Exploring unknown territories ---

I am Dr A. K Chatterjee;I started my journey with paper industry about 45 years back. After completing BSc from Calcutta University,I passed PG Diploma in pulp & paper technology from IPT-Saharanpur in the year 1971. And the subsequent years folded as below.

Year 1972, joined APPM, Rajahmundry. After few months I was told that the recovery furnace is going to have a **cold shut down**. Itwas a life time opportunity to watch inside as advised by Mr.R.G Kapoor .The D-day arrived and I entered inside the furnace with engineering team through manhole. It was huge, climbing scrafholding,watching studs, tubes insides,S/H coils, welding jobs, repairs , wall sulfate deposits etc.Idli-dosa kept on coming inside. When all started getting dismantled & team asked me to go out. I was asked to lie down on a stratcer, was shocked, and askedwhy? All answered "you are coming out after 2 nights, need to go for health checkup...'I was declared fine by thedoctor. This incident made me famous overnight.

I was sponsored to study management in Madras & Calcutta. In 1974 Joined IPP, the only sulphite pulping mills in India. On asking to work in project, The GM, Mr N.C Sengupta asked to do so in extra time after completing shift duty.1976 HPC took over. In 1977, Joined Papyrus papers a new agro based project in kalyani, w.b. Completed the project in spite the whole mills was submerged in flood in 1978.In 1980 Joined Shiva papers Ltd,Rampur,UP .Commissioned the mills in 1981 & in 1982 joined m/s Chemprojects & steered many projects. In 1984 joined PCT-paper & packaging division, Sahibabad/Faridabad.

Studying while working: completed Chemical Engineering from jadavpur (I.I.Ch.E) in 1978, MBA from Annamalai University in 1995, Ph.D in 2012.

1988-1999:- paper division of Taj Group of hotels, Bomaby, ITC-Tribeni Tissues, Wimcow papers, Calcutta.Multiwal paper, and Kashipur uttarakhand. Shiva papers Ltd, Rampur, UP.SCA-Hygiene Joint Ventures with yatindra papers, New Delhi, IARPMA as Jt.Director (Technical).

Year 2000, ABC paper (NowKuantum): -Increased production from 100 to 150 tpd. Lucky to get 30 days to study the mills before independent responsibility.6-10 PM Mills used to be shut due to load shedding/MDI restriction. To restart the whole mills was losing another couple of hours. There were few unused RCC towers of old bleach plant, Breakers beaters, Potchers-came to my help. From 2 pm onwards full attention given for pulp mills operation & stored enough pulp enabling to keep the 3 paper machines running without stopping due to pulp shortage.6-10 pm Pulp Mills kept shut to keep MDI within limit. And thus, by practicing same method every day the production jumped by 50 T /Day.

Year 2002, ABC Paper, 'White Gold': -We were making Cream wove, 80-82 Brightness, out of Sarkanda. Difficult to avoid greenish tint due to this raw material. Market was not contributing adequately. VP marketing gave the sample of BILT.Production team was willing to try. Discussed, made many samples in Lab & finally fixed a date & started the production by increasing cooking, Bleaching chemicals, peroxide etc. But till late night the shade was not getting matched. Team was tired but not willing to accept failure. I understand that they were more concern about me, since it was my commitment. Food, tea/coffee etc. arranged on shop floor. The entire team started again with full spirit. Meanwhile the stock preparation manger Mr. Gautam Gupta, little excited, asked me can he add any quantity of any chemicals. I was so desperate, said 'YES'.

And then within an hour the MAGIC was created at midnight 2 AM. Can't say the amount of OBA was used, which got reduced in due course of time, on recirculation m/c's back water. Andthus, the wonderful, game changing product "White Gold' was created, 88-90 Brightness, excellent printability. Eventoday the same is Premier product, Name 'ABC Gold'.

This experience helped me to make 'K R Brite 'in 2012. Bagasse pulp & ECF bleaching (D-EoP-D) was added advantages.

Year 2002-'03, ABC Paper, 'LIGNOSULPHONATES':-In absence of Chemical recovery plant or any other addresal to black liquor, the pollution problem was mounting, huge pressures were being exerted by authority, other mills, various associations etc.MD, under threat to shut the mills, had to sign a bond assuring not to drain polluting liquid.

As unit head I felt the emergency to do something. My previous experience in IPP (India paper Pulp, Hazinagar, W.B), The only sulphite pulping mills, was making a very valuable by-product from spent liquor, called 'Celex Sulphite Lye', in 40 % TS & Powder, selling higher than paper price. This gave the clue, started Lab works, sent samples to various testing laboratories, shared with MD Mr. Pavan Khaitan. Attended cpcb meetings & convinced& got notified that 'apart conventional soda recovery any other alternative addresal of black liquor would be accepted'.

With active support of MD, arranged used evaporator plant from a big mill& started production & selling at 45 % TS Lye. It is used to make cement concrete 'Admixture". Sodium Lignosulfonates has many other uses e, g as a binder, plasticizer, Decanter, Oil drilling, in Explosives etc.A 100 % import substitute. Current price varies 40-65 Rs/Kg powder. China, Russia, South Africa are only producing countries.

Thus, the Mills was saved from Closure, at least for the time being. Why the mill is no more making SLS- Is another long story, may share some other time.

- **2005-2014**: Pragathi paper,Amabala,150 TPD News print.Yazd,South Africa a Kraft mills.Ali Al Rajhi, KSA,500 TPD container board project,Riyadh.Dismantled on paper plant from St.Curtberts paper mills,Wells,Bristol, UK & re-erected at Tijuana, Mexico in 2010-11,Year 20111-2014 with K R papers,300 TPD Bagasse based fine paper.

Year 2016, Genus paper, Moradabad. "Cracking/Delamination's of Kraft paper" :-I proposed to visit the corrugators to witness/study the Problem of Cracking of carton, before joining, as an external expert. Thus got the full information why, when & how the cracklings appears on creasing/folding, especially with 28 BF, 180 GSM.

Initially for one year I was stationed at Delhi office & visiting factory once in a week, as the CMD didn't agree the Director-operation to stay at mills every day. It was difficult to control all the operating parameters through videoconferencing&VP-production. Neither weekly visit was much effective.

MD, under grave situation of quality issues, finally convinced CMD & I moved to factory. With active participation R & D It revealed that we were using huge quantity of native starch (70-80 kg/T) to artificially jack up the BF, high refined pulp very high nip pressure in size press of 3 layers Kraft paper, and on top of it using Calendar (under impression to give good finish for printing etc) - Making paper 'NON-POROUS' (Gurley 90-100 sec/100 cc air) is the main reason of Cracking. Controlled all parameters, reduced starch to 30-40 Kg/T, Removed/Unloaded calendar, made paper of Porosity 30-40 seconds/100 cc air and solved the problem.

I consider that it was very big achievement & helped not only Geneus paper, but many corrugators & subsequently another half-dozen Kraft mills, I visited, including got me IPPTA 1st prizeaward in Vapi conference for article on this topic.

Steered another green field state of art most modern packaging paper project in Hydearabad, 300 TPD, Binjusaria papers Ltd & commissioned in November, 2018.

I have spent over 45 years in paper industry where in I have learnt a lot, tried several new things with failures and success in good measures. I relish 4.5 decades of time spent and my

inner soul still kicks me to do something new at first knock of a problem. **“Exploring unknown territory”** is something that I love.

Thanks, IPPTA for giving me this opportunity to pen my thoughts.

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