advance received for services	214955.00		214955.00	
5.	Security received from students	37500.00		44000.00	
6.	Security Received from Staff	20000.00		20000.00	
			522676.00		522676.00
	<b>TOTAL (A)</b>		<b>522676.00</b>		<b>522676.00</b>
<b>B.</b>	<b>PROVISIONS:</b>				
1.	Expenses payable	53547.75		51142.00	
2.	Amount Payable (others)	18284.15		14288.15	
3.	Provision gratuity & encumbrance of leave	7013226.00		7059836.00	
4.	Accrue fee payable	28730.00		19200.00	
5.	Performance Bank Guarantee	16579.00		5312.00	
6.	Fellow Ship payable	10000.00		10000.00	
7.	Provision for CPCE	37300.00		13500.00	
8.	Unad Fellow Ship payable	0.00	7684824.96	267300.00	7684824.96
	<b>TOTAL (B)</b>		<b>7884896.96</b>		<b>7685362.15</b>
	<b>TOTAL (A+B)</b>		<b>7737074.96</b>		<b>76518559.15</b>

As per our separate report of even date  
FOR SANJAY MISRA & CO.  
CHARTERED ACCOUNTANTS

FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE

(SANJAY MISRA)  
C.A., (S.A.) (ISA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16

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**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16  
SCHEDULES 5 - FIXED ASSETS**

S. No.	PARTICULARS	GROSS VALUE		NET VALUE		COST AT THE YEAR END	MARK UP OR DISCOUNT	DEPRECIATION	NET BLOCK
		Cost	Accumulated Depreciation	Cost	Accumulated Depreciation				
1	Land	1000000	-	1000000	-	1000000	0%	1000000	1000000
2	Buildings	1000000	-	1000000	-	1000000	0%	1000000	1000000
3	Plant & Machinery	1000000	-	1000000	-	1000000	0%	1000000	1000000
4	Investment	1000000	-	1000000	-	1000000	0%	1000000	1000000
5	Stocks	1000000	-	1000000	-	1000000	0%	1000000	1000000
6	Debt & Equity	1000000	-	1000000	-	1000000	0%	1000000	1000000
7	Prepaid Expenses	1000000	-	1000000	-	1000000	0%	1000000	1000000
8	Other Assets	1000000	-	1000000	-	1000000	0%	1000000	1000000
9	Provisions	-	1000000	-	1000000	-	0%	-	-
10	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
11	Reserves	-	1000000	-	1000000	-	0%	-	-
12	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
13	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
14	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
15	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
16	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
17	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
18	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
19	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
20	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
21	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
22	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
23	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
24	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
25	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
26	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
27	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
28	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
29	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
30	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
31	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
32	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
33	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
34	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
35	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
36	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
37	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
38	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
39	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
40	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
41	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
42	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
43	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
44	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
45	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
46	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
47	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
48	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
49	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
50	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
51	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
52	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
53	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
54	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
55	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
56	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
57	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
58	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
59	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
60	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
61	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
62	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
63	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
64	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
65	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
66	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
67	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
68	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
69	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
70	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
71	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
72	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
73	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
74	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
75	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
76	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
77	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
78	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
79	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
80	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
81	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
82	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
83	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
84	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
85	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
86	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
87	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
88	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
89	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
90	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
91	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
92	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
93	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
94	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
95	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
96	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
97	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
98	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
99	Other Liabilities	-	1000000	-	1000000	-	0%	-	-
100	Other Liabilities	-	1000000	-	1000000	-	0%	-	-

As per our separate report of even date.  
**FOR SANJAY MISRA & CO.**  
CHARTERED ACCOUNTANTS

(SANJAY MISRA)  
F.C.A., I.S.A.(USA)

Place: Saharanpur  
Date: 7.9.16

**FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE**

**DIRECTOR**

**SECTION OFFICER (P&A)**





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POST BOX - 174, PAPER MILL ROAD, HIMMAT NAGAR, SAHARANPUR (U.P.)

**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16  
SCHEDULE - 6 - CURRENT ASSETS, LIANS, ADVANCES ETC.**

Sl.No.	PARTICULARS	FINANCIAL YEAR 2015-16		FINANCIAL YEAR 2014-15	
		AS AT 31.3.16	AS AT 31.3.15	AS AT 31.3.14	AS AT 31.3.13
1	<b>A - CURRENT ASSETS</b>				
2	1. Cash	100000.00	100000.00	100000.00	100000.00
3	2. Bank & Saving	100000.00	100000.00	100000.00	100000.00
4	3. Debtors & Misc. Other	100000.00	100000.00	100000.00	100000.00
5	4. Prepaid Expenses (with Cash/Debit Card)	100000.00	100000.00	100000.00	100000.00
6	5. Trade Receivables (with Cash/Debit Card)	100000.00	100000.00	100000.00	100000.00
7	6. Other Receivables	100000.00	100000.00	100000.00	100000.00
8	7. Government Securities	100000.00	100000.00	100000.00	100000.00
9	8. Advances & Loans	100000.00	100000.00	100000.00	100000.00
10	9. Other Current Assets	100000.00	100000.00	100000.00	100000.00
11	<b>B - CURRENT LIABILITIES</b>				
12	1. Creditors	100000.00	100000.00	100000.00	100000.00
13	2. Other Current Liabilities	100000.00	100000.00	100000.00	100000.00
14	<b>C - CURRENT LIANS</b>				
15	1. Current Lians	100000.00	100000.00	100000.00	100000.00
16	2. Other Current Lians	100000.00	100000.00	100000.00	100000.00
17	<b>D - CURRENT ADVANCES</b>				
18	1. Advances	100000.00	100000.00	100000.00	100000.00
19	2. Other Current Advances	100000.00	100000.00	100000.00	100000.00
20	<b>E - CURRENT LIANS &amp; ADVANCES</b>				
21	1. Current Lians & Advances	100000.00	100000.00	100000.00	100000.00
22	2. Other Current Lians & Advances	100000.00	100000.00	100000.00	100000.00
23	<b>F - CURRENT ASSETS, LIANS, ADVANCES ETC.</b>				
24	1. Current Assets, Lians, Advances Etc.	1000000.00	1000000.00	1000000.00	1000000.00
25	2. Other Current Assets, Lians, Advances Etc.	1000000.00	1000000.00	1000000.00	1000000.00
26	<b>G - TOTAL</b>	2000000.00	2000000.00	2000000.00	2000000.00

As per our separate report of each date.  
**FOR SANJAY MISRA & CO.**  
CHARTERED ACCOUNTANTS

**FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE**

(SANJAY MISRA)  
FCA, ISMISA

DIRECTOR

SECTION OFFICER (P&A)

Place: Saharanpur  
Date: 7.5.16







**SANJAY MISRA & CO.**  
Chartered Accountants

116, New Arun Vikas Colony  
Delhi Road, Saharanpur  
Phone-(0132) 2760642

### **CENTRAL PULP & PAPER RESEARCH INSTITUTE**

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SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16

#### **SCHEDULE - 7-INCOME FROM INSTITUTIONAL AND CONSULTANCY FEE**

S.No.	PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
		2015-16	2014-15
1	Testing fee	18611529.00	13536116.00
2	Consultancy fee	3662920.00	4177249.00
3	Laboratory Fee	10000.00	30000.00
4	Library Fee	4000.00	12000.00
5	M.Sc. Course Fee	399500.00	681500.00
	<b>TOTAL</b>	<b>22667949.00</b>	<b>18436865.00</b>

As per our separate report of even date.  
FOR SANJAY MISRA & CO.  
CHARTERED ACCOUNTANTS

FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE

(SANJAY MISRA)  
FCA, ISA(DISA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16



**SANJAY MISRA & CO.**  
Chartered Accountants

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#### SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16 SCHEDULE - 8 - GOVERNMENT GRANT RECEIVED

S.No.	PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
		2015-16	2014-15
1	Government of India - Plan	16213048.00	18402718.00
2(a)	Government of India through Development Council for Pulp, Paper & Allied Industries-Non Plan	52500000.00	80400000.00
(b)	Core Secretariats for Development Council PPSA Industry	1300000.00	0.00
3	Government of India through Development Council for Pulp, Paper & Allied Industries for Cess Projects		
(a)	Continuous Education Training of Tech Personal	2909547.00	325415.00
(b)	Development of Protocols	667407.00	0.00
(c)	Improvement in Selectivity of Oxygen Bleaching	242584.00	81871.00
(d)	An Integrated approach for utilization of Biogas Pith	283200.00	110977.00
(e)	Statistical Data collection Cell for Indian Pulp & Paper Industry	2159714.00	23323.00
(f)	Increase in Brightness	94609.00	8850.00
	<b>TOTAL</b>	<b>76370109.00</b>	<b>99353094.00</b>

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FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE

(SANJAY MISRA)  
F.C.A., ICAI (MCA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16



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Chartered Accountants

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SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16  
SCHEDULE 9 - FEES/SUBSCRIPTIONS

S.No.	PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
		2015-16	2014-15
1	Membership fees	85500.00	249000.00
2	Training fees/Registration fees	449473.00	200000.00
	<b>TOTAL</b>	<b>534973.00</b>	<b>449000.00</b>

As per our separate report of even date.  
FOR SANJAY MISRA & CO.  
CHARTERED ACCOUNTANTS

FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE

(SANJAY MISRA)  
F.C.A., I.S.A.(DISA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16



**SANJAY MISRA & CO.**  
Chartered Accountants

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**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16**  
**SCHEDULE - 10 - INTEREST EARNED.**

Sl. No.	PARTICULARS	CURRENT YEAR 2015-16	PREVIOUS YEAR 2014-15
	<b><u>INTEREST EARNED</u></b>		
1	On Term Deposite with schedule Bank	4911759.00	3357723.00
2	On Loan to staff	247687.00	292548.00
	<b>TOTAL</b>	<b>5159446.00</b>	<b>3650271.00</b>

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FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE

(SANJAY MISRA)  
F.C.A., ISA(DISA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
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#### SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16 SCHEDULE 11 - OTHER INCOME.

SLNo.	PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
		2015-16	2014-15
	<b>OTHER INCOME</b>		
1	Hostel rent	162175.00	278525.00
2	Lease rent	25000.00	50000.00
3	Licence fee	368321.00	647993.00
4	Miscellaneous income	115223.00	58000.92
5	Sale of Publication	73092.00	6791.00
	<b>TOTAL</b>	<b>743811.00</b>	<b>1041389.92</b>

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F.C.A., I.S.A.(DISA)

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SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16  
SCHEDULE - 12 - ESTABLISHMENT EXPENSES.

SLNo.	PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
		2015-16	2014-15
	<b>ESTABLISHMENT EXPENSES</b>		
1	Salary & Allowances	60592497.60	64885737.00
2	CPF Contribution	5909727.00	6285131.00
3	Gratuity	4291801.00	5391731.00
4	Encashment of leave	4322093.00	5377193.00
5	Reimbursement of medical expenses	2479589.00	2585281.00
	<b>TOTAL</b>	<b>77595687.60</b>	<b>84525073.00</b>

As per our separate report of even date.  
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**CHARTERED ACCOUNTANTS**

**FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE**

(SANJAY MISRA)  
F.C.A., ISA(DISA)

DIRECTOR

SECTION OFFICER (F&A)

Place: Saharanpur  
Date: 7.9.16



**SANJAY MISRA & CO.**  
Chartered Accountants

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**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.16**  
**SCHEDULE - 13 - ADMINISTRATIVE EXPENSES ETC.**

S.No	PARTICULARS	CURRENT YEAR 2015-16	PREVIOUS YEAR 2014-15
	<b>OTHER ADMINISTRATIVE EXPENSES ETC.</b>		
1	To Lab. & Plant Maintenance	4266243.56	2165541.50
2	To Cartage & Freight	66804.00	8702.60
3	To Electricity and water	7502258.00	6319159.70
4	To Insurance	1140.00	1226.00
5	To Repair & Maintenance of Assets	5671848.72	509954.60
6	To Rent & Taxes	736000.00	1149776.00
7	To Postage & Telephone & Communication	592800.00	671870.00
8	To Printing & Stationery	1256513.81	1100794.55
9	To Travelling & Conveyance Exp.	1387080.00	1344570.00
10	To Exp.on Seminar & Workshop	15870.00	117906.00
11	To Membership subscription	10000.00	0.00
12	To Audit fees	28750.00	19000.00
13	To Hospitality Expenses	184183.00	115844.00
14	To Legal & Professional Exp.	106840.00	119902.00
15	To News Paper	52190.00	25451.50
16	To Training Expenses	858032.00	0.00
17	To Watch & Ward	2994485.00	3161448.00
18	To Bank charges	35296.40	42558.00
19	To Advertisement	273258.75	359422.41
20	To Interest on Service Tax	66778.00	0.00
21	To Testing Fee Paid	44200.00	0.00
22	To Staff Car Maint.	419317.00	471768.00
23	Interest on TDS	5273.00	0.00
24	Penalty on Service Tax	8854.00	0.00
25	Interest Paid on Unutilised Grant	274338.00	0.00
	<b>TOTAL</b>	<b>26930077.84</b>	<b>23362474.16</b>

As per our separate report of even date,  
**FOR SANJAY MISRA & CO.**  
**CHARTERED ACCOUNTANTS**

**FOR CENTRAL PULP & PAPER RESEARCH INSTITUTE**

(SANJAY MISRA)  
K.C.A., ISADISA)

**DIRECTOR**

**SECTION OFFICER (F&A)**

Place: Saharanpur  
Date: 7.9.16



**SANJAY MISRA & CO.**  
Chartered Accountants

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## **CENTRAL PULP & PAPER RESEARCH INSTITUTE**

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**POST BOX - 174, PAPER MILL ROAD, HIMMAT NAGAR, SAHARANPUR (U.P.)**

### **ANNEXURE**

#### **Significant Accounting Policies & Notes on Accounts**

##### Overview:

CPPRI is an autonomous organization registered under the Societies Act under the administrative control of Ministry of Commerce & Industry (Govt. of India) vide Government of India Notification dated 7.8.1979.

##### Financial Accounts:

The financial statements are prepared on the basis of historical cost convention and the Accounting Policies used in preparation of these financial statements confirm with the Accounting Principles generally accepted in India. The Institute follows the accrual method of accounting.

#### **A. Significant Accounting Policies:**

##### **1. Revenue Recognition:**

- 1.1. Testing fee is accounted for on accrual basis.
- 1.2. Lease Rent is accounted for on accrual basis.
- 1.3. Government Grant, Consultancy fee, Institutional fee, Sponsored Project, Membership fee, Training and Registration fees are accounted for on receipt basis.

##### **2. Inventory valuation:**

The inventory comprises of stores and spares are valued at cost.

##### **3. Fixed Assets:**

Fixed Assets are stated at cost less accumulated depreciation.

##### **4. Depreciation:**

- 4.1. Depreciation is provided on written down value methods, as per the rates specified in the Income Tax Act 1961.

##### **5. Government Grants:**

Government grants received to the extent utilized for capital expenditure being added to the capital fund and to the extent utilized for revenue expenditure being treated as income in the income and



expenditure account and the un-utilized grant being carried forward. This is not as per the para no. 14 of the Accounting Standard (AS-12) relating to Accounting for Government Grants. The Institute was advised to consider the guidelines on the subject in consultation with the concerned organizations / agencies for implementation. The Institute in reply has confirmed that other similar organizations / agencies are also following the same pattern. This point was also discussed by the concerned officer in the training imparted by National Institute of Finance Management, Govt. of India during the course of training.

**6. Foreign currency transaction:**

Transactions in foreign currency are accounted at the exchange Rate prevailing on the date of transaction in Indian Currency.

**B. Notes forming part of Accounts:**

**1. Information about the activities of the Institute:**

The Institute running under the Administrative control of Ministry of Commerce & Industry, Dept. of IP&P is engaged to promote Research and other scientific work connected with pulp, paper & allied industries to establish and maintain laboratories, pilot plant, workshop and to edit, print, publish and exhibit books, papers and periodicals bearing upon the said industries. Besides that the Institute also under take Cess funded projects and Sponsored projects from Govt. of India, government institutions and other organizations also.

**2. Retirement Benefits:**

2.1 Provision for gratuity payable on death/retirement of employees, during this year is Rs. 4291801.00 and for leave encashment is Rs. 4322093.00 payable to them based on accrual basis and as per the actuarial valuation certificate of Shri Bhudev Chatterjee.

**3. Current Assets Liabilities & Advance:**

Management has stated that the current assets, loans and advances have full value on realization in the ordinary course of business.

4. Corresponding previous year figures have been re-grouped or re-arranged wherever necessary.

5. Total advances stand as on 31.3.2016 is Rs. 12043390.69 excluding advance to staff related for advance against supply of equipments etc.

6. As per Schedule No.1 of the Balance-sheet, capital fund shows that Grant of Rs.10218355.86 has been incurred as capital expenditure while as per Schedule No.5 of the Balance-sheet relating to fixed assets shows an addition of Rs.13228669.76. Regarding less capital expenditure of Rs.3010313.90, it is stated by the management that it is due to adjustment of suppliers bills and from letter of credits in the current year.



7. The management has confirmed that:
- 7.1 The provisions of all known income, expenditure and liabilities have been made.
  - 7.2 No contingent liability exist on the date of Balance-sheet.
  - 7.3 No significant event has occurred from the date of Balance-sheet and audit.

For Central Pulp & Paper Research Institute

(SECTION OFFICER) (F&A)

(DIRECTOR)

For SANJAY MISRA & CO.  
Chartered Accountants

Date: 7.9.16  
Place: Subansiri

(SANJAY MISRA)  
F.C.A., I.S.A (DISA)

## CPPRI STAFF LIST

### Director's Secretariat

<b>Director</b>	Dr. Vinlesh Bist, M.Sc., Ph.D (Director-in-charge) (up to 13.10.2015) Dr. R. K. Jain, M.Sc., Ph.D. w.e.f. 14.10.2015
<b>Private Secretary</b>	Shri A. Arunkrishna, B.Com., P.G. Diploma in Business Administration
<b>Technician</b>	Shri R. K. Kapoor Shri Sunder Lal

### Physical Chemistry, Pulping & Bleaching Division

<b>Head (Scientist-F)</b>	Dr. Vinlesh Bist, M.Sc., Ph.D.
<b>Scientist-E-1</b>	Dr. Priti Shivhare Lal, M.Sc., Ph.D.
<b>S.S.A.</b>	Dr. Arvind Kumar Sharma, M.Sc., Ph.D. and Diploma in Pulp & Paper Technology Shri Kumar Anupam, B.Tech. (Chemical Engineering)
<b>Technician</b>	Shri D. P. Naithni (Superannuated on 30/4/2015) Shri Musaddi Lal Shri N. S. Negi

### Paper Testing & Energy Management Div.

<b>Head (Scientist-E-II)</b>	Dr. H. P. Thapliyal, M.Sc., M.Tech., Ph.D., Accredited Energy Auditor
<b>Scientist E-1</b>	Dr. R. D. Godiyal, M.Sc., D.Phil.
<b>Scientist-C</b>	Dr. Sanjay Tyagi, B.E. (Mech. Engg), M.E. (Pulp & Paper), Ph.D., Accredited Energy Auditor
<b>Technical Officer-B</b>	Shri Karan Singh, Certificate Course in Pulp & Paper Technology
<b>Technician</b>	Shri Ashok Kumar Rawat

### Chemical Recovery & Bio-Technology Division

<b>Head (Scientist-F)</b>	Dr. R. K. Jain, M.Sc., Ph.D.
<b>Scientist E-1</b>	Dr. A. K. Dixit, M.Sc., Ph.D. Smt. Anuradha V. Janbale, M.Sc.
<b>Technical Officer-A</b>	Dr. Vanantia Vasile Thakur, M.Sc., M.Phil., Ph.D. (on deputation)
<b>Technician</b>	Shri Bishamber Pandey, High School (Superannuated on 31.8.2015) Shri Avtar Singh



### International Co-operation and Wet Laboratory

Head (Scientist-F)	Smt. Rita Tandon, M.Sc.
Scientist-E-II	Shri P. C. Pandey, M.Sc. (Superannuated on 31.8.2015)
Scientist-B	Shri Satya Dev Negi, M.Sc., P.G. Diploma in Pulp & Paper Technology
Technical Officer-B	Shri Pankaj Kumar Goley, B.Tech. (Electrical) Shri Gyan Pal Singh, Certificate Course in Pulp & Paper Technology

### Environmental Management Division

Head (Scientist-F)	Dr. Suresh Patwar, M.Sc., Ph.D.
Scientist E-II	Dr. M. K. Gupta, M.Sc., Ph.D.
Scientist E-I	Dr. Shivaakar Mishra, M.Sc., Ph.D. Dr. Nitin Tindlay, M.Sc., Ph.D., PGI/MPM, (PG Diploma in Industrial Pollution Management)
S.S.A.	Shri Mohd. Salim, M.Sc.
Technical Officer-B	Shri Raj Pal Singh, Intermediate, Certificate Course in Pulp & Paper Technology
Technician	Shri Magan Singh

### Technical Services & Co-ordination Cell (TSCC)

Head (Scientist-F)	Dr. R. K. Jain, M.Sc., Ph.D.
Scientist-C	Shri Alok Kumar Goel, M.Sc., Passed National Certificate Examination for Energy Managers
Technician	Shri Gopal Singh

### Library & Documentation Division

Incharge	Dr. D. P. Thapliyal, M.Sc., M.Tech., Ph.D., Accredited Energy Auditor
Library Officer-A	Smt. Sarita Sharma, M.A., M.L.Sc.
Technician	Shri N. S. Bhat Shri Bachi Singh Smt. Shrikala Thapa

### Cess Training Programme Cell

Scientist E-I & Incharge	Dr. Rajnish Tandon, M.Sc., Ph.D.
--------------------------	----------------------------------



### Engineering & Maintenance Division

Scientist E-11 & Head Technical Officer C	Dr. M. K. Gupta, M.Sc., Ph.D Shri R. S. Rawat, ITI Draughtsman (Mech.) & One year Training in Tool Designing Shri R. C. Sharma, Diploma in Mech. Engg. (Superannuated on 31.7.2015) Shri Brij Pal Singh, B.A., Diploma in Mechanical Engineering
Technical Officer B Technical Officer-A Driver	Shri N. K. Naik, Diploma Engineering (Industrial Electronic) Shri R. L. Gupta, Boiler Attendant Certificate course Shri Arvind Kumar Shri Shri Bhagwan Sharma
Technician	Shri Dushyant Kumar Shri Roop Singh, Shri O. P. Kojrala Shri Sobhan Singh Shri Nasir Ali Shri Gopal Dutt Shri Sharma Kumar

### Administration Division

Admin. Officer Assistant	Shri Anil Kumar, M.Com., ICWA (Inier) Shri Y. K. Sharma, M.A. PGLPM and Office Management Course (ITMS) Shri B. K. Negi, M.A., P.G. Dip. in Journalism, Passed National Certificate Examination in Supervision from N.P.C.
Accountant Technicians	Shri L. D. Joshi, B.A. Shri Ravinder Dutt Shri Satya Pal Singh (Superannuated on 29.2.2016)

### Finance & Accounts Division

Section Officer	Shri A. K. Saxena, M.Com Shri S. K. Chandraia, M.Com.
Personal Assistant	Shri M. P. Sharma, M.A.
Accountant Jr. Assistant	Shri O. P. Bhatta, B.Com (Hons.) Shri Ram Bax, B.Com. Shri B. B. Chetri, M.A. Shri J. S. Bhat, B.A. Shri Naresh Kumar, B.Com. Shri H. C. Pundey, M.Com.
Technicians	Shri Prem Singh.



### Store & Purchase Division

Section Officer                      Shri Roshan Lal, M.A.  
Jr. Assistant                         Shri Satya Pal Singh, B.A.

### Industrial Co-operation & Business Development New Delhi

Scientist E-1 & Officer-in-charge     Dr. Kawaljeet Singh, M.Sc. Ph.D.

## SUPERANNUATION (2015-16)



**SIRI R. C. SHARMA, Technical Officer C**  
Service Tenure : 26/07/1983 to 31/07/2015



**SIRI SATYA PAL SINGH, Technician**  
Service Tenure : 16/06/1980 to 29/02/2015



**SIRI P. C. PANDEY, Scientist E-II**  
Service Tenure : 25/01/1979 to 31/08/2015

**SIRI BISHAMBER PANDEY, Technical Officer A**  
Service Tenure : 23/07/1976 to 31/08/2015



**Published by**  
**CENTRAL PULP & PAPER RESEARCH INSTITUTE**  
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**Technical Review**

Dr. R.K. Jain  
Smt. Rita Tandon

**Compilation and Editing**

Dr. Nitin Endlay  
Dr. Sanjay Tyagi  
Shri Satya Dev Negi

**Printing Coordination**

Dr. B.P. Thapliyal  
Dr. R.D. Godiyal  
Smt. Sarita Sharma





In Pursuit of Cleaner Production, Resources Conservation and  
Quality Excellence in Pulp and Paper Industry

For further information please contact:

### Central Pulp & Paper Research Institute

#### Head Office

Director

P.O. Box No. 174, Paper Mill Road,  
Himmat Nagar, Sahasrampur - 247 001 (U.P.)

Ph.: (0532) 2714050, 2714051, 2714052

Fax: (0532) 2714052

E-mail: [director@cppri.org.in](mailto:director@cppri.org.in)

Website: [www.cppri.org.in](http://www.cppri.org.in)

#### Base Office

Office Incharge

E-10, Jangpura II,

Near Bhagal Bus Stand,

New Delhi - 110014, INDIA

Ph. (011) 45203444, 49027213

E-mail: [cppri@vsnl.com](mailto:cppri@vsnl.com)