

'LEARNING' – TO MAKE PAPER

Papermaking today comprises of many disciplines: chemistry, chemical engineering, mechanical engineering and microbiology.

Knowledge of all these areas and the ability to think about them in an integrated manner makes a good paper maker. Since the focus of their work is the paper making process, much of their job is geared towards improving efficiency, and making the process more cost effective and environmentally friendly.

WHO MAKES A SUCCESSFUL PAPERMAKER

A successful paper making career will depend on a good mixture of academic credentials, interpersonal skills, and a demonstration of problem solving capabilities.

Employers in the pulp and paper industry, consider 'interpersonal skills' a very important facet while interviewing for new recruits.

Says an industry veteran "A papermachine has fixed costs of several thousands of dollars per hour. It is necessary to run it efficiently all the time. It helps if you can deal with your own stress and that of other people under stress."

ENGINEERING OR CHEMISTRY ?

Some papermakers opine that a degree in chemical engineering or Pulp and Paper is more practical than a degree in chemistry, for working in this industry.

In fact, the people attracted to pulp and paper chemistry tend to be engineering-type thinkers –those who enjoy both physical and process chemistry. They are open to a variety of disciplines and tend to explore scientific questions broadly.

According to **Martin Hubbe**, Research Scientist at **International Paper** "Chemistry is important, but so also are engineering courses. A great deal of what we do involves optimization of processes and to understand the same, its helpful to have an engineering background".

Some trained chemists agree that not having a formal pulp and paper degree could be a drawback in the first year of the job, but ultimately working in the industry provides the necessary fast-paced training.

UNIVERSITY EDUCATION

Under graduate and post graduate courses in pulp and paper are available in the leading universities of most paper producing countries, mostly as part of the faculty of forestry and forest products. However, closeness to the industry is considered

paramount. With this in view, 11 North American universities have formed **The Pulp and Paper Education and Research Alliance (PPERA)**. It is an alliance of universities with programs which are individually distinctive but which are similar in being committed to the advancement of the North American pulp, paper and allied industries. PPERA members work together to develop synergistic programs in education, research, and service which are mutually beneficial and collectively leverage contributions to the pulp, paper and allied industries.

Universities of some other paper producing countries have similar attitudes and goals.

The **McGill University Pulp and Paper Research Centre** studies issues relevant to the Canadian pulp and paper industry. It is a partnership of FPIInnovations (Paprican Division), McGill University and the Canadian Government.

Similarly **The Pulp and Paper Centre** at **The University of British Columbia (UBC)** is an inter-disciplinary, cross-faculty research centre with specialized laboratories and offices for graduate students, post doctoral fellows, research engineers and faculty who conduct research for the benefit of the current and future pulp and paper industry. The centre serves to bring together faculty and student researchers to work collaboratively with the manufacturing industry, utilities, supplier industry, consultants and government agencies. The centre also serves as a point of entry for the industry looking to the university for innovative solutions, new technology and educational programs. The Centre brings together the other faculties of Applied Science, Forestry, with participation of the Departments of Chemical and Biological Engineering, Civil Engineering, Electrical and Computer Engineering, Mechanical Engineering, Metals and Materials Engineering, Chemistry and the School of Architecture.

The Centre also fosters collaborative research with **Canfor Pulp Ltd Partnership** who own 3 pulp mills in the vicinity.

TRAINING AND CONTINUOUS LEARNING

Realising the critical need for a globally competitive workforce in the United States pulp and paper industry, **TAPPI**, the leading technical association for the worldwide pulp, paper, and converting industry, has recently announced the formation of the "**National Network for Pulp and Paper Technology Training**". This will be led through **Alabama Southern Community College (ASCC)**. This industry-education-government collaboration is unprecedented in the U.S., for any industry.

INDUSTRY NEWS	<p>Frost and Sullivan in association with The Economic Times have instituted the India Manufacturing Excellence Awards. Awards are based on 5 major competitive differentiators: <i>customer focus, cost reduction, quality deployment, safety deployment and innovation adaptation</i>.</p> <p>Two paper companies, BILT Graphics Paper Products Ltd, Bhisgan and Emami Paper Mills, Balasore have been awarded a Gold and Silver Certificate of Merit respectively in the current set of awards.</p>
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Working in close collaboration with local industry, Auburn University, the Alabama Technology Network (ATN), and with support from the National Science Foundation (NSF), ASCC has created one of the nation's leading training centers for paper and chemical workers. Industry scholarships and internships, and a state-of-the-art manufacturing laboratory are helping to produce graduates of the 2-year Associate Degree program.

ASCC President Dr. John Johnson refers to the new National Network as "a vision for transformation of a core American industry", working through a multi-craft curriculum for full-time technical college students, in addition to recognized continuing education for incumbent workers.

In India, **IPPTA** has taken the initiative to conduct workshops for paper mill personnel as a process of 'continual learning'.

DOING IS LEARNING

It has long been realized that 'learning' papermaking is more of a 'hands-on' activity.

In order to convert 'real life' experience into 'learning', four Australian paper mills (**SCA Hygiene, Kimberly-Clark, Amcor Fibre Packaging and Australian Paper**) have come together to initiate a programme called the **Pulp and Paper Industry Skill Development Unit** or **SDU**.

To replicate the working environment of operators, learners interact with an e-learning tool through a virtual operational interface resembling the real work of operators in control rooms.

The tool provides trainees with the opportunity to explore specific components of the process, such as how each component affects the end product and how it inter-connects with other components of the system, along with the opportunity to apply their skills to troubleshooting scenarios, which simulate problems with progressive levels of complexity. Trainee operators learn to respond to system problems by making adjustments to the virtual equipment and computer settings which are based on the types of information available in real production environments, such as readouts, graphs, chart and

tables. A virtual "production assistant" is made available to assist the learner when required. Troubleshooting skills are imperative to the productivity of the industry, and is an area in which the industry is experiencing skills shortage. Online training is not only immediately applicable to the industry, but also gives the SDU the opportunity to promote the benefits of e-learning as a skills development strategy to the industry.

"Today operators, in the industry, are expected to interpret multiple sets of figures, graphs, flow charts and diagrams, produced on digital VDU's, to resolve problems quickly and efficiently as they arise."

"Paper-based training is a limited medium for developing these skills, which require an experiential mode of learning. The troubleshooting operational model will allow trainee operators the opportunity to practice, and develop their troubleshooting skills, by applying their knowledge to virtual scenarios" says an SDU coordinator.

E-learning-based training was acknowledged by the pulp and paper industry to potentially be a powerful model for assisting the development and acquisition of troubleshooting skills. This has clearly proven to be the most effective method of skill development.

CONCLUSION

The Indian Paper Industry has become the 'fastest growing paper industry of the world'. At the same time Industry leaders are decrying the lack of skilled manpower.

It is evident that urgent action is needed on the now proven lines of university-industry-government collaborations.

It is always the leaders in industry who need to set an example and get together – perhaps through industry associations and join hands with universities offering courses in pulp and paper technology and chemical engineering.

Maybe the e-learning model will make papermaking look tech savvy and attract the modern generation to fulfill the ever-widening vacuum for skilled paper technicians.

QUOTABLE QUOTE	Life is constantly providing us with new funds and new resources; even when we are reduced to immobility. In life's ledger there is no such thing as frozen assets. - Henry Miller
SCRABBLE	What does C2S stand for ? (Hint : Coated Paper) First correct answer will win a Parker Vector Roller Pen (Maximum two prizes for one person in a year). Post / Fax / Email your answers to EDITOR-W&F SNIPPETS by 20 th April, 2012.
WINNER MAR'12	Mr. A.K. Somani, Sr. Manager (Proj & Dev), JK Paper Ltd, (Unit: CPM), Fort Songadh, Dist.- Tapi, Gujarat Answer: C F B : COATED FRONT BACK
?QUIZ	Choose the right options : A silicone based defoamer is normally not used at the wet end of papermaking because it can : (a) make the paper slippery (b) produce silicone oil spots (c) makes the paper flammable (d) requires a very high dosage Post / Fax / Email your answers to EDITOR-W&F SNIPPETS by 20 th April, 2012.
WINNER MAR'12	Mr. Pradeep Kumar Shibahare, QC, ITC Ltd, PSPD, Bhadrachalam (AP) Quiz : Choose the right options : - The purpose of adding Sodium Silicate to the pulper in the deinking process is to :- (a) Dissolve the ink (b) Suspend the ink (c) Act as pH buffer (d) Stabilize the peroxide Answer: b) Suspend the ink (c) Act as pH buffer (d) Stabilize the peroxide
 Prizes	1. Best / first correct answer received will win one-year subscription to IPPTA Journal (Maximum one prize for one person in a year). 2. Best of the 12 monthly winners in a year, will win one-year subscription to Paper 360^o Magazine, USA .
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