JILTA

ILTA
Since 1950

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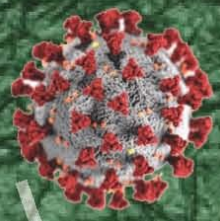

Our Activities

- An Association with over 600 members from India and abroad working since last 68 years for the growth and development of Leather and its allied industries.
- Organize seminars, symposiums, workshops in order to share information, knowledge & latest development and interactions for the benefit of all concerned.
- Organize Human Resource Development programmes on regular basis.
- Publish for over 60 years, a technical monthly journal namely "Journal of Indian Leather Technologists' Association" (JILTA), widely circulated through out the World.
- Publish books for the benefit of the students at various levels of study, for the Research Scholar and the Industry.
- Work as interface between Industry and the Government.
- Assist Planning Commission, various Government Institutions, Ministry and autonomous bodies to formulate appropriate policies for the growth of the Industry.
- Assist small and tiny leather goods manufacturers in marketing their products by organizing LEXPOs in Kolkata and different parts of India.

Indian Leather Technologists' Association

[A Member Society of International Union of Leather Technologists' and Chemists Societies (IULTCS)]

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

Indian Leather Technologists' Association is a premier organisation of its kind in India was established in 1950 by Late Prof. B.M.Das. It is a Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS).

The Journal of Indian Leather Technologists' Association (JILTA) is a monthly publication which encapsulates latest state of the art in processing technology of leather and its products, commerce and economics, research & development, news & views of the industry etc. It reaches to the Leather / Footwear Technologists and the decision makers all over the country and overseas.

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(Member Society of International Union of Leather Technologists and Chemists Societies)

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INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (ILTA)

(Member Society of International Union of Leather Technologists and Chemists Societies)

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Co-Ordinator : Mr. Subir Datta

3) Regional Activities Sub-Committee :-

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

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Leather Fraternity 71 years of service to the International

Automation and Indian Industry

(Part - I)

Automation and robotics technologies are in their infancy in Indian medium-size factories since technical feasibility and return on investment (RoI) are preconditions for deployment. Factories review RoI basis a 2-3 year horizon, which becomes a difficult RoI with the cheap cost of labor. RoI needs to be examined basis higher output levels, better quality, reliability to compete globally and beyond labor substitution. High capex costs are however a deterrent.

In this context, the Industrial Robot Sales report by International Federation of Robotics (IFR) throws up a few interesting facts: Global industrial robot sales increased 15 percent to 253,748 units in 2015 with 75 percent of the total sales volume from 5 countries - China, Korea, Japan, US and Germany. Sale of robots in India was a mere 2,600 robots compared to 70,000 in China and 50,000 in Europe. Robotics is nascent in India with startups like Shastra Robotics, Gridbots and Systemantics solving niche automation tasks with home-grown affordable robots. India is an OPEX driven economy and any business model innovation from CAPEX to OPEX and financing could sway automation in the right direction. The new greenfield projects by large manufacturers will hopefully lay emphasis on automation while the existing factories adding new lines and expanding are likely to look at immediate RoI and may miss the opportunity.

Despite manufacturing sector not creating jobs, the wider ecosystem is rife with opportunity. Some opportunities will evolve more organically as manufacturing activity and global product demand increase. Simply put, more production to meet demand will create more jobs (albeit more skilled ones) in the core and ancillary industries. Any large manufacturing setup will create several peripheral ancillary industries in the cluster. As more factories are setup, demand for more peripheral or support jobs in supply chain to support the plants or the workers in these plants (in terms of services) will arise.

Even though such industries are moving towards bigger use of machinery (not necessarily automation), the Indian Council for Research on International Economic Relations (ICRIER) study did not find a significant decrease in Labor/Machine ratios where such shifts happened. This makes these industries a bright spot for job creation. As manufacture and sale of products rises, opportunity for more pre-sales, implementation, logistics, installation, and support jobs throughout the entire supply chain will no doubt be seen. This makes traditional labor intensive manufacturing industries like leather, apparel, food a bright spot for job creation as issues with respect to skilling, SME support, export promotion get addressed.

In traditional labor-intensive manufacturing industries like leather, apparel, food etc., an **ICRIER study points out** that the employment generation in these industries is hampered by non-availability of skilled workers, bad labour laws, lack of more female workers, lack of credit, lack of infrastructure etc. Even though such industries are moving towards bigger use of machinery (not necessarily automation), the ICRIER study did not find a significant decrease in Labor/Machine ratios where such shifts happened.

This makes these industries a bright spot for job creation, especially as #MakeInIndia government initiatives in skilling, SME support, availability of credit, export promotion, etc, address some of the underlying issues that hamper job creation in these industries. Pressures to increase plant utilisation which is currently at 70 percent average and more shifts of shorter duration will also increase job creation possibilities. Low plant utilisation is also a result of issues such as non-availability of raw material, components, maintenance, labor laws, labor skills etc. As these issues get addressed, plant utilisation will improve and more people will be needed to run factories for longer periods.

If we do some crystal gazing and imagine how manufacturing itself may fundamentally change in the near to midterm future, more job opportunities emerge.

- For example, distributed manufacturing with 3-D and 4-D based techniques, can open up new avenues to augment bulk manufacturing as we know it today. One bold vision is that while a lot of component building blocks become standardised, commoditised and made using bulk, automated manufacturing and the final products will allow for higher customization using these components. Such customization will necessitate specialized manufacturing AND expert assembly jobs.

- The trend of searching for optimal solutions as regards price, performance, aesthetics and differentiation is on the rise across the social spectrum. Such shifts in the nature of manufacturing will positively affect job and entrepreneurial growth in manufacturing in different ways than how we view monolithic manufacturing today.

- Manufacturing today starts at raw material procurement and culminates with production and packaging. In the long term, as environmental regulations strengthen, manufacturers will be required to offer greater product stewardship and cradle-to-cradle manufacturing. This will give rise to a whole class of new jobs in manufacturing that don't exist today or at best are seen in unclassified sectors. For example, servicing the products, determining failures and fixing problems in the field, selective dismantling of broken products, classification for re-use, repurposing, recycling bins, refurbishing products and components etc are entirely new job avenues that are largely yet non-existent.

The world-over, the definition of employment is changing from lifelong to job-hopping to cyclical to temporary. Concerted efforts are required to condition the labor to accept more temporary and cyclical job opportunities. While the net results of these countervailing forces, simultaneously reducing and increasing job growth, are somewhat speculative, one thing is clear. Employment models need to evolve so that a large army of cyclical and temporary workers will need to be managed during periods of high and low employment demands. This needs new comprehensive thinking, program design and concerted execution by the Government and the industry working in unison.

Make in India and the growing consumption economy is great news for India, but the quantum increase in manufacturing jobs, a goal of Make in India will remain a challenge despite several fold increase in factories. In the interest of ensuring India has a competitive edge in the long run, while raising the bar on productivity and quality of output, India would do well to derive a metric focused on productivity and quality to make-good of India's potential and achieves the dream of India's manufacturing sector touching $1tn by 2025.

Goutam Mukherjee

Dr. Goutam Mukherjee
Hony. Editor, JILTA

As an active proponent of responsible chemistry, Stahl has established the Stahl Campus® training institute in its Center of Excellence for sustainable leather technologies in Kanpur. With our Stahl Campus® Leather Modules, we can offer training and information, such as responsible chemistry and sustainability in leather production. We believe that in this way, we facilitate transparency that inevitably will lead to a better supply chain with responsible chemistry.

Our approach is modular, making it easy to tailor learning programs to specific needs. Stahl Campus® has at its core the drive to unlock human potential and make that new competitive advantage. By providing the possibility of sharing knowledge, we embrace our role in the dynamic leather and chemical industry. Stahl Campus® is a great opportunity to strengthen skills and capabilities in order to make working methods more efficient by sharing experiences and studying products and procedures.

If you're interested to receive more information on Stahl Campus®, please contact Prasanna Maduri (**Prasanna.maduri@stahl.com**).

If it can be imagined, it can be created.

campus.stahl.com

stahl
campus

Tanners are facing growing environmental challenges as the market increasingly demands that high-quality leathers are produced more responsibly. Contributing to a more ecological leather production process, our responsible beamhouse portfolio helps tanners meet these challenges without compromising on the quality of the leather.

The Stahl BeTan® portfolio consists of a complete range of responsible solutions for every step in the beam house and tanning process, from soaking to liming and bating. Using the best-in-class responsible technologies from the Stahl BeTan® portfolio, tanners can reduce their water consumption and the amount of sulfides, solids and salt used during leather production.

Moreover, it can result in a shorter production process. Building on years of experience in beam house operations and acquiring the best technical experts in the world, Stahl has become the go-to partner when it comes to sustainable beam house and tanning solutions. Our Stahl BeTan® solutions demonstrate Stahl's continuous commitment to Responsible Chemistry, aimed at reducing the environmental impact of leather-making.

If you would like to know more about Stahl BeTan®, and what we can do for your business, visit **stahl.com** or contact **david.sabate@stahl.com**

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stahl

STAHL'S SUSTAINABILITY EFFORTS REWARDED WITH GOLD RATING FROM ECOVADIS

Stahl, announced it has achieved an EcoVadis Gold rating, placing it within the top 5% of companies assessed by EcoVadis. The award underlines Stahl's commitment to ensuring transparency in the value chain and collaborating with partners to improve the sustainability of operations and products.

EcoVadis is a globally recognized evidence-based assessment platform that reviews the performance of an organization across areas key to meeting sustainability targets, including the environment, labor & human rights, ethics, and sustainable procurement impacts. The latest report from EcoVadis highlights Stahl's positive performance across all these areas.

This year's Gold rating builds on the Silver rating achieved in 2020. In the past year, together with partners from across the value chain, the company has further committed to improving its environmental and social performance, protecting the communities in which it operates, and shaping a better chemical industry. Stahl's 2030 target is to maintain the EcoVadis Gold rating through continual improvement.

Michael Costello, Director of ESG: "Our new EcoVadis rating is a great achievement – one delivered through the hard work and dedication of many Stahl colleagues across the world. Our EcoVadis Gold rating underlines our commitment to ensuring a better world for all our stakeholders, and highlights that we are a trusted partner when it comes to ESG."

(Stahl News – 12/07/2021)

INTRODUCING STAHL'S NEW CEO, MAARTEN HEIJBROEK

July 1st marks an exciting new era for Stahl as experienced chemicals professional Maarten Heijbroek takes the reins as our new CEO. He replaces Huub van Beijeren, who is stepping down after 14 successful years at the helm. We spoke with Maarten about his decision to come on board and his views of the future. We asked him what he sees as the main opportunities and challenges impacting the chemicals industry, and what they mean for Stahl. *fl*

For those who don't know you, could you briefly introduce yourself and your background?

Sure. I'm a 56-year-old Dutchman, a father of three (22, 20, and 18), and a keen sportsman. I practice a variety of sports three to four times a week, from running to padel. Business-wise, I have broad experience in the specialty chemistry industry across lots of different businesses. My previous international job functions have seen me live in five countries besides the Netherlands: the USA, Malaysia, Germany, Italy, and the UK.

What attracted you to Stahl?

As Stahl was a customer of my previous employer, Croda, I already knew it as a very strong and successful company. What attracted me most was the level of professionalism and the clear focus on customer intimacy, which I value a lot. I was also struck by the passion and enthusiasm shown by Stahl colleagues. So far, everyone I've spoken to has been extremely passionate about his or her job: a good sign!

What do you view as the main developments shaping the chemicals industry today?

First of all, sustainability dominates everything. If you don't jump on that train, you'll simply not survive. Meanwhile, innovation is speeding up, partly thanks to the smart use of IT. There's more innovation taking place than ever before, and I see a shift from chemical to biological processes.

Looking at the center of gravity of the chemicals industry, we see Europe as the powerhouse of specialty chemistry. At the same time, there's a shift toward Asia.

And last but certainly not least, we have digital transformation. Digital tools and processes change the way we work and the way we deal with our customers. Achieving customer intimacy through digital platforms is becoming more important – companies that embrace this trend now have the potential to gain a competitive advantage.

From an outsider's perspective, how do you feel Stahl has coped with these changes?

As far as I can judge now, Stahl is in a good position. As a market leader, we have a lot of strength in R&D and have also embraced open innovation. The recently announced strategic focus areas fl– open innovation, renewable feedstocks, digital transformation, and sustainable development – indicate that Stahl is well aware of what's happening around it and able to anticipate the latest trends and developments.

What will be the biggest opportunities and challenges for Stahl in the years ahead?

Let me first emphasize that Stahl has always been very successful. I'd like to start learning about the company; learning from colleagues, our customers, and our customers' customers. After a while, I hope to be able to draw some conclusions: where are we heading in the coming years?

What, above all, do you hope to achieve during your tenure as CEO?

If Stahl is as successful in the next 10 years as it's been in the past 10, I think I'll be quite happy.

(Stahl News – 01/07/2021)

From the desk of General Secretary

71ST FOUNDATION DAY CELEBRATION OF ILTA & PROF. B. M. DAS MEMORIAL LECTURE

This would be organized by our association on Saturday the 14th August' 2021 at 5.00 pm on digital platform due to pandemic COVID-19 situation.

Dr. K. J. Sreeram, Director, CSIR-CLRI, Chennai & Vice President of ILTA, has kindly consented to deliver the prestigious 'Prof. B. M. Das Memorial Lecture' titled "**Sustainability in Leather & Footwear Sector**".

Dr. J. Raghava Rao and **Dr. Buddhadeb Chattopadhyay** would be felicitated on this occasion for their lifetime achievement in their field.

Toppers in B. Tech Leather Technology from Moulana Abul Kalam Azad University of Technology, Kolkata and Anna University, Chennai would be felicitated with B. M. Das Memorial award & J. M. Dey Memorial award on this occasion.

Author of the Article published in JILTA during calendar year 2020 adjudged as the Best Article would be felicitated with J. Sinha Roy Memorial Award in the occasion.

Formal Invitation for joining in the event along with e-Invitation Card would be sent to all the members, associations, organizations, institutions and industry in due course.

ANNUAL GENERAL MEETING OF ILTA

The 63rd Annual General Meeting of our association is likely to be organized by last week of September' 2021. Audit of Accounts and Annual Report of the association for the F.Y. 2020 - 21 is on progress.

Status of this forthcoming event will be intimated in due course.

POSTPONEMENT OF ELECTION FOR CONSTITUTING THE OFFICE BEARERS & EXECUTIVE COMMIITTEE OF ILTA FOR THE TERM 2021 – 2023

A long discussion had taken place in the 540th meeting of the Executive Committee on the possibility of conducting the Election for reconstitution of the New Office Bearers & Executive Committee of ILTA for the term 2021–2023.

After thorough discussion, it is concluded that holding Election with our existing constitutional system of casting of votes by physical presence of the Members under Kolkata, Howrah & both 24 Parganas jurisdiction, is not suitable.

It was therefore unanimously resolved that, due to new wave of acute Pandemic COVID, the present situation to conduct Election for constitution of the Executive Committee of ILTA for the term 2021-2023 is not at all suitable for casting votes physically as per our constitution.

Hence, it was decided by the Committee to postpone the Election process till the situation become normal and suitable to conduct the Election. Till then the present Committee both Central & Regional will continue to function as it is.The committee would review the situation at a regular interval and try to start the Election process as early as possible depending on the situation.

A letter of intimation regarding postponement of Election was posted to all the Members, the Presidents of the Regional Committees of ILTA and RoC, on **12th May' 2021**.

LEXPO IN KOLKATA AND SILIGURI

- The Kolkata LEXPO – XXXXI which was proposed to be organized at Kolkata Ice Skating Rink from 18th to 26th September' 2021, has been postponed and likely

to be rescheduled due to pandemic COVID-19 situation, as the decision has been taken in the 541st meeting of the Executive Committee held on 8th July' 2021. We have already deposited the booking money for the fair to the KISR authority, which is supposed to be adjusted with the rescheduled event.

- The Siliguri LEXPO – XXVI has been proposed to be organized at Kanchanjunga Krirangan adjacent Ground, Siliguri from 26th December' 2021 to 10th January' 2022. Provisional allotment of the ground has been obtained. In view of the Pandemic situation further decision will be taken accordingly.

However, latest progress and status report regarding organizing both the proposed fairs will be informed in due course.

YOUTUBE CHANNEL & FACEBOOK PAGE OF ILTA

An official **YouTube Channel** of our Association **(ILTA Online)** has been launched since November' 2020.

Also a **FaceBook Page** of our Association **(Indian Leather Technologists'Association)** has been launched since July'2021.

You may find all the Lives / Video recordings of different Seminar & Symposiums on both of these social medias along with our website **www.iltaonleather.org** time to time.

You are requested to kindly do **Like** & **Subscribe** the Youtube Channel and **''Follow**' the FaceBook Page to get regular updates on the activities of our Association.

RECEIVING HARD COPY OF JILTA EVERY MONTH

Members want to have the hard copy of JILTA every month or any particular issue, kindly inform us by email or post, whichever is convenient.

In case we do not receive any communication from you for a hard copy, we will continue sending e-copy of the same to your email id available with us. You may please verify your email id with our office at the earliest.

PUBLISH YOUR TECHNICAL ARTICLE

Faculties, Research Scholars and students of various Leather Institutes may wish to publish their Research / Project papers in an Article form in this monthly technical journal, JILTA.

Interested author may sent their paper (in MS Word format) along with a PP Photograph and Contact details like Email, Mobile etc. to our email IDs : admin@iltaonleather.org / jiltaeditor@gmail.com

Members are requested to :-

a) Kindly inform us your '**E-Mail ID**', '**Mobile No**', '**Land Line No**', through E-Mail ID: admin@iltaonleather.org or over Telephone Nos. : 24413429 / 3459. This will help us to communicate you directly without help of any outsiders like Postal Department / Courier etc.

b) Kindly mention your **Membership No.** (If any) against your each and every communication, so that we can locate you easily in our record.

(***Susanta Mallick***)
General Secretary

x

Read and Let Read :-

General Secretary and the Members of the Executive Committee are available to interact with members at 19.30 hrs, over Phone / Conference call on every Thursday

UN environment

International Resource Panel

Green Technology Choices:

The Environmental and Resource Implications of Low-Carbon Technologies

INTERNATIONAL RESOURCE PANEL REPORT

Solidaridad

Solidaridad Network is a global civil society organization providing efficient, scalable and economically effective and innovative sustainability solutions in various agricultural and industrial commodities such as:

Tea | Sugarcane | Soy | Leather | Livestock | Gold | Textile | Fruits & Vegitable | Dairy | Cotton | Aquaculture | Castor | Palm oil

switchasia
GRANTS PROGRAMME

EFFECTIVE WASTE MANAGEMENT AND SUSTAINABLE DEVELOPMENT IN KOLKATA LEATHER CLUSTER(BANTALA)

2020 -2023

Circular Economy

Effective solid waste management

Capacity building programme

EFFECTIVE WASTE MANAGEMENT AND SUSTAINABLE DEVELOPMENT
KOLKATA LEATHER CLUSTER

Trainings on Occupational Health and Safety

Robust public- private partnership

Efficient water consumption practices

PROJECT PARTNERS IN ASIA

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ADAPTATION OF Low-Salt Pickling FOR Sustainability

New technology of salt reduction from 7% to 1% in the pickling process

Leather is one of the most coveted consumer fashion products all over the world. Genuine leather is known for not only durability and versatility, but also reusable and recyclable qualities. Yet, the leather industry is often mired in controversies on sustainability concerns. Leather manufacturing involves significant use of chemicals at various processing stages that lead to the discharge of environmental pollutants. Effective effluent management is thus becoming a crucial component in production as the industry is increasingly moving towards making leather a responsibly produced commodity.

The tanning process in leather manufacturing produces high amounts of total dissolved solids (TDS) and total suspended solids (TSS). The percentage of chrome metal complex in the final discharge is also significant. High volume of chrome in effluent is one of the major challenges for the industry and getting rid of the residual chrome from sludge and waste water is often expensive. There is even a possibility of chromium (III) getting oxidised to chromium (VI), which could be toxic for human and marine life. Many of the state pollution control boards in India have discharge limits of chromium in treated tannery effluent discharge. Failure to meet the discharge limits may lead to shutting down of tannery operations, resulting in huge financial losses and laying off of workers who generally belong to the weaker sections of the society.

Unlocking Green Solution:

In this direction Solidaridad and Stahl India Private Limited are combining their technical expertise and market knowledge to improve the environmental footprint of the tanneries in India. Stahl is a global industry leader that pioneers in green products and eco-friendly processes that have commercial viability benefitting the leather industry as a whole. Solidaridad and Stahl have demonstrated trials on reduction of TDS, TSS and chrome metal percentage in the final discharge from the tanneries in Bantala, Kolkata

Traditional Chrome Tanning: Cow Hides of 10-15 kgs Pelt wt

PROCESS	%	PRODUCT	TIME	REMARKS
Pickling	50	Water		
Adjustment of Be	7	Salt	15'	Be = 6.0
	0.5	Formic	30'	
	1.25	Sulphuric Acid	10'*4 + 40'	pH = 2.8 - 3.0
Tanning	7	BCS Powder	10'	
	0.3	Feliderm DP	4 Hrs.	
	50	Water	30'	
Basification	1.3	Sodium Bi Carbonate	15*4	
	0.1	Fungicide	4 Hrs.	Wash / Pile up

Proposed Low Salt Pickling

PROCESS	%	PRODUCT	TIME	REMARKS
Special Acidification	50	Water		
	1	Salt	15'	
	0.5	Decaltal Pic S	30'	
	2.75	Feliderm PFS	4 Hrs.	pH = 4.0 - 4.2
Tanning	3.5	BCS Powder	10'	
	0.5	Feliderm MCS (1:1)	4 Hrs.	pH = 3.8 – 4.2
	50	Water	30'	
Basification	0.5	Sodium Bi Carbonate	15'*2	
	0.1	Fungicide	2 Hrs.	pH = 3.6 – 3.8

Effectiveness of the Green Technology:

It offers a techno-viable process that will reduce the amount of chrome powder used by a tannery by as much as 50

per cent and at the same time, increase the chrome content of the leather. ***A significant benefit of low salt picking process is the presence of a negligible amount of residual chrome in effluent water***. This method also allows for the traditional pickling process to be considerably altered, helping remove significant amount of salt in this part of the leather making process, thereby reducing the TDS content in the final effluent. It also helps in dispensing with the use of sulphuric acid and formic acid. The process enables the production of chrome tanned leather that will pass the boil test directly after an eight to ten-hour process. Moreover, the process can be completed much faster compared to traditional chrome tanning methods. The process starts directly after deliming and incorporates a low, unheated, float system. It functions in mildly acidic condition; therefore, any danger of irreversible acid swelling is eliminated.

Advantages of Low Salt Pickling Tanning:

- ➔ Reduction of TDS in chrome bath
- ➔ High chrome exhaustion in float
- ➔ Increased percentage of Chrome (Cr2O3) in the wet blue
- ➔ Only 40% - 50% of basic chrome powder used in comparison to conventional process
- ➔ Further re-chroming is eliminated
- ➔ Elimination of hazardous and corrosive Sulphuric acid
- ➔ Brilliant wet-blue color
- ➔ Faster tanning process
- ➔ Increased flatness of the wet-blue
- ➔ No drawn mark observed
- ➔ Simplified process for workers
- ➔ Less load on the chrome recovery plant

Ongoing Demonstrations of Low Salt Tanning:

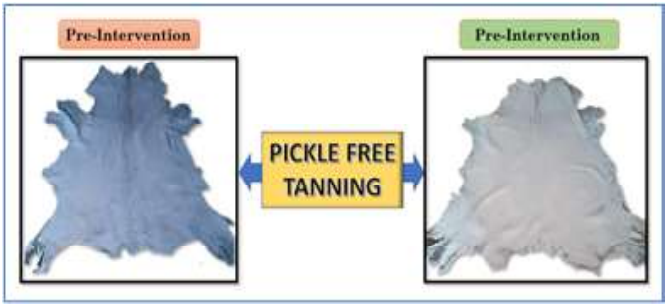
Solidaridad and Stahl have successfully completed three bulk level trials in the Bantala Leather Cluster, Kolkata. Based on the positive response and appreciation from tanners, this intervention will be scaled up to more tanneries in the cluster.

We have established two different articles: White Glove (soft article) & Black Hunter (hard article) from the wet blue to assess the characteristic upgradation. The outcomes have been highly satisfactory and the tanners have shown a great response towards its acceptance with regards to techno-commercial viability and market uptake.

Testing reports on Low Salt Pickling Vs. Traditional Process in a Tannery-A

Tannery – A	Chrome Bath	Wet -Blue
	TDS	Cr Content
Traditional	17500.0 mg/l	3.02%
Low Salt Pickling	13340.0 mg/l	3.87%

This is one of the reports from the trials that was conducted in a tannery of Kolkata Leather Complex. It is clearly observed that by only using low salt tanning process, The TDS of chrome bath can be effortlessly reduced while increasing the chrome content in the final wet-blue .



Conventional Wet Blue Vs. Low Salt pickled Wet Blue

Solidaridad under its European Union funded project continues to strive towards 'eco-friendly and green technology' for leather processing in a techno-commercial way. The use of chrome is inevitable for leather processing however, this low salt tanning will greatly help the tanners in reducing the chrome content in their effluent discharge, which is the need of the hour.

Project Participants feedback:

"Stahl and Solidaridad's claim of reducing TDS, TSS, BOD, and COD in the effluent water discharged stands true. The wet blue after low salt tanning is even better than the conventional wet blue."

Mr. Haider Ali
(Crescent Tannery)

A Thought on Sustainability

Dr. Goutam Mukherjee

Associate Professor, Govt. College of Engg. & Leather Technology, Kolkata

Leather is the oldest fabric used by humans - and still wildly popular. Even today, this multi-billion dollar industry serves a growing demand, despite rising criticism of its severe environmental impact. Leather production contributes to global warming and pollutes water with chemicals and toxins, especially in developing countries, where many leather suppliers are located. As awareness for the negative environmental impact of leather rises, so does consumer demand for environmental proof of how it's made and what the possible alternatives are.

Therefore, leather sourcing may be next in the consciousness revolution, according to Sourcing Journal. But is it even possible for eco-conscious fashion brands to source leather that's produced in an eco-friendly and sustainable way?

Humanity stands on the edge of the abyss. We face huge existential threats now: from the impending collapse of the global currency system, to the risks accompanying the speed and impact of the biotech revolution and the potential near-term release of an artificial super intelligence. The impact of these three alone could make previous world wars look insignificant. We are entering an era in which the potential for just a single human being to destroy us all is growing exponentially. By the end of this decade, it will be possible for a child to create a killer disease in their bedroom. And that brings with it extraordinary challenges. There is no control system in the world that can deal with the impact of the threats ahead of us. If we are to survive and thrive as a human race, there needs to be a revolution of a different kind. Much of our time is spent on working on re-imagining government. However, much of what will truly change the world is beyond that. We need to collectively re-wire our minds to live another way. No government can currently achieve that. These days, we think about change in terms of raising consciousness. We do mean to raise individual awareness of one's own existence, sensations, thought about surroundings. We cannot take on the challenges we face without a step-change in increasing global consciousness and to deal with what lies ahead, we have to understand what lies beneath most problems we face in the world.

From explorations in raising our own level of consciousness in recent years, we are now starting to realize that dealing with personal trauma and pain is the gateway to resolving many of the toughest challenges in the world. It means trauma and pain in a vast range of areas: societal, parental, educational, and situational. So many unintentional and intentional things happen to us every day that take us away from our original, pure selves. And to my mind, in turn, individual pain causes the majority of global problems: poverty, wealth, power, war, crime, addiction, climate change, mental illness and more.

Our continuous explorations have taken me on a journey of discovery, from the Psychedelic Renaissance, through the explosion of alternative healing modalities, to the knowledge of experts currently working at the extreme edges of neuroscience. We are a far better human being as a result of those explorations. We do live and work in hope of humanity shifting rapidly towards a completely different type of existence. Given the risks that we face and the timescale in which they are occurring, there is no choice but to look at a radically different approach to solving all the problems in the world. For me, healing our collective hearts and minds is the key to doing that.

We have to think about how we can heal all pain. We have to think about how to leave no-one behind in that global healing process. Given the potential risks we could face from just one individual, we cannot afford to leave any one individual behind. Our explorations lead to believe that individual

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healing can be scaled globally, and that mechanism is the key to changing the world.

The Environmental Costs of Conventional Leather Production

Today, most hides come from bovines like cows, sheep, and goats. In 2015, the Food and Agriculture Organization estimated that around 3.8 billion cows and other bovine animals were used in leather production each year, which comes down to approximately one animal for every two people on the planet. The rearing of livestock for the meat and leather industry, especially on the extensive scale on which it's done for bovines, has severe environmental impacts. Deforestation, greenhouse gas emissions, as well as water and land overuse, are high contributing factors to climate change. The Higg Materials Sustainability Index (MSI) provides information on the impacts of materials used in the production of apparel, footwear, and home textiles. It gives most leathers an impact of 159 or more, due to its high contribution to global warming, water use, and pollution. As a comparison, synthetic leather shows an impact of 43, cotton a 98, and polyester a 44.

Then there's the tanning process. Tanning turns hide into leather by altering the protein structure of the skin to make it more durable and less susceptible to decomposition. Most tanners still use a process called "chrome tanning" to tan their hides, which includes chromium tanning agents, which produce the highly noxious carcinogenic chromium. This method is faster than others, but the chromium sulfates used are harmful to health and environment. The regulations governing chromium sulfates have closed down tanneries in the US and in Europe - but in developing countries, they often flow straight into local waterways, along with other untreated waste laced with lead, arsenic, and acids.

Sustainable Leather Production

Leather is made of dead animal skin and will therefore never be animal-friendly. And tanning and manufacturing of any kind will always have some sort of environmental impact. However, hides mostly come from animals raised for their meat; they're a byproduct from another industry rather than taking up additional resources. And while vegetable tanning is more expensive and doesn't always yield the necessary softness, it produces more eco-friendly leather. It's important to understand that we are looking at a spectrum. It isn't black or white, ethical or unethical, environmentally friendly or polluting. Instead, leather production falls on a spectrum. Companies striving to be eco-friendly must try to ensure their activities have minimal negative impact by working according to best practices and international standards. But tanning of leather can definitely be more eco-friendly and sustainable than conventional methods allow – Green production, green collection, for example, meets ambitious goals, like chrome-free tanning and solvent-free finishing. It even avoids salt treatments and conserves water by using only the freshest hides. The leather is produced according to European environmental normative, and uses neither pentachlorophenol and / an organochlorine compound nor chlorofluorocarbons.

How can Green Hides guarantee the eco-friendly and sustainable leather production ?

The Key Lies in our Supply Chain. Leather's supply chain is complex; the production is a mostly horizontal process across a myriad of countries and suppliers. Just identifying the animal's origin (was it domesticated or wild?) can be extremely difficult. As an importer, you aren't in control of the leather production stages, unless you own the entire supply chain, which is highly unlikely. Yet many eco-conscious fashion brands make an effort to understand their supply chain and to source from suppliers who obtain and treat their hides in sustainable, eco-friendly ways. But to understand whether you're on the right track, a brand needs to first comprehend the leather supply chain.

Three principal stages of Leather Production

There are three stages of manufacturing leather products :

A. obtaining raw materials,

    1. rearing livestock or catching wild animals
    2. slaughter

B. leather production,

    1. preparing the hides

2. tanning
3. crusting

C. producing finished leather goods.

As we have already mentioned, the first two stages are especially problematic to handle in a sustainable, eco-friendly, and ethical way, but let us take a closer look at them from a supply chain point of view.

The leather industry consists of refining raw skin into leather products. This whole process requires number of complex chemical and mechanical processes. Among all these processes, tanning is the most important process. The leather industry too generates high level of pollution by using chemicals such as biocides, surfactants and wastewater discharge. Several measures to reduce to environmental impact of tanneries have been developed for the leather industry. Some of the important ones are: It is necessary to train the staff for occupational health and safety of workers. Tanneries must develop environmental management system. The workers must be provided masks to avoid inhaling toxic gases. There must be proper drainage system to prevent the formation of hydrogen sulfide in the tannery. The solid waste from the tanneries must not be used for poultry food. Furthermore, there are techniques available to reuse the chrome, discharged in the effluent such as direct recycling of chrome, recycling of chrome after precipitation, etc. Wastewater from the tanneries should be treated at two levels. The first level treatment includes mechanical screening, pH leveling, flocculation, solidification and sedimentation.

The second level treatment requires biological process to remove organic matter from the waste water. Treatment technologies like activated sludge, percolating filter, aerated lagoon, facultative lagoon etc. are available. Activated sludge treatment is a proven and effective technology to treat tannery wastewater and is used all over the world.

Research has shown that numerous chemicals released by the leather industry have harmful effects on the environment. Hence, it is necessary to make efforts to reuse and recycle chemical components.Therefore,further environmental recommendations have been suggested to make leather production environment friendly. Training programs of modern techniques must be provided to all the workers. Safety materials like protective shields, acid resistant gloves, aprons, masks must be made available to each worker. Informative tips for safety, health and environment must be displayed in the tanneries. To conserve water, orderly washing instead of continuous washing method should be used. This will not only save water but also reduce the amount of wastewater treatment. Eco-friendly chemicals like enzymatic products must be used replacing sulfides and surfactants.

With the help of new dyeing technologies, major textile and leather processing countries like China, India and Bangladesh will reduce their water consumption by over 50%. In the path of adopting environmental measures, major apparel and footwear brands and retailers have set a goal of achieving zero discharge of hazardous chemicals (ZDHC) by 2020. This plan has set new standards of environmental performance in textile and leather industry.

The availability of the hides for leather material is affected by environmental factors common to the main producing countries and regions, and depends on :

- Climate change
- Water scarcity
- Environmental pollution
- Raising of the animals
- Nutrition of the animals
- Living conditions of the animals

In addition, there are several human factors that also affect the leather supply chain :

- Human rights
- Effects on local populations – noise, pollution, buying up of land
- Safety and health of the workers

With such a large number of possible external issues that affect stage 1 of your supply chain, it's no surprise that leather is difficult to source in an ethical way.

Consumers are becoming more environmentally conscious and have a lower tolerance for environmental pollution and

unsustainable textile manufacturing practices. If fashion brands want to offer their buyers sustainable and eco-friendly items, their first step is to choose leather from suppliers that meet international environmental compliance laws and standards. For example, Issara, a Melbourne-based brand that sells premium leather bags and accessories, sources their hides from New Zealand, which is renowned for its animal husbandry techniques and has strict animal welfare assurance requirements. The company also produces bags on demand instead of running a mass-production, which minimizes wastage. Let us take a look at a few examples of sustainable leather suppliers from which brands like Issara can source their eco-friendly leathers.

Thought for suppliers of Sustainable and Eco-Friendly Leather

World leaders in the specialty chemistry of coatings, processing and treatments - including leather tanning support the move to zero discharge of hazardous chemicals and pushes for a transparent and sustainable supply chain. Companies are actively trying to replace petrochemicals with renewable resources in compliance with their mission of "Responsible Chemistry".

For example, M/s EcoHides treats their leathers with only the most environmentally friendly, sustainable materials, promising "gorgeous leather hides with amazing durability and eco-friendly style". Another leather supplier who does focus on the environment is M/s. Sørensen. The company strives to fulfill the strictest environmental requirements in the industry. M/s. Sørensen maintains that leather is actually a very sustainable product when produced in environmentally friendly ways.

Then there's Foremost, a manufacturer of synthetic leather that develops a series of high-end eco-friendly synthetic leathers called N□Pelle® since 1985. Foremost is devoted to providing DMF- and cruelty-free vegan leather alternatives, that still look and feel like leather. Who knew we can make leather-like materials from pineapples - from the fibers of pineapple leaves, to be exact. Ananas Anam creates this material, called Piñatex, by extracting the fibers from the leaves. They are turned into a base material to make durable wallets and bags.

As we can see, there are a myriad of suppliers focused on producing sustainable and eco-friendly leather or leather alternatives that environmentally-conscious fashion brands can source their materials from - and they are just the tip of the iceberg.

Leather Supply Chain Awareness

Knowing and understanding every origin and step of every item, fabric, and material in a brand's supply chain, is an effort of Herculean proportions. Supply-Chain management (SCM) software, especially cloud-based, can help your supply chain's transparency - but it's only as good as the information it's fed. An SCM software's main focus lies on optimizing order management, production planning across warehouse locations, and reducing order cycle times, rather than on providing brands with transparency into their suppliers' production processes, materials manufacturing, or working conditions which is where Software companies come into play. It provides a platform for brands to bring more transparency into their supply chain, as well as for end consumers to gain insight into just that supply chain - and for suppliers and manufacturers to offer their eco-friendly and sustainably produced goods to brands.

Compiling Data in One Place

To allow consumers to track their product along its entire supply chain from supplier to vendor, a brand has to amass and compile a ton of data from many different sources: suppliers, manufacturers, logistics service providers, warehouses, and vendors are only the tip of the iceberg.

If, for example, a company received a customer's inquiry about where and how a specific dress is made, it's far easier to let that customer check themselves via a software that accesses the sought-after information from a single database, rather than having to access every one of the company's suppliers' databases individually and getting all that information back to company's client in a clear format. Having all manufacturers and suppliers putting in their data into a single database makes it a lot easier for interested consumers to access the product-specific information they're looking for.

To spin this concept further: A transparency software and linked database used by all parties involved - suppliers, brands,

vendors, logistics providers, consumers - can be user-friendly if set up properly. For example :

- Suppliers can easily input the material and manufacturing specs into the database.
- Brands can search the database for suppliers offering the types of clothing made with the specific criteria they're looking for.
- And consumers can simply scan a QR-code to find out all about a product's supply chain with one tap.

Imagine, for example, a company is looking for a new supplier of regenerative fibers to meet the rising demand for eco-friendly clothing items. If they have a database filled with (and by) fabric suppliers, all they would ideally have to do is search for "regenerative fibers" to generate a list of suppliers - instead of researching and then calling every single potential supplier to ask if they offer what a company is looking for. Sounds deceptively simple, right ? It really is that simple and any brand can benefit from it - including yours.

Managing Information and Data

Obviously, it is great if a database compiles all the relevant data in one accessible, user-friendly platform - but good transparency technology goes beyond that by also organizing and analyzing the data and its efficient flow across entities. Transparency is the step that can only come after information management, opening the collected data up to being published to outside entities. Without proper information management, it would be impossible to provide intuitive, understandable, and accessible transparency. Effective information management in transparency software will especially contribute to the following factors.

Decreasing Complexities

Imagine all the data that accumulates over the entire supply chain of a single shirt / bags, including (but not limited to):

- Methods of growing and harvesting / keeping up of cotton / animals and other materials involved following prescribed humane norms,
- Procedures of turning those materials into fabrics, leathers, buttons, zippers, etc.,
- Processes of making and applying dyes,
- Transportation dates, modes, and locales,
- Methods of sewing and manufacturing items, and
- Wage paid to workers along every step of the way,
- Social security provided to the workers involved,
- Precautions taken towards occupational safety and health hazards,
- Percolation of thought about taking care of recycling of waste product to customers after completion of life cycle of the supplied product to them.

And that is just for a single item.

Wading through all that information manually to sort it into something tangible and applicable for a brand's entire stock is impossible. Supply chains in their entirety are a complex amalgamation of data you couldn't just dump into a consumer's lap, even if you wanted to provide them with every single piece of data. A good transparency software sorts and distills all the data provided, decreasing its complexities into the pertinent information that interests potential buyers, in an easily understandable, manageable way.

Looping Information Gaps

Brands and vendors are aware of certain aspects of their supply chains and already communicate them to consumers. Any fashion brand, for example, can tell you the fiber content and country of origin of any item of clothing they sell, because this is all information required to be shown on a clothing item's tag.

Conclusion :

Transparency, though, goes far beyond fiber content and origin country. Consumers, who care about sustainability, the health and safety of workers, and understanding where their goods come from, want to know more wish to go a ay more. Brands who aim to provide their customers with more have to close the information gaps in their data. Software that provides transparency to suppliers and consumers with a database to hack all that information into, would close those gaps in the most efficient way possible.

LET US ENCHANT FEW UNFORGETTABLE QUOTES :-

"The greatest threat to our planet is the belief that someone else will save it." – **Robert Swan, Author**

"Often when you think you're at the end of something, you're at the beginning of something else." – **Fred Rogers, Television Personality**

"There is no such thing as 'away'. When we throw anything away it must go somewhere." – **Annie Leonard, Proponent of Sustainability**

"When you put the whole picture together, recycling is the right thing to do." – **Pam Shoemaker, Author**

"We cannot solve our problems with the same thinking we used when we created them." – **Albert Einstein, Physicist**

"We do not inherit the Earth from our ancestors; we borrow it from our children." – **Native American Proverb**

"We never know the worth of water till the well is dry." – **Thomas Fuller, Historian**

"Recycling, packaging, businesses are changing all of those things because that's what consumers want." – **Jerry Greenfield, Co-founder of Ben & Jerry's Ice Cream**

"If it can't be reduced, reused, repaired, rebuilt, refurbished, refinished, resold, recycled, or composted, then it should be restricted, designed or removed from production." – **Pete Seeger, Folk Singer & Social Activist**

"We are living on this planet as if we had another one to go to." – **Terry Swearingen, Nurse & Winner of Goldman Environmental Prize in 1997**

"Buy less, choose well." – **Vivienne Westwood, Fashion Designer**

"At its core, the issue of a clean environment is a matter of public health." – **Gina McCarthy, Administrator for the U.S. Environmental Protection Agency**

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INTERNATIONAL UNION OF LEATHER TECHNOLOGISTS AND CHEMISTS SOCIETIES

News Release from the IULTCS

XXXVI IULTCS CONGRESS 2021 – HEIDEMANN LECTURE ANNOUNCEMENT

The XXXVI IULTCS Congress Organizing Committee is extremely pleased to announce that Professor Anthony Dale Covington will deliver the prestigious Heidemann Lecture at the XXXVI IULTCS Congress, that will be held from 03 – 05 November 2021 at Skylight Hotel, Addis Ababa, Ethiopia.

The Heidemann Lecture is a keynote lecture that is held in memory of Professor Dr Eckhardt Heidemann (1925-1999). Heidemann made significant practical contributions to the science of leather manufacture and he held a lifelong interest in the structure and properties of the collagen molecule. It is typical for the Host Society to invite a high-profile guest lecturer to make this keynote presentation of 30– 45 minutes, as the opening lecture of the Scientific Programme.

Professor Covington has a doctorate in physical organic chemistry at Stirling University in Scotland and postdoctoral research in physical chemistry at the University of Newcastle. He was also awarded the world's very first Doctor of Science (DSc) degree in Leather Technology in 2010, by the University of Northampton.

Professor Covington has authored over 300 technical publications, receiving over 2600 citations in scientific literature. Together with co-author Dr Will Wise he published a second edition of his book 'Tanning Chemistry – The Science of Leather' in 2019.

Professor Covington is a former President of the International Union of Leather Technologists and Chemists Societies, who presented him with their Merit Award for Excellence in the Leather Industry in 2009. He received the Alsop Award for Outstanding Scientific Contribution to the Leather Industry from the American Leather Chemists Association in 2011. In alleged retirement, he is currently Chair of Trustees of the Silhouette Youth Theatre of Northampton.

The Organizing Committee is extremely pleased that Professor Covington accepted the invitation to deliver the Heidemann Lecture and share his more than 45 years extensive experience and knowledge in undertaking research and development in leather science.

For further details kindly click on the link : https://iultcs.org/press-release-xxxvi-iultcs-congress-2021-heidemann-lecture-announcement/

(Source : IULTCS Website)

AFRICA'S LARGEST EVENT FOR THE WORLD'S LEATHER INDUSTRY

All-African Leather Fair (AALF) is Africa´s biggest and most important international exhibition & conference dedicated to

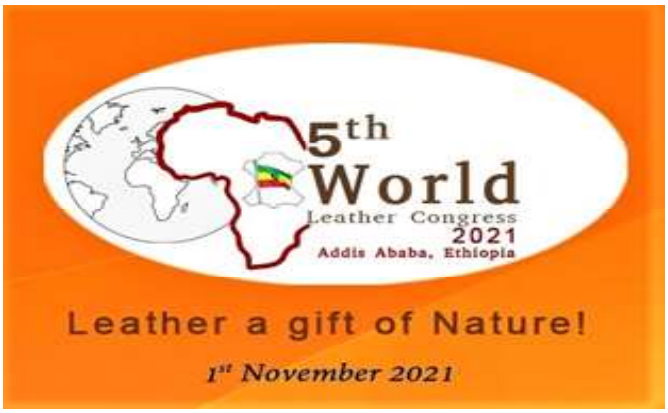
leather, accessories, components, synthetics and models for footwear, leather goods, automotive and furniture. Launched in 2008, it has become the most qualified international exhibition in Africa.

AALF has been characterised by its high leadership in quality and style innovation, which makes it indispensable to the leather demand worldwide.

For further details you may please visit the website : https://aalf-online.com

(Source : IULTCS Website)

XXXVI IULTCS CONGRESS AND 5TH WORLD LEATHER CONGRESS BECOMING HYBRID EVENTS



Africa Leather and Leather Products Institute (ALLPI), in conjunction with the Government of Ethiopia, is excited to announce that the 36th International Union of Leather Technologists and Chemists Societies (IULTCS) Congress, and the 5th World Leather Congress (WLC) are becoming HYBRID events, to offer participants the choice of how they prefer to attend these important international congresses. Both events will be held in Addis Ababa, Ethiopia from 01- 05 November 2021.

With the backdrop of mounting COVID-19 pandemic-related restrictions, the hybrid mode will allow all those who are not able to attend in person, to be able to participate from the comfort of their own workplace or home, from anywhere in the world.

The video recordings from the congresses will also be made available on an online platform for 30 days, to ensure that all the conference registrants can access the presentation materials of speakers, researchers and sponsors without being constrained by time zones and/or internet connectivity problems at the time of the events.

The two Congresses (XXXVI IULTCS and 5th WLC) are expected to leave delegates with great insights and informative actions that delegates could use in their respective institutions and/or enterprises.

Registration for the congresses has commenced and a new registration fee structure for remote registrations is in place – with the ability to 'upgrade' to in person attendance if travel restrictions allow. Abstract submission is open until 31 August 2021 – with the option to submit to present a remote paper, allowing current global research to be shared, even if the presenter cannot be in attendance.

The link : https://www.iultcs2021africa.org/home will provide more information on registration and guidelines for submission of Abstracts.

There are also opportunities to support these high-profile, globally attended events by becoming sponsors, as it is critical to our industry that we continue to share our knowledge, research and best practice – various packages are available to suit all budgets.

Summary Information:

5th World Leather Congress: 01 November 2021
XXXVI IULTCS Congress: 03 – 05 November 2021
Venue: Ethiopian Skylight Hotel, Addis Ababa, Ethiopia
Working Language: English
ALLPI Website: https://www.allpi.int

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(Source : IULTCS Website)

2021 YOUNG LEATHER SCIENTIST GRANT WINNERS ANNOUNCED FEB 2021

Winners of Two 2021 IUR Research Grants Announced

The Executive Committee of the IULTCS is pleased to announce the winners of the 2021 IUR research grants to be awarded to two young scientists, under the age of 35. The monetary awards help support the work of young talent in the leather sector.

This is the seventh year of the grants which have been generously supported by industry and IULTCS alike. The Selection Committee of the IULTCS Research Commission (IUR), chaired by Dr Michael Meyer, is pleased to announce the following recipients:

Young Leather Scientist Grant 2021 Basic Research

Hon Wei Ng, Research Assistant from New Zealand Leather and Shoe Research Association (LASRA), Palmerston North, New Zealand. IULTCS has provided the monetary sponsorship for a single sum of € 1,500 grant to Basic Research. The title of his project is : **"Study on Molecular Level Collagen Structure Changes of Enzymatic Depilation Using X-Ray Scattering".**

Hon Wei Ng's project's main objective is to evaluate the performance of a novel environmental isolate for enzymatic depilation of skin/hide for leather manufacturing. The study also aims to use small-angle X-ray scattering to elucidate molecular level structural features changes of collagen caused enzymatic depilation compared to a conventional unhairing process.

Professor Mike Redwood Young Leather Scientist Grant 2021 Sustainability / Environmental Award

Caroline Borges Agustini from the Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil, will be the beneficiary of the generosity of Leather Naturally who have sponsored the €1,000 grant for the project entitled : **"Hydrocarbon Release During the Biodegradation of Solid Waste from Tanneries for BIOGAS Production".**

The objective of this project is to investigate the evolution of the hydrocarbon release, the energy efficiency and the efficiency of the treatment of the waste of the anaerobic digestion of the solid waste of tanneries. The originality of this study is gaining the innovation of how chemical, physical and environmental parameters work is an important step in improving the efficiency and process stability of anaerobic digesters to be able to adjust in which step of the batch process the continuous process must be designed and which pre-treatments are most suitable to increase the carbon depletion of the waste.

Chemistry of Fluorescence and Phosphorescence

Dr. Buddhadeb Chattopadhyay

Former Principal of the Government College of Engineering and Leather Technology Salt Lake. Kolkata and MCKV Institute of Engineering, Liluah Howrah.

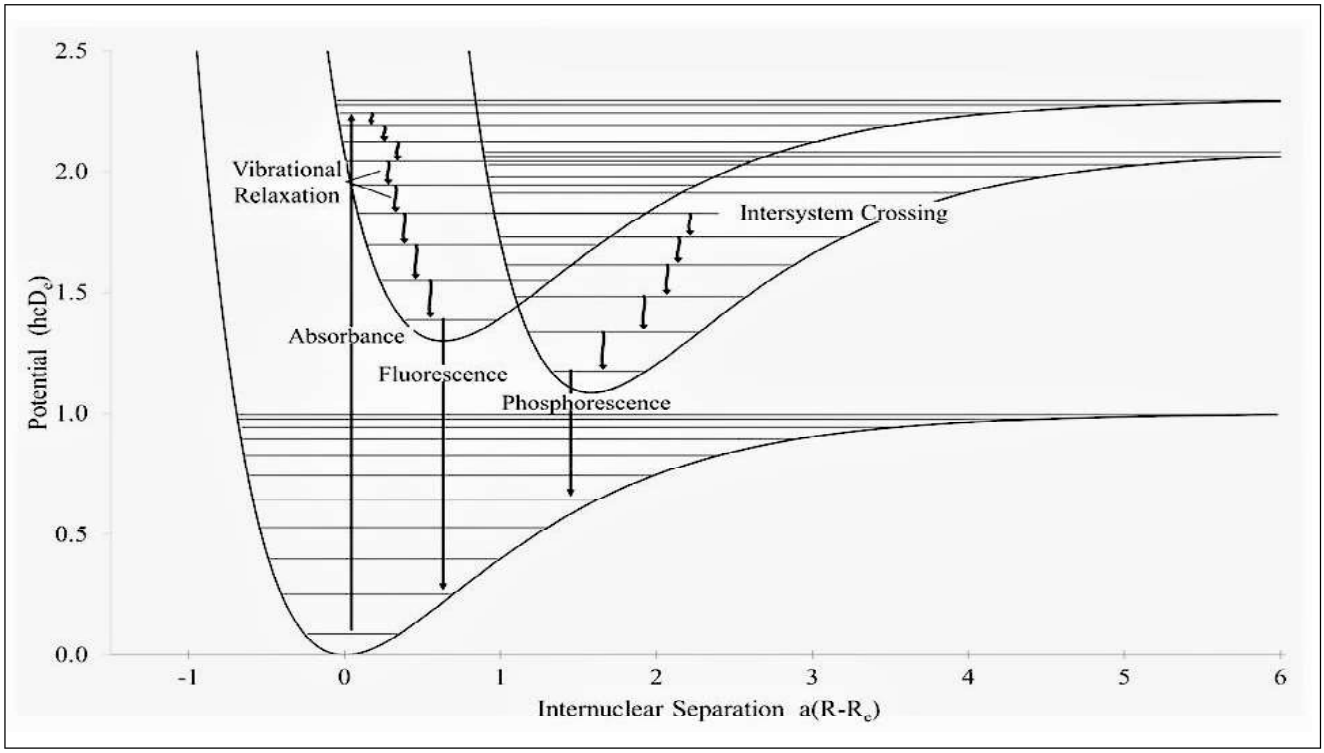
In a nutshell, by absorbing external electromagnetic radiation, a molecule jumps from ground singlet state to excited singlet state if, the energy difference matches exactly with the quantized energy contained in supplied EM radiation. This happens because of vibration coupled electronic transition, called vibronic transition. Lifetime in excited state is 10^-8s. So the excited molecule is unstable.

In this state some molecules of rigid structure collides with each other and comes down to lower quantized vibrational state (in the excited state) by energy cascading, called vibrational relaxation; which is a radiation less process.

From the lowest vibrational excited singlet energy state the molecules return to the ground state by emitting EM radiation. Since the energy absorption for vibronic transition is more than the energy for emission, therefore, shorter wavelength of EM radiation is absorbed, while longer wavelength radiation is emitted. This is the basic of fluorescence radiation emission.

Jablonski diagram

Fluorescence is generally observed in those molecules having rigid framework and having not many loosely coupled substituents through which the vibrational energy can flow out. –I groups tends to diminish or completely inhibit fluorescence, conversely +I groups enhances. For example aniline (having +I group in benzene) is 40 times more fluorescent than benzene, while benzoic acid (having –I group in benzene) is non-fluorescent. Though have very similar structure except one extra fused ring; phenolphthalein is non-fluorescent, while fluorescein is fluorescent – a classic example how rigidity in the molecular structure influences fluorescence. Napthalene and Vitamin A has same five number of Pi bonds. But because



of rigidity, naphthalene is five times more fluorescent than Vitamin A. Similarly azobenzene is non-fluorescent, whereas diazaphenanthrene is capable of fluorescence.

Fluorescent dyes/pigments are also used in leather finishing for enhancing brightness of the colour in order to make the colour of the product more vivid and attractive.

While on the other hand, if, the excited singlet state and excited triplet state of the molecules have a low gap of energies, the molecules can get transferred from excited singlet to excited triplet state by inter-system crossing to be metastable (lifetime increases by 10^2X.). This S* to T* transition is also radiation-less, but forbidden transition (in violation of selection rule). It also undergoes vibrational relaxation. Now the excited molecule returns to the ground state from the lowest vibrational excited triplet state by emitting quantized EM radiation of higher wavelength as compared to the wavelength of absorption. So there is a delayed emission, because the molecules enjoy happily sometime in quasi-stable excited triplet state. This emission is also forbidden by selection rule. This is called phosphorescence.

Intersystem-crossing efficiency also leads to promote photochemical sensitization efficiency in photochemical reaction. But that's another story beyond scope of this paper.

Fluorescence emission won't be visible in absence of incident light (in dark), while, phosphorence would be. Compare between traffic symbols at night (fluorescence) as compared to fire flies in dark (phosphorescence). Schematic representation has shown the difference between the two photochemical process in the diagram, called Jablonski diagram.

However resemblance it sounds to be, phosphorescence has no connection with phosphorus.

TAMIL NADU LEATHER BENEFITS FROM REASONABLE LOCKDOWN

A well-planned lockdown with reasonable restrictions and relaxations seems to have protected India's leather industries from complete failure, as exporters are getting through the hard times with only minimal production losses.

"Long term damage to the industry was avoided because of the way the lockdown restrictions were enforced. Except for a week of total lockdown, we managed to operate the units with the permitted number of heads," said M Israr Ahmed, regional chairman (south), Council for Leather Exports (CLE).

Unlike the first wave of the pandemic, the exporters continued to receive orders from overseas clients and managed to fulfil the supply commitments, though with a delay of two to three weeks. "We could manage to serve our clients by sending consignments as we were allowed to operate with certain number of workers. Customers accepted when we sought two to three weeks' time to supply," he noted.

When there was a week's total lockdown, the leather goods manufacturing units suffered a 100% production loss. However, the operations resumed with the stipulated number of workers. Large companies engaged in exports hired transport vehicles to ferry workers up and down by following norms.

Exporters were at first under pressure when the total lockdown was announced. However, they found the going easy because of the leeway offered to industrial activities.

"The peak period is from May to July. The industry was very much willing to cooperate with the lockdown norms because we were allowed to operate with conditions," Israr Ahmed said. From last week, the leather exporters have been permitted to operate with a full capacity workforce. Tamil Nadu is a leading contributor to India's leather exports.

(International Leather Maker – 14/07/2021)

HUGE POTENTIAL IN NIGERIAN LEATHER INDUSTRY

Nigeria is one of the highest producers of leather and finished leather products in Africa; a study carried out by the Nigerian Economic Summit Group (NESG) projected that the Nigerian leather industry has the potential to generate over 1 billion dollars by 2025. The leather value chain is extensive; it includes animal husbandry, tanneries, finished leather products and leather products marketing.

Nigeria's leather and leather products industry currently employs over 750,000 workers with about 500,000 workers in the finished leather goods sector. To date, however, exports are in the order of 272 million dollars; today, Nigeria's semi-finished and finished leather have their highest patronage in Italy, Spain, India, South Asia and China.

Shoes, belts, bags and folders are largely traded in West Africa and many parts of Africa. Anecdotal evidence suggests that the famous Aba shoe cluster in Abia, informally exports almost a million pairs of shoes weekly mostly to destinations within Africa.

According to Osinbajo, there is clearly an enormous potential for greater job opportunities and much higher export proceeds. He also said that the NESG projection also indicated that the Nigerian leather industry had the potential to increase its earnings by 70% by 2025.

"By optimising the value chain, the sector will provide employment, improve our foreign exchange earnings and boost growth," he said.

The vice president also announced that the Nigerian Institute of Leather Science and Technology (NILEST), the arrowhead of the plan, had established nine extension centres across the six geo-political zones of Nigeria.

Earlier in a keynote address, Dr Ogbonnaya Onu, the Minister of Science and Technology, said the plan would help the effective and efficient exploitation of Nigeria's natural resources. Onu said that the plan would make the country self-reliant, enhance earning of foreign exchange as well as creating jobs and wealth.

(International Leather Maker – 23/07/2021)

LEATHER EXPORTS JUMP TO $641.72 MN IN APR-MAY 2021: INDUSTRY BODY

Stressing on the importance of digitisation, Council for Leather Exports' new chairman Sanjay Leekha said the pandemic has ushered in or rather intensified the digital era.

The country's export of leather, its products and footwear has jumped to USD 641.72 million in April-May 2021 from USD 146.79 million in the corresponding period last year, the Council for Leather Exports (CLE) said on Sunday.

The CLE, the apex trade promotion organisation of the leather & leather products industry, also said that there is an expectation that this growth trend would continue in the coming months.

CLE's newly elected chairman Sanjay Leekha said that after a prolonged period of market slowdown caused by the Covid 19 pandemic, which led to 27.72 per cent decline in the exports during 2020-21, the sector is back on the growth track with the outbound shipments showing impressive resurgence during the current fiscal so far.

"As per latest data, export of leather, leather products and footwear increased from USD 146.79 million in April-May 2020 to USD 641.72 million in April-May 2021. This is a very good beginning for us, which we hope to sustain in the coming months, as India is viewed as a favourite sourcing and investment destination," he said in a statement.

Leekha, Managing Director of Alpine Apparels Pvt Ltd, Faridabad took charge as Chairman of the council on June 17. Stressing on the importance of digitisation, he said the pandemic has ushered in or rather intensified the digital era.

"With increasing prominence of e-commerce platforms and also virtual exhibitions, we must ensure optimum utilisation of the various available digital modes to gain further market access," he added.

The chairman informed that the council has organised 12 virtual buyer-seller meets/ B2B events during 2020-21 in more than 17 countries and has planned about 20 events which include participation in international exhibitions, buyer-seller meets and one designer's fair.

Besides, the CLE plans to organise virtual meets and webinars in the US, Israel, Guatemala and Germany in co-ordination with Indian Missions concerned.

Further, he added that the Indian Footwear and Accessories Development Programme (IFLADP) implemented by the Department for Promotion of Industry and Internal Trade (DPIIT) during 2017-21 has played a vital role in modernisation and technological up-gradation of production units and skilling of workforce.

"We have requested the government to continue this IFLADP scheme, which is under consideration. We already have the inherent strengths of traditional knowledge and strong raw material base," he said.

With the support of the government, concerted efforts have been taken in the past years to substantially increase our production capabilities and common infrastructure like design studios, and testing laboratories, which has helped in becoming a leading exporter of high-quality value-added products, he said.

(https://www.livemint.com/ - 30/06/2021)

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A STUDY OF THE SOLUBLE AND INSOLUBLE SALTS IN SOME VEGETABLE TANNING MATERIALS.

PART—VIII

N. N. Guha

(Continued from June issue)

Determination of Specific Cations:

(A) Calcium and magnesium by E D T A method.

(i) Calcium determination :

It is possible to distinguish between Calcium and magnesium by employing a Calcium hardness indicator tablet (B. D. H). This indicator gives a red colour in the presence of Calcium ions but not magnesium. The end point however is sharper if the titration is carried out in strong alkaline solution in which the magnesium is precipitated.

Method :

A Suitable quantity of tanning material or extract or residual material was ashed, sulphated and dissolved as usual and made up to a certain volume. An aliquot of the sample was pipetted into a white porcelain dish and 1 ml. of 4N NaOH was added. One Calcium hardness indicator tablet was added, broken up and dissolved. The solution was titrated with $\frac{N}{50}$ E D T A Solution until a violet colour was obtained. The calcium content was then calculated from the hardness equivalent of the E D T A solution and was expressed as mgm. equiv. per 100 gm. material.

(ii) Calcium plus magnesium determination :

The indicator Eriochrome Black T gives a red colour in the presence of calcium or magnesium ions. Total hardness indicator tablet (B. D. H) may also be used for the purpose but the former generally gives a sharper endpoint.

An aliquot of the solution (Containing Ca and Mg) is titrated in the presence of the indicator with a standard E D T A solution. This substance forms a complex ion with the Ca or Mg, sequestering these ions. The indicator returns to its original blue Colour at the endpoint when all the Ca and Mg has been sequestered. It is necessary to carry out the titration in alkaline solution, hence a buffer solution is employed. The colour change requires some experience to detect and is sharper if Mg is present.

Method :

Unless Mg was known to be present, 10 ml. of distilled water, 1 ml. of buffer

solution and 5 drops of 1% $MgCl_2$ solution were taken in a porcelain dish. 5 drops of Eriochrome Black T indicator solution was then added and the solution was titrated with $\frac{N}{50}$ EDTA solution until the pink colour disappeared and clear blue solution remained. The burette reading was noted and the actual titration commenced after the addition of an aliquot of the sample. The solution was stirred frequently and a time lag of about 10 seconds allowed near the endpoint before the next drop of $\frac{N}{50}$ EDTA was added. Ca plus Mg content was calculated from the hardness equivalent of the EDTA Solution.

The Mg content was obtained by subtracting the Ca figure from Ca plus Mg figure of the sample Mg content was then calculated as mgm. equiv. per 100 gm. material.

Reagents :

(a) Indicator

1 gm. of Eriochrome Black T is added to a solution containing 1 ml. of $\frac{N}{1}$ Na_2CO_3 and 30 ml. of distilled water. The solution is made up to 100 ml. with isopropyl alcohol. The indicator solution should not be more than a few weeks old. The Ca, Mg, Na, & K figures for some tanning materials, extracts and spent materials will be given later on.

Determination of Iron Copper and Aluminium

Preparation of solution

(5-10) gm of tanning materials were reduced to ash in a platinum dish at a low temperature against fusion of the ash where excessive alkali salts were present, and avoided any loss of Copper. A very dull red heat (below 500°C) was the maximum temp. necessary.

It was desirable to obtain an ash free from any carbonaceous particles, and where this was at all difficult, without recourse to excessive heating, the ash was cooled, moistened with a few drops of distilled water, dried and then reheated. The remaining carbon particle s were thus readily oxidised. This treatment also reduced the bulk or volume of the ash.

In some difficult cases, e.g. mangrove or myrabolam, the ash containing residual carbon particles was washed with about 10 ml. distilled water, the aqueous solution filtered through a small filter paper and the residue were returned to the dish and the igvition contained at a low temperature until a "pure" ash was obtained. (The filtrate was subsequently added to the main solution of the ash.)

The ash was treated with about 1 ml. 1:1 iron free HCl and evaporated to dryness on a waterbath. The residue was redissolved in 2-3 ml. 1:1 HCl, warming

if necessary to obtain complete solution, transferred to a small beaker, using 25-30 ml. distilled water. The previously obtained aqueous filtrate was now added.

The solution was heated first to boiling point and the iron (and any alumina) precipitated by the addition of a slight excess of ammonia (1:1). Precipitation was completed by warming on a steam bath for 1—½ hrs. The ppt. of iron and aluminium hydroxides was filtered and washed with warm distilled water containing a little ammonia. The filtrate was used for the determination of copper while the ppt. could be redissolved in HCl and used for iron and aluminium determination.

Iron determination :

The ppt. was redissolved with 5 ml. 1:1 HCl and made up to 100 ml. in a graduated flask.

In one of a pair of Nessler glasses, an amount of test solution was pipetted sufficient to give a colour within the limits of 2-4 ml. of standard iron solution. 5 ml. of 1:1 HCl was added and diluted to 40-50 ml. with distilled water. Then 5 ml. of 40% KCNS solution was added and the level of the liquid was adjusted to the 50 ml. mark.

To the other Nessler glass, 5 ml. of 40% KCNS solution was added and diluted to 40 ml. with distilled water. Then 5 ml. 1:1 HCl was added and the solution was titrated with standard iron solution until a colour match was obtained, the final volume being approximately 50 ml.

Standard iron solution :

The solution was prepared by dissolving 0.8634 gm. of Ferrous ammonium Sulphate (A.R) in a little distilled water and oxidising by evaporation to dryness after adding 1-2 ml. conc. iron free nitric acid. The residue was dissolved in 10 ml. 1:1 HCl and made up to 1 litre. This stock solution was diluted ten times just before use as required, being kept in the more concectrated form.

For the diluted solution ready for use,
1 ml. ≡ 0·00001 gm. Fe.

The following precautions were taken in the determination :-

1) Platinum dishes were used as Porcelain or silica are much inferior.
2) Temp. Control during ashing was very important indeed. High temp. would not allow for the easy solution of the iron in the ash.
3) In the Nessler glass, the HCl was added to the test solution to prevent hydrolysis on further dilution.
4) The final strength of the acid in the Nessler glasses did not exceed 1 N HCl.
5) The KCNS was not less than the equivalent of 5 ml. of 40% solution per ml. Nessler glasses.

6) If after preliminary titration, the amount of standard iron solution required was outside the limits of 2-4 ml., another estimation was made (using a sufficient amount of test solution) to bring the titration within the limit.

Copper determination :-

Reagents required

(i) 4% solution of tetra sodium pyrophosphate.

(ii) 1% solution of gum arabic.

(iii) 0·2% solution of sodium diethyl dithio carbamate.

(iv) Standard solution of copper prepared by dissolving 0.3928 gm. $CuSO_4$, 5 H_2O (A.R) in 1,000 ml. distilled water containing a few drops of H_2SO_4.

This is diluted ten times as required.

(1 ml. ≡ 0·00001 gm. Cu.)

The filtrate containing the copper was heated until the free ammonia was expelled, cooled and made up to 100 ml. An aliquot part, usually 10 ml. was put in to a 50 ml. Nessler tube, together with 10 ml. of 4% tetra sodium Pyrophosphate solution (to sequester Mn, Ca and Mg salts) and 5 ml. of gum arabic solution (to prevent any separation of the coloured copper complex). After carefully shaking, 5 ml. of 0·2% solution of Sodium diethyl dithio Carbamate was added and the volume made upto 50 ml. with distilled water.

The yellow colour was now matched with another Nessler tube containing 10 ml. of tetra Sodium pyrophosphate, 5 ml. of gum arabic 5 ml. Sodium diethyl dithio carbamate and water almost upto the 50 ml. mark, and the addition of the standard copper solution from a burette until the tints were the same when viewed vertically down the depths of the solutions, the tubes being held over a white surface. The volume of standard copper solution required should not exceed 5 ml., obviously too small a titration figure should be avoided also if possible. In the present work, the copper contents were all small and very low titration figures of 1 ml. or less were obtained even with the maximum aliquot possible in this procedure. It was thought however that the results would be accurate enough for the present purpose.

Determination of Aluminium :-

The precipitates which were obtained by adding ammonia to the acid solution of the ashes of the various materials also contained aluminium. A colorimetric method was used to determine the aluminium content of the raw tanning materials and spent products. Results were obtained for the extracts by difference.

The method was that recommended in the Unicam method sheet no. 20 which is based on the procedure given by Chenery (1). It depends on the formation of a red aluminium—aluminom lake and interference by iron is inhibited by this glycollic acid.

Reagents:–

1. Aluminom reagent:–

0·75 gm. ammonium tricarboxylate, 15 gm. gum acacia and 200 gm. ammonium acetate (A.R) were dissolved separately in glass distilled water. After mixing, 189 ml. of conc. HCl (A.R) were added and the solution made upto 1500 ml.

After a few days, a small amount of insoluble material was found in the reagent but this did not appear to interfere with the determination.

2. Thio glycollic acid :–

1 ml. made upto 100 ml. with glass distilled water. Standard aluminium sulphate solutions were prepared by suitable dilutions of a stock solution (B. D. H) which contained 50r Al per ml. This stock solution contained an unknown amount of free acid.

Three standards were prepared containing 2·5, 5 and 10r Al per ml.

In the preliminary experiments, difficulty was experienced due to high and erratic blanks and erratic readings for the unknown solutions. The blanks were not lowered when triple distilled water was used in the reagents and there was no appreciable difference when glass distilled 6 N hydrochloric acid was substituted for the A. R. HCl. In later runs, the blanks were still rather high, but more reproducible. The optical densities of the sample solutions also were satisfactorily reproducible in the procedure finally adopted.

In order to obtain as reliable and comparative results as possible, all the samples were analysed simultaneously. In addition it was thought that the pH of the sample might affect the results. Hence all the sample solutions were neutralised with sodium hydroxide solution until a permanent precipitate was obtained. Dilute HCl was then added until the ppt. just dissolved. The solutions were finally made upto known volumes. One ml. of the final solutions when mixed with one ml. of the aluminom reagent gave a pH value of 3·4 to 3·5 whereas aluminium standard solution/aluminom mixture had a pH of 3·5.

Sandell (2) states that the pH must be the same in the sample solution as in the standards.

The sample solutions were the same as those which had been used for the colorimetric titration of iron.

The final procedure was as follows :-

1 ml. of the "neutralised" sample solution was placed in a test tube graduated to 10 ml. 0·2 ml. of the thioglycollic acid solution was added followed by 1 ml. of the aluminom reagent. The solution was made upto 5 ml. with distilled water. Each sample was analysed in triplicate (single ashing) and three aluminium standards and three reagent blanks (distilled water) were carried through simultaneously. Two racks containing 42 tubes were placed in a boiling water bath, for 4 minutes After removal from the water bath, the tubes were allowed to cool slowly. After 1½ hours, the solutions were made upto 10 ml. and after mixing the optical densities were read in the Unicam SP 500 spectrophotometear at 520 m/u. The solutions were read against distilled water using 1 cm. Cells.

The effect of Sulphating on iron and aluminium Oxides :–

The purpose of the experiments was to examine whether iron and aluminium could be determined quantitatively by the sulphated ash procedure.

Small weighed quantities of ferric ammonium sulphate (A. R) and aluminium sulphate (A.R. ovendried) were taken in platinum dishes, ignited, sulphated twice and extracted with hot distilled water. Any insoluble residue was filtered off and the resulting filtrate and washings were acidified with HCl and treated with $BaCl_2$ solution. The weight of $BaSO_4$ was obtained in the usual way and the residue was ignited and weighed as Fe_2O_3 or Al_2O_3. The results are given below :-

TABLE—I

Weight of Fe & Al taken	215·8 mgm, Ferric ammonium & sulphate	1·34 mgm. equiv Fe	158·5 mgm. Aluminium sulphate	2·78 mgm, equiv, Al.
Fe and Al recovered as $BaSO_4$	35·0 mgm. $BaSO_4$	0·3 mgm. equiv. Fe	222·0 mgm. $BaSO_4$	1·90 mgm. equiv. Al
Fe and Al recovered as insoluble residue after sulphating	28·0 mgm. Fe_2O_3	1·03 mgm. equiv. Fe	13·0 mgm. Al_2O_3	0·75 mgm. equiv. Al

It is obvious from this experiment that a large portion of iron and aluminium is left insoluble after sulphating by reconversion to the oxide when the ignition following treatment with H_2SO_4 is carried out. In this particular experiment, more than three quarters of the iron was not recovered as $BaSO_4$ whereas about a quarter of the aluminium was lost. Obviously one would expect these proportions to vary from experiment to experiment with small variations in the ignition conditions, particularly the temperature.

Possibly one could reduce the ignition temperature considerably for the removal of H_2SO_4 but there might then be some risk of excess acid remaining which would give high results for the final salt figure.

TABLE—2

Iron content in tanning materials and spent products.

mgm. equiv./100 gm. Original material (air dry).

Material	In original material	In spent material	In extract (By difference)
Mimosa	1·2	1·1	0·1
Sumac	5·7	4·5	0·83*
Chestnut	0·56	0·34	0·22
Myrabolam	3·3	2·6	0·7
Valonia	2·0	2·2	nil

TABLE—3

Iron Content

Material	% on original material (air dry)	Spent material		Extract/by difference	
		% on dry spent material	mgm. equiv./100 gm. dry spent material	% on extractable solids	mgm. eq. 100 gm. extractable solids.
Mimosa	0·021	0·045	2·4	0·004	0·23
Sumac	0·108	0·165	8·9	0·04*	2·2*
Chestnut	0·010	0·008	0·46	0·02	1·1
Myrabolam	0·063	0·191	10·3	0·032	1·07
Valonia	0·039	0·085	4·6	Nil	Nil

TABLE—4

Copper content in tanning materials.

Material	gm./100 gm. tanning Material (air dry)
Mimosa	0·002
Sumac	0·0002
Chestnut	0·001
Myrabolam	0·0008
Valonia	0·0004

*The result was found by direct determination on extract.

From tables 2 and 3, it is seen that most of the iron was found in the spent products thus showing that they are not easily extractable.

Table 4 shows the copper content of different tanning materials and as these were so low, the extract and spent products were not analysed for this metal.

The figures however seen to confirm at the appreciable amounts of copper in extracts, which has been mentioned in the literature has probably arisen during the extraction process.

TABLE—5

Percentage of Aluminium in the samples.

Raw Material		Spent products		Extracts (By difference)	
		% on raw material	% on spent product (air dry)	% on raw material	% on extract (air dry)
Mimosa	0·017	0·015	0·030	0·002	0·004
Sumac	0·049*	0·076*	0·143	?	?
Chestnut	0·008	0·008	0·010	nil	nil
Myrabolam	0·060	0·028	0·084	0·032	0 047
Valonia	0·066	0·039	0·073	0·027	0·065

*[Obviously some error has occured in one of the determinations on sumac. It is possible that the error occured during the ashing of the raw material and the aluminium content of the latter is probably appreciably higher than the result given above.]

It seems likely that the figures given in the present work for iron, aluminium and possibly copper are all too low. There is a strong possibility that the acid-insoluble residue in the ash retained part of the heavy metals. Sandell ([3]) gives a table showing that 20—60% of the total iron and aluminium present in hay or straw containing 0·4—4% SiO_2 may be retained by the insoluble residue even after treatment with dilute hydrochloric acid.

There seems little doubt that the main errors in these determinations are due for one reason or other to the dry ashing procedure. There is some difficulty in ensuring that all the salts in the original organic material are recovered quantitatively in the final solution. Many of these errors, and certainly those due to the presence of silica, may be avoided by using a wet oxidation procedure. The SiO_2 for instance can be more completely dehydrated by this method and at the same time difficulties due to partially volatile metals may be overcome.

Colorimetric method for the determination of sodium :

In the present study, sodium in tanning materials was determined by flame photometer method. An alternate procedure for its determination was attempted to check up some results. The method was not found to be much accurate but with some modifications, may be used for analysis of tanning materials.

The method used was that recommended in the Unicam method sheet no. 3 for sodium in waters and biological fluids, based on the procedure of Albanese and Lein ([3]). The method requires a fairly concentrated solution of sodium. This was obtained by ashing (followed by sulphation) 2 gms. of tanning material, and making upto 250 ml. A 50 ml. aliquot was evaporated and the residue redissolved in 2 ml. of glass distilled water. 0·2 ml. aliquots were taken in triplicate for the determination. 1 ml. of Uranyl zinc acetate reagent (made up as described in the above method sheet) was added to the sodium solution in a 10 ml. centrifuge tube. After standing 1 hour at 4°C and centrifuging 10 minutes, the tubes were drained by inversion and the residue of uranyl zinc sodium acetate was washed with 2 ml. 64 O. P. alcohol, centrifuged and drained and finally dissolved in 5 ml. of glass distilled water. The optical density of the yellow solution was measured at 429 m/u A standard containing 0·3389 gm. sodium chloride in 100 ml. water was run in triplicate at the same time as the unknown together with two reagent blanks.

Rather variable results were obtained for triplicates but the average results for both standard and unknown determined on two separate occasions agreed very well. A standard curve was not prepared but the amount of unknown solution which was taken was such that the optical density was very close to that of the standard.

(To be continued)

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"A STUDY OF THE SOLUBLE AND INSOLUBLE SALTS IN SOME VEGETABLE TANNING MATERIALS".

PART—IX

N. N. Guha

Possible practical aspects of extraction conditions

It has already been pointed out that several aspects concerned with the occurence of acids and salts in vegetable tanning materials have been rather overlooked, No work however seems to have been reported on the possible variations of acid and salt contents and salt/acid ratio brought about by different commercial extraction procedures. If such variations occur, they might help to explain differences in tanning properties of the different extracts. In the present study, extraction of tanning materials were done by three different ways (on laboratory scale).

TABLE—1

Acids extracted by Procter, small scale soxhlet and large scale soxhlet extractions :-

Mgm. equiv. /100 gm. original material (air dry)

Material	Procter method		Small scale soxhlet extraction		Large Scale soxhlet extraction	
	To pH 5.8	To pH 6.5	To pH 5.8 (Ist extract only)	To pH 6.5 (Ist & 2nd extract)	To pH 5 8	To pH 6.5
Mimosa	3.7	6.0	4.0	7.1	12	14
Sumac	34	42	35	45	59	65
Chestnut	11	15	16	19	23	28
Myrabolam	74	86	79	92	136	154
Valonia	31	44	34	49	28	38

TABLE—2

Acids extracted by Procter, small scale soxhlet and large scale soxhlet extractions

Mgm. equiv. /100 gm. extractable solids

Material	Procter method		Small scale soxhlet extraction		Large scale soxhlet extraction	
	To pH 5·8	To pH 6·5	To pH 5·8 (Ist extract only)	To pH 6·5 (Ist & 2nd extract,	To pH 5·8	To pH 6·5
Mimosa	8.6	13	8.7	14	27	33
Sumac	76	95	65	84	156	172
Chestnut	86	112	70	84	118	143
Myrabolam	116	136	110	129	210	238
Valonia	68	97	70	101	71	97

Table I and 2 show the extent of acid extraction by the three methods adopted in the present study.

The general reproducibility of the determination of acidity in the Procter extracts was found to be rather better that for the salts. This is probably due to the fact that the salt contents were calculated from difference figures and also the latter were much smaller than the titration values for the acidity.

In the small scale soxhlet extract, only one sample of material was extracted in each case. From 100 ml. of the first extract collected, 10 or 20 ml. were taken in duplicate and diluted conveniently so as to give roughly the same dilution as in the procter extract.

The figures given in the tables for acid to pH 6.5 are the sum of the results for first and second extracts. The highest amount of acid removed in the second extract was only equivalent to about 0.5 mgm. equiv. per 100 gm. material and therefore none of the materials were extracted for a third time for acid.

The acids extracted by the Procter and small scale soxhlet extraction methods were nearly equal. The small scale soxhlet extraction gave slightly higher results for thc absolute amount of acid (given in table I) than the procter method.

The greatest difference was found for chestnut, repeating the experience of the soluble salts, although it was rather less marked. Again, as for the salts the method of expression of results affects the comparison of the extraction procedures to a large extent. Because of the greater amount of extractable solids removed from chestnut in the small scale soxhlet experiments, the corresponding figures expressed on this basis in table - 2 are lower than the Procter figures.

The amount of acids extracted by the large scale soxhlet method were much larger compared with the other two methods of extraction except for valonia. It may be mentioned here that in the large scale soxhlet experiments, the materials were extracted for 30-40 hours' period.

Only small variations, except for chestnut, were found for removal of salts by the three procedures. Therefore, it is rather unlikely that very large differences in the acid figures would be found, if the only factor were the removal of substances containing free acid groups in the original material. It is far more likely that hydrolysis of combined carboxyl groups has occured during the long period in which the excract was heated in the large scale soxhlet extractions.

Valonia is the only exceptional material as regards extraction of acidity as there are only small differences between the different extracts. Apparently therefore, hydrolytic changes do not occur in the extracts of valonia under the conditions used here.

As the salt figures are generally close for the three extraction methods (as reported in part VII of the series), it follows that the salt/acid ratio will show a great variation in several cases. These ratios were calculated using figures for salts obtained by the resin column method for the Procter and large scale soxhlet extracts. For the small scale soxhlet extracts, the results obtained by the $BaCl_2$ method were used. In every case, the acidity figures employed were those to pH 6.5 given in table I.

The ratios are given below :-

TABLE—3

Salt/Acid ratio

Material	Procter extract	Small scale soxhlet extract.	Large scale soxhlet extract
Mimosa	3.1	2.5	1.6
Sumac	0.97	0.88	0.61
Chestnut	0.22	0.31	0.26
Myrabolam	0.45	0.47	0.29
Valonia	0.79	0.76	0.94

The variations in the ratios are quite large and one would rather expect that significant differences in tanning properties among the extracts might be found. The large scale soxhlet extract of sumac for instance would probably be less mellow in its action that a sumac extract of a higher salt/acid ratio as was obtained by the Procter procedure. The mimosa large scale soxhlet extract has an unusually low salt/acid ratio for a catechol material and this could increase its astringency.

Probably there are several other ways in which extracts of a given tanning material might be obtained showing unusual salt/acid ratios for that material. A preliminary investigation was carried out by the author using successive extractions of the tanning materials with a small ratio of water to tanning material. This type of leaching was found to give extracts of different salt/acid ratio as was found in the more exhaustive extractions which have already been discussed. Further work along these lines and perhaps paying particular attention to the temperature of extraction, in view of the hydrolysis effect discussed previously, might be worthwhile. Extracts obtained in such an investigation could be used in tanning experiments, after concentrating where necessary, to test the effects of this "natural" variation in salt/acid ratio. It is worth noting that the effects on the salt/acid ratio obtained by controlled extraction conditions, would probably be quite different from those obtained by the adjustment of the ratio after extraction by adding

commercial acids or salts. Thus it is at least feasible that the extraction or leaching procedure offers an additional way of modifying the tanning properties of any given material.

This kind of approach was available to most tanners when leaching in the tannery was extensively employed, before the development of extract manufacture. It might now be worth reconsidering the older type of leaching process in relation to our increased knowledge of the factors governing vegetable tanning.

Roux (1) has studied the differential extraction of mimosa with successive hot and cold water treatments but the effects on the salt/acid ratio were not determined. This worker considers that a differential extraction at least with mimosa, is worthly of commercial investigation. He quotes some earlier studies due to Woodhead (2) who obtained pronounced differences in tanning quality for hot and cold extracts of mimosa. Woodhead found that the cold leaching gave more mellow extracts than hot leaching and commercial extracts exhibited properties intermediate between the two.

From the present work it would appear quite definite that the various extracts obtained by Woodhead would have quite different acid and salt contents, and salt/acid ratios. This probably was an important factor behind Woodhead's findings.

Originally it was hoped to follow up this question more thoroughly in the present study but this did not prove to be possible.

(To be continued)

References

1) Roux. "Wattle tannin and Mimosa extract". L. I. R. I. (South Africa) 1955, p.82.

2) Woodhead, L. I. R. I. (South Africa). Annual report. 1948-1949. p. 21.
J. I. S. L. T. C. 1946. **30.** 228.

CHANGES IN UNION BUDGET 2021-22 – DUTY FREE IMPORT SCHEME

You are aware that the duty-free import scheme is currently implemented as per provisions of serial nos. 288, 311 and 312 of Customs Notification No. 50/2017 dated 30.6.2017 and this scheme provides Basic Customs Duty exemption for import of notified critical inputs to the tune of 3% of FOB value of exports in previous year for leather garment exporters and 5% of FOB value of exports in previous years for manufacturer exporters of footwear and other leather products. In respect of leather garments exporters, aforesaid S. No. 288 provides Basic Customs Duty exemption of 2% of FOB value of previous year for import of lining and interlining materials.

We would like to inform you that in the Union Budget 2021-22 presented on February 1, 2021, provisions of the said Serial Nos. 311 and 312 of Duty-Free Import Scheme have been removed w.e.f. April 1, 2021 vide Serial No. 34 of Customs Notification No. 2/2021 dated 1.2.2021 (copy enclosed).

From April 1, 2021 onwards the provisions of Serial No. 288 of Customs Notification No. 50/2017 dated 30.6.2017 alone will apply, as per which Basic Customs duty exemption is provided for import of lining and interlining materials by Leather Garments exporters, up to 2% of FOB value of exports in previous year. The procedure for availing this facility is enclosed.

We would like to inform you that CLE submitted various representations to the Government, requesting continuation of the Duty-Free Import Scheme as per provisions of Serial No. 311 and 312 of Customs Notification No. 50/2017. CLE had also requested the Government to extend the validity of Export Performance Certificate of 2019-20 till Sept. 30, 2021.

However, these requests have not yet been considered. Members may kindly note the above. The circular towards imports of lining and interlining materials under DFIS for the year 2021-22 by leather garments exporters is enclosed.

(CLE website – 30/06/2021)

INDIA FACES A LOSS OF 19.6 MILLION JOBS

While many of the lost jobs will come back, the current loss is huge and its impact on the households that have suffered because of this cannot be captured in the comfort that jobs will come back eventually.

A comparison of the quarter ended March 2021 with the quarter ended March 2020 provides a view of how India dealt with the COVID-19 shock.The quarter ended March 2020 reflects the position before the shock and the quarter ended March 2021 was the position at the end of a year since the shock. Using quarterly data removes the noise in monthly data, if any, and making year-on-year comparisons removes the effects of seasonality, if any.

One problem with using the March 2020 quarter as a pre-Covid quarter is that it wasn't entirely free of the effects of Covid. The virus had started curtailing activities by late February and finally, the nationwide lockdown began on March 24, 2020.

In January 2020, employment was estimated at 410 million. This dropped to 406 million in February and then to 396 million in March that year. Therefore, using the quarter ended March 2020 as a pre-Covid quarter is to understate the pre-Covid conditions. With this caveat, it may be noted that employment during the quarter ended March 2020 was 406 million.

In the quarter ended March 2021, employment is estimated at 399.7 million. Therefore, one year after the onset of Covid, India was left with a shortfall of 6.3 million jobs. Note that this is not the loss of jobs during the year of the Covid pandemic. That is a much bigger number. Many of the lost jobs came back.

Our interest is in the situation before and after the shock. We find that all jobs could not be recovered. The net shortfall is of 6.3 million jobs, implying a loss of 1.5 per cent of the jobs. The second wave of Covid hit India exactly a year after the first. This one cost India an additional 13.3 million jobs.

Employment dropped from 399.7 million in the quarter ended March 2021 to 386.4 million in the quarter ended June 2021. So, compared to the pre-Covid March 2020 quarter, India today faces a loss of a massive 19.6 million jobs. It is not entirely fair to compare the 13.3 million jobs lost in the second wave with the 6.3 million jobs lost in the year since the first wave. Experience tells us that many of the jobs lost initially do come back eventually.

Employment at the end of the quarter ended June 2020 was a whopping 78 million lower than it was in the March 2020 quarter. But that massive shortfall has been largely made up for, leaving a shortfall of only 6.3 million as of the quarter of March 2021.

Similarly, the 13.3 million shortfalls seen in the first quarter of the second wave will be narrowed in the coming quarters. While many of the lost jobs will come back, the current loss is huge and its impact on the households that have suffered because of this cannot be captured in the cold statistics rolled out here or in the comfort that jobs will come back eventually.

Many of those who got their jobs back or found alternative jobs got these at lower wage rates. Household incomes have fallen a lot more than employment has. The gender distribution of job losses in the second wave is somewhat ominous.

First, a simple structural fact — nearly 90 per cent of the jobs are held by males. Women account for only about 10 per cent of the jobs, but they made for 23 per cent of the loss of jobs a year after India was struck by Covid. As of the quarter of March 2021, of the 399.7 million jobs, women accounted for only 41.8 million jobs. But, of the 6.3 million jobs lost over the preceding year, women accounted for 1.5 million lost jobs.

The most disproportionate loss of jobs because of the first wave of COVID-19 was among urban women. Urban women account for about three per cent of total employment. But they accounted for 39 per cent of total job losses.

Of the 6.3 million jobs lost, urban women accounted for a loss of 2.4 million.

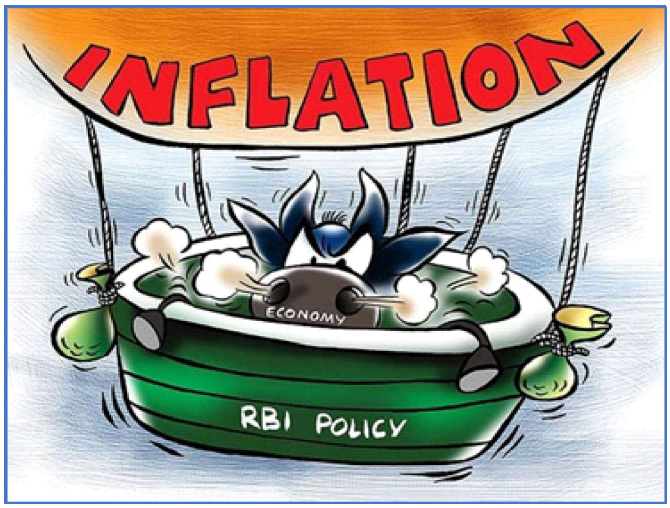
This is not how it played out in the second wave. Urban women suffered the least loss of jobs. The burden of job losses has shifted to men. During the April-June 2021 quarter, urban males faced a disproportionately higher loss of jobs. Urban males account for about 28 per cent of the total employment in India. They accounted for a lower 26 per cent of the loss of jobs till March 2021. But, in the quarter ended June 2021, their share in total job losses was higher at 30 per cent.

Arguably, urban male jobs are the better-quality jobs and their disproportionate loss could imply a greater fall in income than witnessed so far. It is also likely that women are often the second earning member of a household. The loss of jobs among women more often than not implies a fall in income but not a complete loss of income.

But a loss of job among men often implies complete loss of livelihood. This greater loss of urban male jobs is worrisome. The impact of this on income will be known when the income data for the quarter are released in November 2021.

(Business Standard – 22/07/2021)

RBI RAISES RETAIL INFLATION FORECAST TO 5.7% FOR FY' 22



The Reserve Bank of India on Friday raised the retail inflation forecast for 2021-22 to 5.7 per cent due to supply side constraints, high crude oil and raw materials cost. The RBI in June had pegged the retail inflation estimate at 5.1 per cent for the current financial year. The RBI has the mandate to keep inflation in a band of 2-4 per cent, with a tolerance level of 2 per cent on either side.

"The current assessment is that the inflationary pressures during Q1:2021-22 are largely driven by adverse supply shocks which are expected to be transitory," RBI Governor Shaktikanta Das said while announcing the outcome of the Monetary Policy Committee (MPC) meeting. The Reserve Bank of India (RBI) has decided to keep the repo rate — at which it lends short-term money to banks — unchanged at 4 per cent but maintained an accommodative stance as the economy is yet to recover from the impact of the second COVID wave.

"Inflation may remain close to the upper tolerance band for the second quarter of 2020-21. "But this pressure should ebb in the third quarter of 2021-22 on account of kharif harvest arrivals and supply side measures," Das said. He said a "pre-emptive monetary policy response" at this stage may kill the nascent and hesitant recovery (of the economy) that is trying to secure a foothold in the extremely difficult conditions.

"Taking into consideration all these factors, CPI inflation is now projected at 5.7 per cent during 2021-22: 5.9 per cent in Q2; 5.3 per cent in Q3; and 5.8 per cent in Q4 of 2021-22, with risks broadly balanced. CPI inflation for Q1:2022-23 is projected at 5.1 per cent," he said.

The retail inflation in June rose to 6.3 per cent mainly because of uptick in prices of edible oils, pulses, eggs, milk and prepared meals as well as rise in vegetable prices. Input prices are rising across manufacturing and services sectors, but weak demand and efforts towards cost cutting are tempering the pass-through to output prices, the RBI Governor said. Das also said there has been a considerable hardening of commodity prices, particularly crude oil.

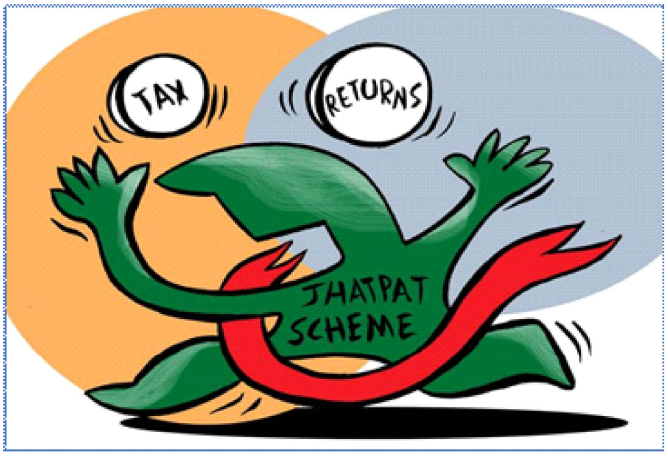
However, price pressures have witnessed a transient softening from the peak in July post the agreement amongst the oil producing OPEC plus nations to bring back production to pre-pandemic levels by September 2022. Going forward, the revival of south-west monsoon and the pick-up in kharif sowing, buffeted by adequate food stocks should help control prices of cereals.

Prices of edible oil and pulses have softened in July due to supply side interventions by the government, he added. While the government has taken certain steps to ease supply constraints, concerted efforts in this direction are necessary to restore supply-demand balance, Das said.

"With crude oil prices at elevated levels, a calibrated reduction of the indirect tax component of pump prices by the Centre and states can help to substantially lessen cost pressures," Das said. He said the RBI is closely monitoring the inflationary pressures and the MPC is conscious of its objective of anchoring inflation expectations.

(PTI – 06/08/2021)

DON'T HAVE FORM 16? YOU CAN STILL FILE YOUR TAX RETURN



If a salaried employee does not possess Form 16, he can still file the I-T Return with the help of his salary slips and Form 26 AS.

The last date to file your income tax return (ITR) for financial year 2020-21 has been extended till September 30, 2021.

Keeping in mind the Covid-19 situation, the tax department has extended a few deadlines. For instance, as per the Income Tax Act, employers should issue Form-16 to the employee before June 15 of the assessment year — the 12-

month period that follows the financial year for which your income is to be assessed for tax. For FY21, CBDT has extended the due date to issue Form 16.

The new deadline for employers to issue Form 16 to employees is July 31, 2021.nChartered Accountant Rahul Agarwala, business partner, AGSM Advisory Private Ltd, says, "Form 16 is a certificate issued by an employer to its employee under section 203 of the Income Tax Act, when the employer deducts tax at source (TDS) from the salary of employee."

This certificate provides details about the salary an employee has earned during the financial year and the amount of TDS that has been deducted on his/her pay and deposited to the Income Tax Department. Agarwala says, "It is mandatory for employer to issue Form 16, if tax at source has been deducted from the employee's salary.

"Further, in case an employee has changed jobs or worked for two or more employers at the same time during the year and the tax has been deducted by more than one employer, then employee will be issued separate Form 16s by those employers."Form 16 has two components, namely, Part A and Part B.

Part A: Archit Gupta, chief executive officer, (CEO) Cleartax says, "Part A of Form 16 provides details of the tax every quarter and deposited in the government's treasury. "It will also have details of the permanent account number (PAN), tax deduction account number (TAN) of the employer, and other information."

The employer can generate and download Part A of Form 16 through the TRACES portal. Components of Part A of Form 16 include the name and address of the employer, PAN, TAN and summary of quarterly tax deducted and deposited, duly certified by the employer.

Part B: It consists details about other income, deductions allowed, salary paid, tax payable etc. Agarwala says, "Part B of Form 16 has the detailed break-up of tax computation, gross salary paid/credited, exemption/deduction claimed, any other income declared by employee etc as an annexure to Part A of Form 16. "In short, it's safe to say it is the detailed computation of tax on income of salaried employees." Don't confuse Form 16 with Form 16 A: Form 16A is also a TDS Certificate.

While Form 16 is for only salary income, Form 16A is applicable for TDS on income other than salary. For example, Form 16A shall be issued to you for tax deducted by a bank on the interest you've earned on fixed deposits, TDS on insurance commission, TDS on your rent receipts. In other words, it includes TDS on any income — other than salary — that is liable for such deduction.

All details in Form 16A are also available on Form 26AS. What to do: Ideally, you should have got your Form 16 from your employer by now. If you haven't yet, then you should get it by July 31, the new deadline. What do you do if you have changed or lost your job, or if your company has shut down? Even if you don't have Form 16, you can still file returns.

Suresh Surana, founder, RSM India says, "If a salaried employee does not possess Form 16, he can still file the I-T Return with the help of his salary slips and Form 26 AS." Salary slips will help an assesses ascertain his income from salary for the relevant tax year and also the details of profession tax, income tax and other deductions such as contributions towards Provident fund.

It also contains details of allowances forming part of salary, which would help a taxpayer to ascertain whether the allowances are exempt or taxable. Surana says, "Form 26AS is a statement of TDS/TCS which will help an assessee determine the amount of TDS/TCS as well as the amount of advance tax and self-assessment tax for that financial year."

Apart from those mentioned above, an assessee should take into consideration the incomes from other sources (such as rental income, interest income, dividends, etc.) and capital gains that have accrued during the relevant tax year while computing the total income. If an assessee is in receipt of House Rent Allowance (HRA), he should calculate the amount of exemption under Section 10(13A), if eligible.

He should also consider standard deduction (up to Rs 50,000) on gross salary and deductions under chapter VI A such as section 80C. Surana says, "However, if the taxpayer opts for the new tax regime which provides for a lower tax rate, then he should note that he shall not be able to claim any tax deductions or exemptions as discussed."

What if there is no TDS? Is the employer required to issue a Form 16? Manish P Hingar, founder, Fintoo, a tax and investment advisory firm, says, "If no tax has been deducted, the employer needn't issue Form 16.

"However, the employee can request the employer to issue Form 16 Part B, which will help him to file returns." And what should you do when the employer deducts TDS and does not issue a certificate? Surana says, "If the employer deducts TDS and does not issue a certificate under Form 16 within the prescribed time limit, he shall be liable to pay penalty of Rs 100 per day under section 272A(2)(g) of the IT Act, till the certificate is issued to the employee."

And what if no Form 16 has been issued to you by the company, because it has shut down? Does it mean you don't have to pay tax or file a return? As per Section 139(1), if an individual's total income in a particular tax period exceeds the basic exemption limit of Rs 2.5 lakh, he shall file the return of income, regardless of whether or not Form 16 has been issued or not.

Thus, even if Form 16 has not been issued to an assessee by his employer, the employee will still have to file his return of income. Hingar says, "Not issuing Form 16 does not mean that you do not have to pay any taxes or file your tax return.

"It is important for everyone to pay income tax and file tax returns based on their income. "And if you do not have Form 16, you can use your salary slips, bank statements and Form 26AS to file your Income Tax Returns."

(Rediff.com – 27/07/2021)

-: JILTA :-

***Owner**: Indian Leather Technologists' Association, **Publisher & Printer**: Mr. S. D. Set, **Published From**: 'Sanjoy Bhavan', (3rd floor), 44, Shanti Pally, Kasba, Kolkata - 700107, West Bengal, INDIA and **Printed From**: M/s TAS Associate, 11, Priya Nath Dey Lane, Kolkata- 700036, West Bengal, INDIA*

ILTA PUBLICATION

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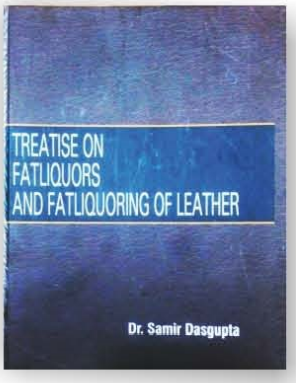

Title of the Book
Treatise on Fatliquors and Fatliquoring of Leather

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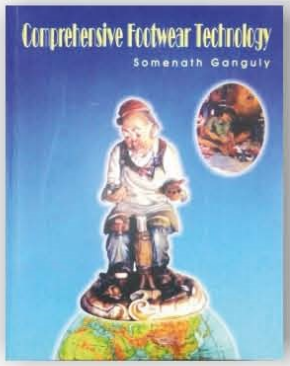

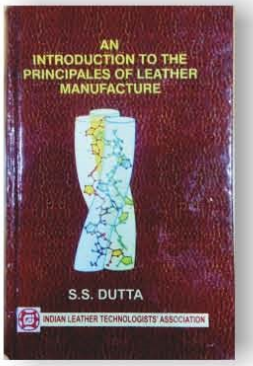

Title of the Book
An Introduction to the Principles of Leather Manufacture

Author
Prof. S. S. Dutta

Price per copy*
₹ 800.00 / $ 50.00

Title of the Book
Analytical Chemistry of Leather Manufacture

Author
Mr. P. K. Sarkar

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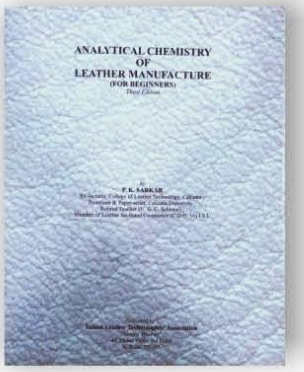

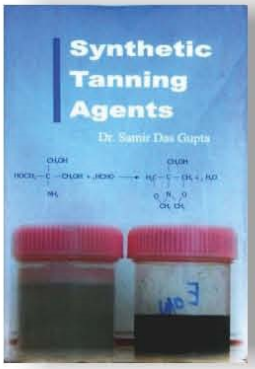

Title of the Book
Synthetic Tanning Agents

Author
Dr. Samir Dasgupta

Price per copy*
₹ 900.00 / $ 30.00

Title of the Book
Hand- Book of Tanning

Author
Prof. B. M. Das

Price per copy*
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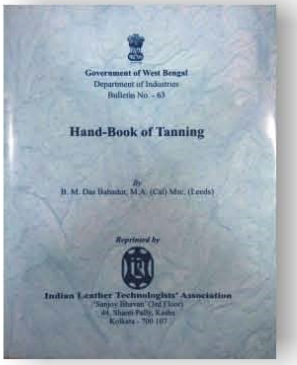

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Registration No. KOL RMS/074/2019-21

History and Activities of Indian Leather Technologists' Association

The Indian Leather Technologists' Association (ILTA) was founded by Late Prof. B. M. Das, the originator of Das-Sisseney theory and father of Indian Leather Science on 14th August' 1950.

The primary objectives of the oldest Leather Technologists' Association which celebrated its Diamond Jubilee year in the 2010, are :

- To bring all concerned with the broad spectrum of the leather industry under one umbrella.
- To organize seminar, symposium, workshop in order to create information, knowledge and latest development for the benefit of all concerned. To offer a common platform for all to interact with each other in order to understand each other's problems and prospects.
- To publish monthly journal as a supplement to those above objectives. The monthly journal of ILTA is known as journal of Indian Leather Technologists' Association and is the most widely circulated technical journal concerning leather technology.
- To publish text books for the benefit of students at various levels of study, for the researchers and industry.
- To have interface between urban and rural sector.
- To assist Planning Commission, various Government institutions, Ministry and autonomous bodies to formulate appropriate policies acceptable and adoptable to the industry.
- To organize practical training and to provide skilled manpower and to motivate good students for study.
- To conduct activities related to the growth of the export of leather and leather goods from India.
- As the part of many social activities ILTA has donated Rs. 1 lac to Consul General of Nepal towards relief of earthquake effected of Nepal on 15th Sept, 2015.

INTERNATIONAL & NATIONAL SEMINAR

- ILTA is the Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS), a 115 years old organization and for the first time the IULTCS Congress was organized in January 1999 outside the developed countries in India jointly by ILTA and CLRI.
  2017 IULTCS Congress is scheduled to be held in India again.
- 5th Asian International Conference on Leather Science & Technology (AICLST) was organized by ILTA in 2010 during its' Diamond Jubilee Celebration year.

SEMINAR & SYMPOSIUM

ILTA organizes Seminar & Symposiums on regular basis to share information, knowledge & latest development and interactions for the benefit of all concerned. Few are as under :

- Prof. B. M. Das Memorial Lecture every year during the Foundation Day Celebrations on 14th August every year.
- Sanjoy Sen Memorial Lecture on 14th January every year, the birthday of our late President for several decades.
- Prof. Moni Banerjee Memorial Lecture on 15th March every year, the birthday of this iconic personality.
- Seminar on the occasion of India International Leather Fair (IILF) at Chennai in February every year.

It has also organized :

- Prof. Y. Nayudumma Memorial Lecture.
- Series of Lectures during "Programme on implementing Emerging & Sustainable Technologies (PrIEST)".
- Seminars in occasion of India International Leather Fair, 2014 and 2015 at Chennai etc. Many reputed scientists, industrialists and educationists have delivered these prestigious lectures. Foreign dignitaries during their visits to India have addressed the members of ILTA at various times.

PUBLICATION

ILTA have published the following books :

- An Introduction to the Principles of Physical Testing of Leather by Prof. S. S. Dutta
- Practical Aspects of Manufacture of Upper Leather by J. M. Dey
- An Introduction to the Principles of Leather Manufacture by Prof. S. S. dutta
- Analytical Chemistry of Leather Manufacture by P. K. Sarkar
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- Treatise on Fatliquors and Fatliquoring of Leather by Dr. Samir Dasgupta
- Synthetic Tanning Agents by Dr. Samir Dasgupta
- Hand Book of Tanning by Prof. B. M. Das

ILTA has a good Library & Archive enriched with a few important Books, Periodicals, Journals etc.

AWARDS OF EXCELLENCE

- ILTA awards Prof. B. M. Das Memorial, Sanjoy Sen Memorial, J. M. Dey Memorial and Moni Banerjee Memorial Medals to the top rankers at the University / Technical Institute graduate and post graduate levels to encourage the brilliants to evolve with the Industry.
- J. Sinha Roy Memorial Award for the author of the best contribution for the entire year published in the monthly journal of the Indian Leather Technologists' Association (JILTA).

LEXPOs

To promote and provide marketing facilities, to keep pace with the latest design and technology, to have better interaction with the domestic buyers, ILTA has been organizing LEXPO fairs at Kolkata from 1977, Siliguri from 1992 and Durgapur from 2010. To help the tiny, cottage and small-scale sectors industries in marketing, LEXPO fairs give the exposure for their products. Apart from Kolkata, Siliguri & Durgapur, ILTA has organized LEXPO at Bhubaneswar, Gangtok, Guwahati, Jamshedpur and Ranchi.

MEMBERS

The Association's present (as on 31.03.2018) strength of members is more than 600 from all over India and abroad. Primarily the members are leather technologists passed out from Govt. College of Engineering & Leather Technology, Anna University, Chennai, Harcourt Butler Technological Institute, Kanpur, B. R. Ambedkar National Institute of Technology, Jalandhar and Scientists from Central Leather Research Institute.

ESTABLISHMENTS

In order to strengthen its activities, ILTA have constructed its own six storied building at 44, Shanti Pally, Kasba, Kolkata – 700 107 and have named it "Sanjoy Bhavan".
This Association is managed by an Executive Committee duly elected by the members of the Association. It is absolutely a voluntary organization working for the betterment of the Leather Industry. None of the Executive Committee members gets any remuneration for the services rendered but they get the satisfaction of being a part of this esteemed organization.

ILTA
Since 1950

Indian Leather Technologists' Association
[A Member Society of International Union of Leather Technologists' and Chemists Societies]

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