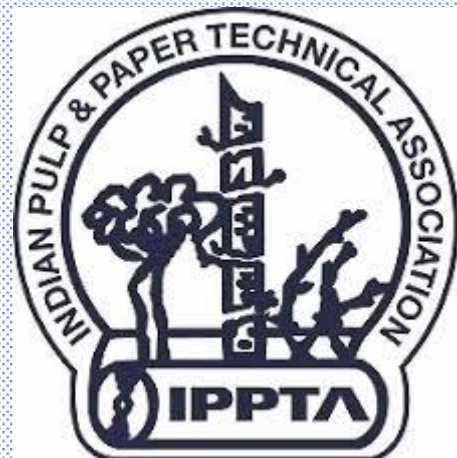


A Report on "IPPTA Knowledge Tour II" to South Korea



20.10.18 to 27.10.18



CONTENTS

- **Objective**
- **Tour Program**
- **Team**
- **Mill Visits**
- **Learnings / Take away points**
- **Highlights of the tour**
- **Suggestions / Opportunities for improvement**

Objective

TOUR OBJECTIVE

- **Opportunity to visit Mills of large scale in terms of volume and quality**
- **Exposure to globally advanced state of the art technologies**
- **Exploring the possibilities of collaboration with Korean Paper & Allied Industries**
- **Exposure to green practices, environmental practices, quality standard**
- **To see best practices in Logistics, material movement inside and outside the boundaries.**
- **To understand their standards and R & D approaches**

Tour Program

Mill Visit : Map

SEOUL
↓
ULSAN
↓
DAEGU
↓
BUJAN
↓
ULSAN
↓
CHEONGJU
↓
JEONJU
↓
SITANJIN
↓
GNU
↓
MUSAN
↓
SEOUL



Team

A blend of Experienced Professionals, Entrepreneurs, Young talents from
Large, Medium and Small Industries.

True representation of Indian Culture

Taste of India.....

TEAM



***M. K. Goyal
Secretary General IPPTA &
Convenor - Korea
Delegation***



***Pawan Agarwal
President - IPPTA***



***Anil K, ED & CEO
Shreyan Industries***

Kirit Patel, CMD
Astron Papers



R. Krishnaswamy, CMD
Sripathi Papers



Ganesh Bhaddi, VP (T)
SPB Ltd



M. N. Bhat, CGM
JK Papers, CPM



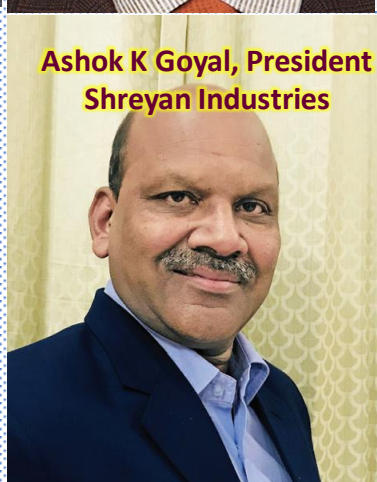
Devesh Khaitan, ED
Wires & Fabriks



N. Murasubramaniam
ITC, Kovai



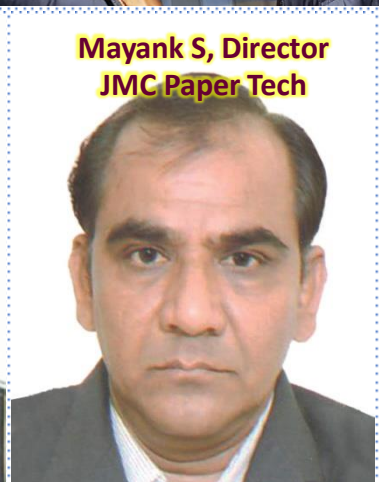
Ashok K Goyal, President
Shreyan Industries



Rajni Patel, CMD
JMC Paper Tech



Mayank S, Director
JMC Paper Tech



Dinesh G, Director
Ramji Papers



Rajiv G, Director
Cholan Papers



Rajesh K J, Director
Garg Papers



V Sundaresan, VP
SPB Ltd



Varun A, Director
Shree Gajanan



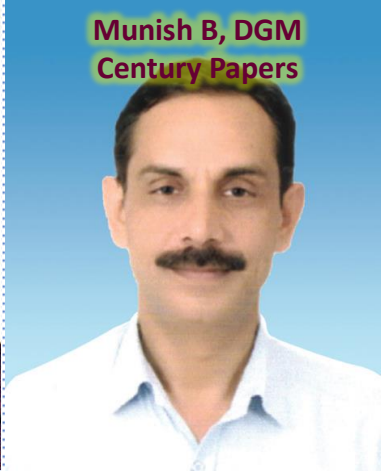
Gyan P Gupta, Director
Shree Gajanan



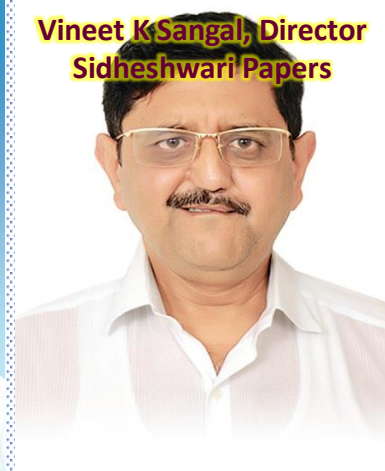
Ajay Kapoor, Director
Meenu Papers



Munish B, DGM
Century Papers



Vineet K Sangal, Director
Sidheshwari Papers



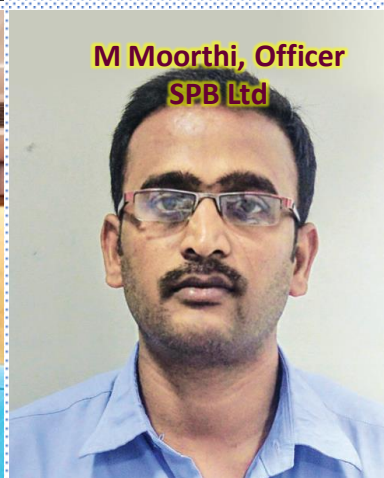
Prasoon A, Director
Silvertoan Papers



Amit Garg, Director
Silvertoan Papers



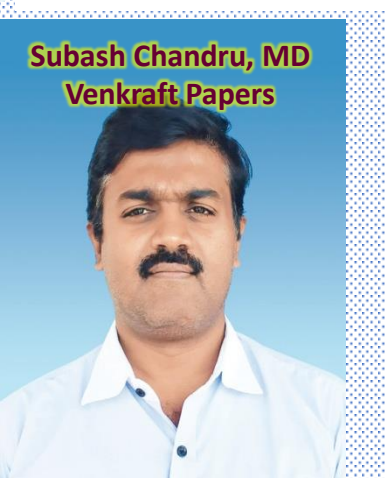
M Moorthi, Officer
SPB Ltd



Abhinav A, Director
Tirupati Balaji Fibers



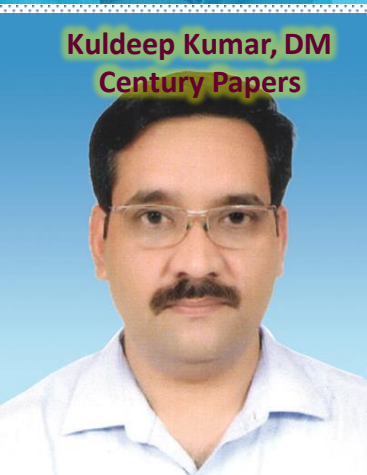
Subash Chandru, MD
Venkraft Papers



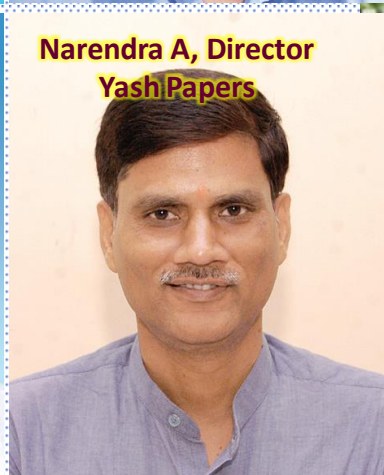
Vikas Jain, Director
Vishwakarma Papers



Kuldeep Kumar, DM
Century Papers



Narendra A, Director
Yash Papers



Mill Visits

MILLS VISITED

**6) KLENNARA
PAPER**

**5) DAEHAN
PAPER**

**4) JEANJU
PAPER**

**3) MOORIM
PAPER**

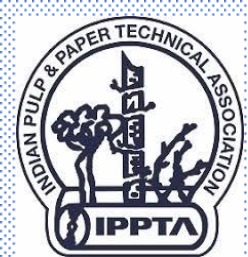
**2) HANKUK
PAPER**

**7) HANSOL
PAPER**

**8) WOLSAN
PAPER**

**1) EMTECH
CHEMICAL**





MILLS VISITED



S.No	Name of the Mill	Product	Capacity – Lacs Tons/annum
1	Emtech Factory	Defoamer , Wax emulsions, Sizing chemicals	----
2	Hankuk Paper Factory	Art Paper and Copier	6.0
3	Moorim Pulp and Paper	Writing and Printing	6.0
4	Daehan Paper Factory	Writing and Printing , Newsprint	2.5
5	Jeonju Paper Factory	Newsprint	8.2
6	Klennara Factory	Paper Board and Tissue	4.5
7	Hansol Paper Factory	Duplex Board	6.5
8	Wolsan Paper Factory	Kraft Paper	4.5

1. VISIT TO EMTECH



EMTECH CHEMICAL

**Address: 188 Dalseong2chadong1-ro,
Guji-myeon, Daegu.**

Tel 82-53-611-2233

Fax 82-53-611-7003

E-Mail aaron@emtech.co.kr

- The Company was founded in 1977 started with Business of manufacturing Rosin Size for
- Paper Industry. The Company is certified ISO 9001 and 14001.
- Turnover 12.6 Million USD
- Employees 35
- Total Sales 12.8 million dollars(2017)
- Export Sales 5.8 million dollars(2017), China, Vietnam, Thailand, Mexico etc.

Additives for Papermaking

- **Fatty alcohol type defoamer for papermaking**
- **Fatty ester type defoamer for Papermaking and Coating color**
- **Silicone defoamer**
- **Releasing agent for Dryer: Silicone emulsion type, Fatty ester & PE wax Emulsion type**
- **Water repellent for Paperboard**

Functional Materials for Cosmetic

- PMMA Bead
- Silicone resin Bead
- Surface Modified TiO₂, ZnO, Talc
- Silicone Elastomer Bead
- Porous PMMA Bead

Main Technologies

- Wax Emulsion technology
- Esterification
- Dispersion Polymerization of PMMA
- Silicone Bead Polymerization

EMTECH PLANT PHOTOGRAPHS

**Overall
Plant View**



**Guarding
System**



**Exhaust System for
Chemical Prepn. tanks**



EMTECH PLANT – BUSINESS OVERVIEW

***No.1 Manufacturer and Supplier of Defoamer for
papermaking in KOREA***

Accomplished USD 5.85 mil Overseas Sales in 2017

	2013	2014	2015	2016	2017
Revenue (000 USD)	11,700	11,600	12,000	12,300	12,600
Export (000 USD)	4,180	4,178	4,451	5,000	5,850

2. VISIT TO HANKUK PAPER



HANKUK PAPER FACTORY

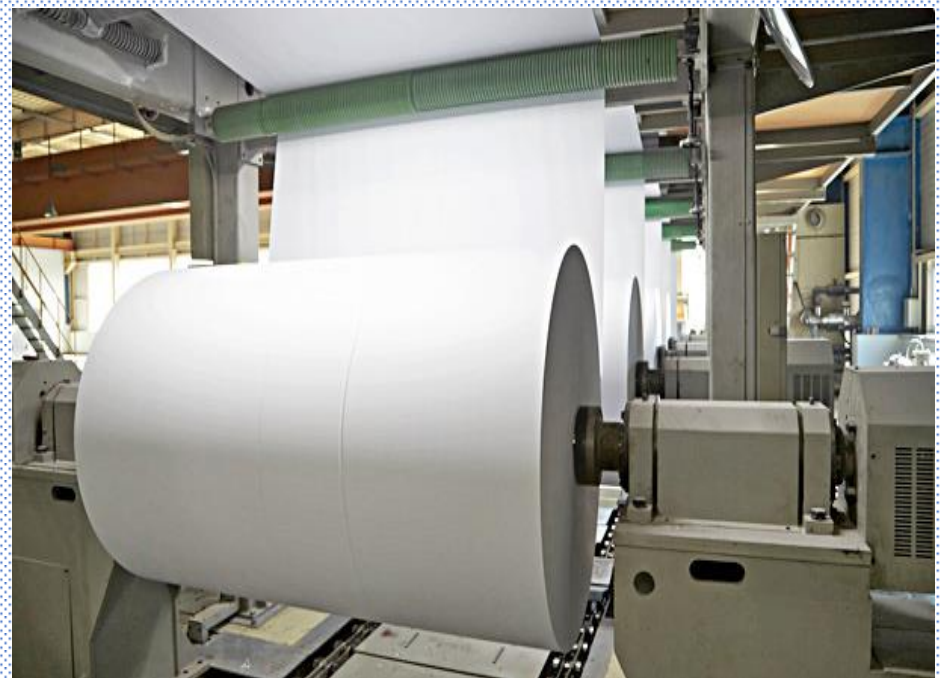
Year of Establishment	1958
Production Capacity	6 lac Tons/ Annum
No. of Paper Machines	4 Nos
No. of Coating Machines	2 Nos
No. of Employees	500
Products	Copier Paper & Art Paper

HANKUK PAPER - OVERVIEW





HANKUK PAPER – FACILITIES



HANKUK PAPER



3. VISIT TO MOORIM



VISIT TO MOORIM

Address: 3-36, ubong-gil,
Onsan-eup, Ulju-gun,
Ulsan, 45011, Korea

CEO : Suk-Man Kim

Main Number : 82-52-231-7000

Contact person : Seehan Park seehan@moorim.co.kr

- Vertically integrated system, from Plantation to Pulp and Paper Manufacturing
- Moorim has grown in both operation scale and vertical integration system, emerging as
- A globally competitive Pulp & Paper Company.

VISIT TO MOORIM

- Moorim has three papermaking companies, Moorim SP (Daegu mill), Moorim Paper (Jinju mill), and Moorim P&P (Ulsan mill).
- Especially, Moorim P&P, as the only company to own both a pulp production and papermaking mill in Korea, it marks a new milestone in the history of Korean papermaking.
- In 2011, the nation's first integrated pulp and paper mill had been completed.
- Moorim P&P has created a new paradigm in the history of Korean papermaking through its one-stop manufacturing system expanding from pulp production to paper making.

VISIT TO MOORIM

Company		Moorim P&P		Moorim Paper	Moorim SP
Date of Establishment		January 1974		December 1975	July 1956
Category		Paper	Pulp	Paper	Paper
Production in 2017 t / yr		490,536	437,150	419,705	79,443
Sales in 2017 (t/year)	Domestic	225,692	223,878	205,291	60,162
	Export	262,715	16,034	224,729	17,765
	Total	728,319		430,020	77,927
Main products		Paper -. Label & Flexible Package -. Book & Publishing (Printing & writing) Pulp - Hardwood bleached pulp		Paper -. Packaging Solution -. Graphic Board -. Label & Flexible Package -. Book & Publishing (Printing & writing) -. Specialty Graphics -. Digital Paper -. High Speed Inkjet	Paper -. Packaging Solution -. Label & Flexible Package -. Book & Publishing (Printing & writing) -. Specialty Graphics -. Rough Gloss Graphic -. Industrial & Specialty
Facilities		Paper Line Paper machine 1 ea (8.7m, the largest machine in Korea) Coater 1 ea Basis weight : 80 ~ 180 g/m ² Pulp Line Continuous Digester 1ea Recovery boiler 2 ea		Paper Line Paper machine 3 ea Coater 2 ea Basis weight : 45 ~ 350 g/m ²	Paper Line Paper machine 2 ea Coater 2 ea (1 for CCP) Basis weight : 100 ~ 400 g/m ²

VISIT TO MOORIM

All of Moorim's printing papers are the 'Neo star' brand and the specialty papers are the 'Neo' brand.

Strengths

- **Eco-friendly management & products**
- **Moorim's environmental management is implemented from the planning stage.**
- **We practice low-carbon green growth based on three major strategies addressing climate change, eco-friendly product development and management, and eco-friendly system operations.**
- **These core values are the foundations of our vision as a Global Pulp & Paper Company.**

VISIT TO MOORIM

Strengths

- **Moorim acquired Korea's first carbon footprint labeling certification in 2013.**
- **Under this eco-labeling program, a responsible institute issues a certification by assessing the amount of carbon dioxide emitted by all of its business activities.**
- **Only 0.61 tons of greenhouse gases are emitted from 1 ton of Neo Star Uncoated Paper and only 0.62 tons from 1 ton of Neo Star Matt.**
- **Moorim nevertheless strives to emit least greenhouse gases even further.**
- **Eco-friendly product certificates**

VISIT TO MOORIM

Certificates	Products
<p>FSC CoC Certification (Forest Stewardship Council)</p> <p>Moorim Paper, Moorim SP, Moorim P&P had all acquired FSC CoC (The Forest Stewardship Council Chain of Custody) certifications and Moorim P&P received FSC CW (certified wood material; controlled wood). As a result, we are equipped with the system to produce more environment friendly products.</p> <p>·FSC C011933 : Moorim Paper, ·FSC C015965 : Moorim SP, ·FSC C018671 : Moorim P&P ·FSC C018374 : Moorim USA, ·FSC C006970 : Moorim UK</p>	<p>All coated & Uncoated</p>
<p>PREPS (The British Publisher's database for Responsible Environmental Paper Sourcing)</p> <p>15 major union publishers in the UK manage and distinguish into grades of forest resources and environmental DB related to the book industry. Moorim Paper is registered by PREPS.</p>	<p>Neo star gloss, Neo star snow white</p>
<p>Carbon Labeling</p> <p>Moorim Paper had acquired art paper carbon labeling first in Korea from KEITI (Korea Environmental Industry Technology Institute). And Moorim paper has been producing eco-friendly products minimizing carbon dioxide emission.</p>	<p>Neo star gloss, Neo star snow white</p>
<p>Korea ECO-LABEL certification</p> <p>Moorim Paper, Moorim SP gained the permission to use the ECO-LABEL from KEITI (Korea Environmental Industry Technology Institute). So Moorim Paper, Moorim SP save resources and minimize emission of pollutants.</p>	<p>Art , uncoated MFC & Fancy</p>
<p>KFCC(Korea Forest Certification Council)</p> <p>Moorim P&P, Moorim Paper, and Moorim SP had all acquired KFCC CoC certifications from KFCC(Korea Forest Certification Council). This certification verifies that the forest is managed in a sustainable manner which preserves the natural ecosystem and provides benefits to the local residents and workers' lives with no illegal actions</p>	<p>All coated & Uncoated</p>

VISIT TO MOORIM



4. VISIT TO DAE – HAN



VISIT TO DAE – HAN

Address: 256, Sangjeongssangcheong-ro, Osong-eup,
Heungdeok-gu, Cheongju-si, Chungcheongbuk-do,
Republic of Korea
Tel: +82-2-2049-7721
Email: kdy@daehanpaper.com

- Foundation: August 01, 1958
- **Main Technology:** Every product uses more than 80~100% recycled pulp
- **Eco-Friendly Technology:** FSC, GR(Good Recycled), Environment mark
- **Eco-Friendly Products:** Every product are certified with FSC, GR mark and Environment mark
- **Export Scale:** 3,000~4,000 ton / month

DAE – HAN – MILL FACILITIES



VISIT TO DAE – HAN

Parameters	PM1	PM3
Speed(m/min)	860	1600
Width(mm)	2364	6304
Capacity(ton/day)	200	680
Basis weight(g/m²)	30~150	30~100
Former type	Hybrid Former	Gap Former
Maker	MHI	MHI - Beloit
DIP Capacity(ton/day)	170	700
Products	Printing & Writing paper, Copy paper, Textbook paper	Newsprint paper, LWC

5. VISIT TO JEONJU PAPER



VISIT TO JEONJU PAPER

Address: Seoul Office

**6th Floor, KCCL Building 39 Sejong-daero Jung-gu Seoul
100-743, Korea**

Address: Jeonju Mill

**59, Palbok-ro, Deokjun-gu, Jeonju-si, Jeorabuk-do
561-723, Korea**

History of Jeonju



1965. 01

Established Seahan Paper



1968. 08

Jeonju Paper



1992. 09

Hansol Paper



1999. 12

PanAsia Paper Korea



2006. 01

Norske Skog Korea Co., Ltd



2008. 09

Jeonju Paper Corporation

VISIT TO JEONJU PAPER

Asia's leader in newsprint and publication paper

- Jeonju Paper is the largest newspaper paper manufacturer in Korea and produces 900,000 tons of newsprint, publication paper, and industrial paper per year
- Supplies to most newspapers in Korea as well as in major international markets.
- Throughout its 50 years of history, Jeonju Paper has served both and overseas customers with the highest quality newsprint.
- As Asia's leading newsprint manufacturer, we will continue our excellence by drawing from decades of experience and from our state of the art manufacturing facilities that include the world's largest deinked pulp facilities and Korea's only mechanical pulp lines.

VISIT TO JEONJU PAPER

- Operates the world's largest deinking plant and Korea's only TMP (thermo-mechanical pulp) lines
- Employees approximately 440 highly skilled full-time employees, whose average employment at Jeonju Paper exceeds 19 years
- Received EFC (Environmentally Friendly Company) designation by the Ministry of Environment of Korea since 1995

VISIT TO JEONJU PAPER

Publication Paper

- Eco-Textbook/ Study Guides
- Eco-Book & Publication
- Eco-Standard Document Form
- High Quality Publication



Products news print

- Standard Newsprint
- Improved Newsprint
- Colored Newsprint



VISIT TO JEONJU PAPER



6. VISIT TO KLEANNARA



VISIT TO KLEANNARA

Address: Headquarters: 6-gil 5 Samil-daero, Jung-gu, Seoul
Tel: +82-2-2270-9200 Fax: +82-2-2275-7679
Factory: 1-gil 64 Taeseong, Gangnae-myeon, Heungdeok-gu,
Cheongju-si, Chungcheongbuk-do
Tel: +82-43-230-7200 Fax: +82-43-230-1525

- **Foundation Year: 1966**
- **Sales: 581 million dollars(2014)**
- **Export: 137 million dollars(2014)**

VISIT TO KLEANNARA

Products

Baby Diapers, Sanitary Napkins, Bathroom Tissues, Wet Wipes

Production Lines

Annual production capacities of 520,000 tons

Certificates

**Obtained FSC Certification / Organic Pure Cotton Product Certified(OE100)
/ Obtained the COTTON USA Mark / Obtained the Atopic Allergy Relief
Mark / Environment Mark Certified / Obtained FDA Certification**

VISIT TO KLEANNARA

- Kleannara has sustained sales growth at 6% CAGR (Compound Annual Growth Rate) over the last 10 years through continuous challenge and passion.
- We aim to grow continuously with balanced growth: 50% in personal care (hygiene products), 40% in paper products, and 10% in new business. New products development accounts for 20% of total sales.
- Also, putting the highest priority on clean environment, Kleannara has always made its highest effort to provide people with healthier and more pleasant products and services.
- Through the ISO 14001 system and the Green Business Program, the Company has eco-friendlily managed every process ranging from the beginning of product development to the end of recycling it.

VISIT TO KLEANNARA

- Any wastewater generated in the production process undergoes a series of physicochemical and biological treatment processes, and then is filtered and purified through activated carbon adsorption.
- Consequently, we recycle 67% of the wastewater generated within our facilities.
- Making the most of combustible waste incineration facilities with waste plastics, we have replaced fossil fuel with solid fuel, hence saving sizeable energy.
- Furthermore, we have reused various resources (e.g. water, paper, waste, etc.) and accordingly improved energy efficiency a great deal

VISIT TO KLEANNARA

Facilities of Paper Division

- The Paper division, with a daily production capacity of 1,300 tons, manufactures a variety of the best quality papers and white paperboards.
- Our Paper Division is manufacturing and selling papers used for industrial packaging.
- Based on our production facilities capable of producing 430,000 tons per year together with world-class cutting-edge production line, we have been manufacturing white board paper with optimal formation, surface smoothness and print gloss.

VISIT TO KLEANNARA

Facilities of Hygiene Division

- The hygiene division has a daily production capacity of 270 tons.
- The Company draws much attention from consumers for its broad spectrum of personal care products(bathroom tissues, facial tissues, wet wipes, baby diapers, feminine hygiene products, etc.).
- In addition, the Company has continuously invested capital in producing diaper pants in 2011, feminine care in 2014, and bathroom tissues in 2015, in order to increase the quality of its products.



VISIT TO KLEANNARA

Major exporting countries

- **Kleannara exports almost half of its total production volume to over forty countries (Japan, China, Hong Kong, Taiwan, Singapore, Mongolia, Vietnam, Cambodia, Myanmar, Philippines, Indonesia, Sri Lanka, The United States, Canada, Mexico, Venezuela, Jamaica, Guatemala, Colombia, Brazil, Russia, Portugal, Iran, Saudi Arabia, the United Arab Emirates, Libya, Qatar, Kenya, New Zealand, Australia etc.)**
- **Kleannara has expanded its overseas presence, starting with its advance into the Chinese market in 2013.**

7. VISIT TO HANSOL PAPER



VISIT TO HANSOL PAPER

Address: 23-24F, B-dong, Fine Avenue, 100 Eulji-ro (Eulji-ro 2ga), Jung-gu, Seoul

Contact information: soyoung.shin@hansol.com / +82-2-3287-6230

Year of establishment: 1965

VISIT TO HANSOL PAPER

Products

- **Printing & Writing Paper:** Our printing & writing paper business offers premium printing quality and enhanced copier performance to customers. It is most often used in textbooks, catalogues, flyers, brochures and art books.
- **Carton Board:** Our carton board business produces high quality packaging boards from our cutting-edge facilities. Products are categorized into carton board and all-pulp (AP) boards based on their usage.
- **Specialty Paper:** Our specialty paper is a premium line of paper that requires a high level of technicality. It offers premium quality printing paper, fancy paper, functional paper depending on their use.

VISIT TO HANSOL PAPER

Products

- **Thermal Paper:** Our thermal paper business produces paper that changes color when exposed to heat, with products ranging from POS receipts and labels to tickets.
- **Sublimation Paper:** Sublimation paper is the paper that enables indirect printing on the textiles and polyester-based substrates that are difficult to print directly. By applying heat to the sublimation paper through heat transfer printer, printed image of the sublimation paper is used for the image transfer for fashion clothing, sports wear and signage. Especially, Hansol Inket sublimation paper has high transfer density and clear transfer image. Available water-based inks.

VISIT TO HANSOL PAPER

Sales figures (based on year 2017)

- Domestic Sales USD 660 million
- Export Sales USD 703 million
- Total Sales USD 1.36 billion

Environment friendly products

New Uncoated Wood free Paper, New plus, Fine coat, Magic Comma, Encore, Aloe Paper, Jeju Tangerine Paper, Hi-Q DuoMatt

8. VISIT TO WOLSAN PAPER A& TAILIM GROUP

Address: 62, Gongdanse3-gil, Chilseo-myeon, Haman-gun,
Gueongsangnam-do, Korea Tel. (+82)55.586.6000
Fax (+82)55.586.6002

Sales Tel : (+82)31.491.0010(161) / **Fax :** (+82)31.491.0023
E-mail : marcuswi@tailim.com

Group overview

Paper BU - Ansan Mill (Tailim Paper)

- **Uiryeong Mill (Tailim Paper)**
- **Masan Mill (Wolsan Paper)**
- **Jeongeup Mill (Dongwon Paper)**



VISIT TO WOLSAN PAPER A& TAILIM GROUP

Group overview

Packaging BU (Tailim Packaging)

- Sihwa Mill
- Pocheon Mill
- Cheongwon Mill
- Masan Mill
- Paju Mill
- Yongin Mill
- Gumi Mill
- Ulsan Mill
- Pyeongtaek Mill

VISIT TO WOLSAN PAPER A& TAILIM GROUP

- **No. of Employees** **110 (2016)**
- **Major Production** **Kraft Liner, Corrugated medium, test Liner**
- **Capital** **2.2 million US\$(2016)**
- **Sales** **105.5 million US\$(2016)**
- **Annual Production** **445,000tons/1yr(2016)**
- **Factory site** **61,024m² / area 24,691 m²**

VISIT TO WOLSAN PAPER A& TAILIM GROUP

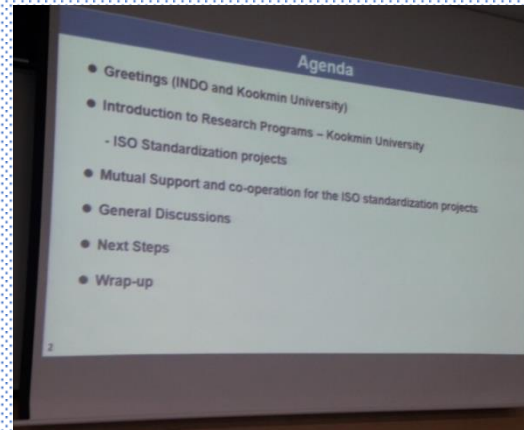
Company History

- 1999.04 Muhak paper acquisition 300ton/day
- 2000.05 Developed dryer part 450ton/day
- 2001.08 On top wire constructed 600ton/day
- 2002.05 MB former constructed 850ton/day
- 2003.07 Acquired ISO 9001
- 2006.08 Developed calendar & dryer part 1,000ton/day
- 2008.05 Modified double shoe press 1,200ton/day
- 2013.12 Developed middle ply wire part 1,300ton/day
- 2017.11 Acquired weather management certificate

TECHNICAL DISCUSSIONS



On Bagasse Pulping



On ISO Standardization



Lab facilities at GNU



KTAPPI SEMINAR

Presentation by Mr. Ghoyal



Presentation by Mr. Ganesh



KTAPPI SEMINAR

Receiving Appreciation Plaque from President of KTAPPI

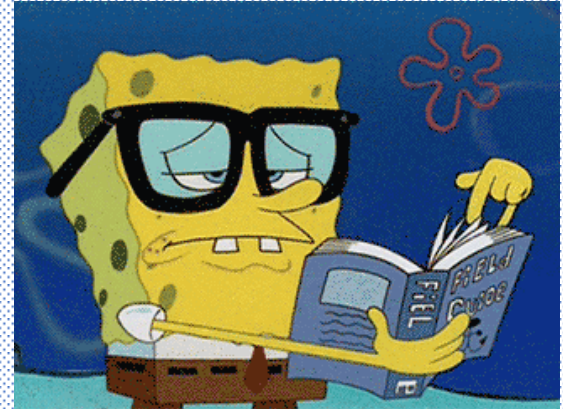


Learnings / Take away points

TAKE AWAY POINTS

- It was an opportunity to visit Mills of Different kinds like

- ❖ Writing and Printing
- ❖ Board Machines
- ❖ Tissue Machines



- House Keeping standards in many mills can be benchmarked.
- Dry floor concepts, Safety features are of international standard.
- All mills are equipped for environmental compliance.
- Use of Bio Energy / Renewable Energy technologies can be horizontally applied.

Life is Learning!!!

Highlights of the tour

A tour to remember and to Cherish for many reasons

- Organizing an event of this magnitude that too on overseas travel..... *Marvellous job*
- One can visualize the amount of preparation, plan and execution skills required.
- Hospitality of UNIDO – *A par excellence*
- Travel , Stay and Food arrangements...
Beyond expectation levels
- Understanding among tour members
irrespective of diversified culture..... *Outstanding*
- Response to situation..... *Admirable*
- Sharing taste of India (Sweets, snacks).....
Mouth watering
- Over and above, dedicated support from UNIDO team
Won our Hearts



A tour to remember and to Cherish for many reasons



*Good bye to the tour filled with Knowledge, joy, attachments,
understanding and emotions. Welcome to the next tour*

*Suggestions /
Opportunities for improvement*

SUGGESTIONS / OPPORTUNITIES FOR IMPROVEMENT

- **Mill tour timings can be enhanced to 4 – 5 hrs minimum to see and understand the facilities**
- **Tour program may be chalked out with optimum travel times between two mill visits**
- **Mill presentations and question & answer sections may be clubbed to optimize the time further**

Thank
you!

