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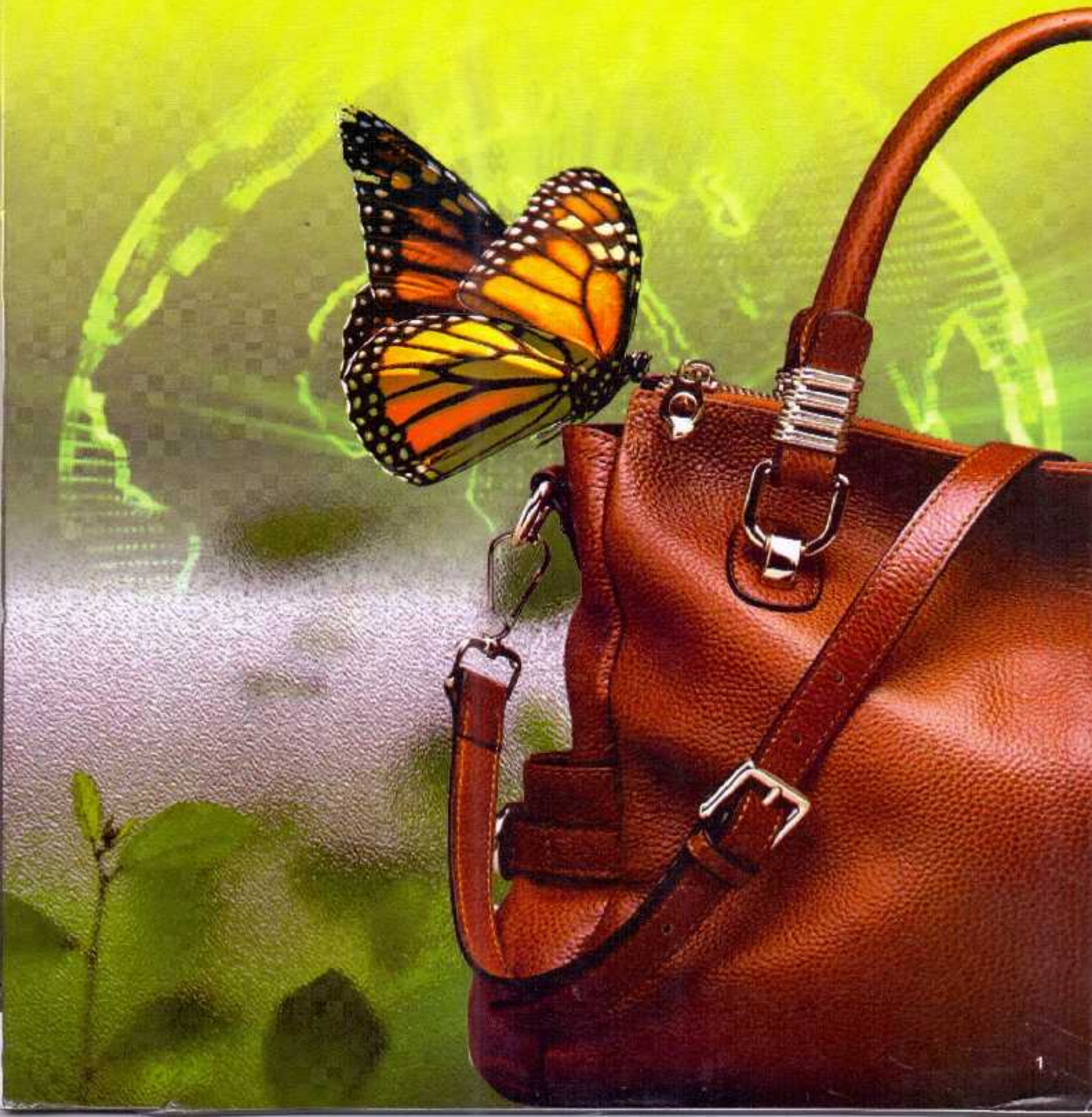


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# JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

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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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

## EDITORIAL BOARD OF JILTA

# Impact of US-Iran tension on Indian oil passage

Iran's impending breach of the nuclear deal (the Joint Comprehensive Plan of Action, JCPOA) and the attacks in the Gulf reflect the increasing desperation of Iranian leaders as the stranglehold of sanctions re-imposed by Trump intensifies. This is not simply knee-jerk Iranian counterpunching; rather, the rising tensions are an acknowledgement that Iran cannot afford a protracted impasse, with uncertain hopes of economic relief from some future U.S. administration. Facing an economic abyss and anticipating consequent domestic political fallout, Tehran has recently begun to cast aside its self-imposed restraint and test the world's response to calibrated reprisals. The only surprise is that Iran's vengeance has taken so long and—until this month—amounted to so little.

The slow-motion crisis between Iran and the United States picked up tempo this week with Tehran's announcement that it will soon defy restrictions set by the 2015 nuclear deal on its stockpile of low-enriched uranium. Tehran's first major step away from the nuclear accord since the United States exited the deal in 2018 comes in the wake of a series of attacks on tankers in the Persian Gulf, as well as missile and drone strikes directed at Saudi and Emirati infrastructure and American presence in Iraq. The latest spasm of violence played out even as the Japanese prime minister left Tehran empty-handed after a mediation effort apparently encouraged by President Trump. Iran is now injecting a sense of urgency within the international community around devising a pathway out of its simmering standoff with Washington. Ayatollah Ali Khamenei, Iran's supreme leader, recently explained that negotiating from a position of weakness is a trap, and the only recourse for a country under U.S. pressure is to utilize its own "pressure tools" to induce Washington to alter its approach. Escalation is a dangerous way to accrue leverage, but Tehran is well versed in using provocation to gain advantage.

The images of burning tankers in the world's most important energy corridor has stoked fears that the United States and Iran are on a collision course. There is legitimate cause to worry that neither side has the skill—or the will—to avert a conflict. The stakes are high, but it's not too late to forestall yet another catastrophic American military intervention in the Middle East. The latest skirmishing underscores the risks of what has become a strategic impasse between Washington and Tehran, one that will end in disaster for both sides if they continue along their current strategies. And for all the rhetorical fulminations and engrained animosity, influential constituencies on both sides would prefer to avoid a confrontation. The challenge now is to temper nerves and begin to develop a realistic framework for diplomacy. The latest incidents mark a dangerous new escalation in the simmering standoff between the United States and Iran, puncturing a full year of relative calm that prevailed around Iran even as Washington upended the nuclear pact in 2018 and launched a full-frontal assault on Iran's economy. The U.S. campaign has intensified significantly since early May, as the White House abruptly ratcheted up efforts to halt Iranian oil exports, designated its elite military force as a foreign terrorist organization, unveiled new sanctions targeting Iran's steel and petrochemical industries, revoked some permissions necessary for Iran to continue complying with the nuclear deal, and pointedly bolstered U.S. military posture in the Gulf.

India has strong bilateral relations with Iran. In addition to cultural and historical links, the two countries look at each other as important regional actors who have contributed positively to stability in their respective regions. New Delhi and Tehran have maintained robust political engagements since the 1990s. During his visit to Iran in May 2016, Prime Minister Narendra Modi and President Rouhani had agreed to strengthen the relationship drawing upon historical linkages and geographical proximity. The same sentiments were reflected when President Rouhani visited New Delhi in February 2018. At the moment, the core of the relationship lies in strong bilateral trade, crude oil imports from Iran and cooperation in the development and operationalisation of the Chabahar Port. As reflected in Table 1, Iran is one of India's major trading partners and accounts for nearly two per cent of its foreign trade.

**Table 1: India-Iran Bilateral Trade (US$ Million)**

| | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 (April-February) |
|---|---|---|---|---|---|---|
| India's Exports to Iran | 4,971.35 | 4,175.06 | 2,718.51 | 2,379.61 | 2,652.37 | 2,916.46 |
| India's Imports from Iran | 10,307.16 | 8,955.02 | 6,278.75 | 10,506.51 | 11,111.52 | 12,724.19 |
| Total bilateral Trade | 15,278.51 | 13,130.08 | 9,060.26 | 12,886.12 | 13,763.89 | 15,640.65 |
| Share in India's Total Trade | 2 | 1.73 | 1.41 | 1.95 | 1.79 | 2.69 |

**Source**: Directorate General of Foreign Trade, Ministry of Commerce and Industry, Government of India

Energy is the most important component of bilateral trade and Iran contributes significantly to India's energy security. Iran has been one of the top three suppliers of crude oil to India for over a decade, except during the period 2011-15 when it was under international sanctions. Even then, India was able to get waivers from the US during the Obama administration. According to the BP Statistical Review of World Energy 2018, India's dependence on crude oil imports to meet its domestic consumption is an extremely high 95 per cent. In 2017, India's total crude oil consumption was 222.1 million tons (MT) or 4.69 million barrels per day (bpd), and of this 211.1 MT or 4.24 bpd was imported. In 2018-19, of India's total crude imports of 226.45 MT worth US$12.11 billion, 23.9 MT accounting for 10 per cent was from Iran. Moreover, India also buys natural gas from Iran and hence the total value of energy imports from Iran is even higher, accounting for 80-85 per cent of its overall imports from Iran as reflected in Table 2.

**Table 2: India-Iran Energy Trade (US$ Million)**

| Year | Oil Imports from Iran | Total Oil Imports | Iranian Share in Total Oil Imports | Imports from Iran | Per cent of Oil in Imports from Iran |
|---|---|---|---|---|---|
| 2013-14 | 8,556.95 | 181,382.59 | 4.72 | 10,307.16 | 83.02 |
| 2014-15 | 7,292.13 | 156,400.01 | 4.66 | 8,955.02 | 81.43 |
| 2015-16 | 4,461.57 | 96,953.06 | 4.6 | 6,278.75 | 71.06 |
| 2016-17 | 9,006.29 | 103,163.20 | 8.73 | 10,506.51 | 85.72 |
| 2017-18 | 9,232.61 | 132,294.61 | 6.98 | 11,111.52 | 83.09 |
| 2018-19 (April to February) | 11,663.15 | - | - | 12,724.19 | 91.66 |

**Source**: Directorate General of Foreign Trade, Ministry of Commerce and Industry, Government of India.

The third most important aspect in bilateral relations is India's involvement in the development and operationalisation of the Chabahar Port. India deems the port as a gateway for its trade with Afghanistan and Central Asia. India, Iran and Afghanistan signed a trilateral agreement during the visit of Prime Minister Modi to Tehran in 2016 to develop the port as a transit and transport corridor. India also signed an agreement with Iran committing investments worth US$ 85 million for the development of the port. In February 2018, when President Rouhani visited New Delhi, India Ports Global Limited (IPGL) and Iran's Port and Maritime Organisation signed a lease contract for the operationalisation of Phase-1 of the Chabahar Port underlining the strengthening cooperation between the two countries.

As noted earlier, the US has refused to renew the SREs issued for eight countries including India. This means that Indian companies will either have to stop buying oil from Iran or resort to a Rupee payment mechanism as was done in the past. However, during the pre-JCPOA sanctions period, the Obama administration had given exemptions to India on importing oil from Iran. Whereas, now under the Trump administration, the likelihood is bleak for forging any informal arrangement to allow continued import of Iranian oil. According to media reports, as of May 2019, Indian oil companies have decided to not place further orders for oil imports from Iran due to US sanctions. Though no official statement has been issued by the Ministry of External Affairs in this regard, a tweet on April 23 from the Minister of Petroleum and Natural Gas indicated that India has prepared plans for not allowing any shortfall of oil in the domestic market due to the restrictions on oil imports from Iran.

Iranian Foreign Minister, Javad Zarif, visited New Delhi on May 14 and discussed various bilateral and regional issues with External Affairs Minister Sushma Swaraj. The visit acquires significance in the backdrop of Iran's diplomatic push to convince its important business and commercial partners to continue doing business with it. He also updated Swaraj on Iran's decision to suspend some of its commitments under the JCPOA and the 60-day time-line given to Germany, France, Britain, Russia and China for "restoring oil and banking channels." Swaraj reportedly informed Zarif that "India will take a call on purchase of Iranian energy after the general election." Other than the oil sector, India is not directly affected by US sanctions on Iran though Indian companies involved in the Iranian automobile, iron & steel and mining sectors will be affected due to additional US sanctions on these sectors. The Chabahar Port also does not come under US sanctions and hence Indian investments and involvement in it will not be affected. Nonetheless, due to sanctions on the iron & steel sector and individuals and companies associated with IRGC, certain infrastructure development projects such as the Chabahar-Zahedan railway and gas pipeline, part of Iran's plan to develop Chabahar as a transit hub between Central Asia and the world, could be affected.

It might not be difficult for India to meet the shortfall in crude oil imports due to US sanctions on Iran. According to forecasts by the International Energy Agency (IEA), global oil supply is expected to outpace demand throughout 2019 because of the surplus available in the international oil market. While US shale production is expected to grow rapidly, the higher flows from countries such as Nigeria, Libya and Iraq have already offset losses from the decline in Iranian exports. Moreover, countries

such as Saudi Arabia, the United Arab Emirates (UAE) and the US have publicly announced their willingness to help meet the shortfall in crude oil that India might face due to sanctions on Iran. Then there are countries such as Iraq, Kazakhstan, Nigeria, Angola, Mexico, etc. which are among the top ten sources of oil for India and have the capacity to increase production and exports in case of a rise in demand.

Therefore managing the economic aspect of continued flow of oil to India might not be difficult. The bigger challenge is the political aspect of managing relations with the US and Iran. On the one hand, if India were to stop sourcing oil from Iran, it will affect bilateral relations. Moreover, giving in completely to US pressure and cutting off Iranian oil imports does not comport with India's pursuit of an independent foreign policy and its endeavour to maintain strategic autonomy. On the other hand, if India were to continue to buy Iranian oil, say by sidestepping US sanctions, it is likely to impact the strategic relationship with the US.

Given this scenario, India has two options. One is to resort to buying Iranian oil through one or more informal arrangements including: devising a Rupee payment mechanism to overcome the sanctions; joining hands with the EU, Russia and China through the INSTEX mechanism; teaming up with a Shanghai Cooperation Organisation (SCO) initiative to defy US sanctions. If India were to undertake such a move, its multifaceted relations with the US will be hampered and the Trump administration is unlikely to look upon such a step kindly. The second and more plausible option is to continue negotiating with the US to either secure a formal waiver or to have an informal understanding to buy Iranian oil. The likelihood of the Trump administration granting an exemption is remote given that it understands that there is enough oil in the international market and wants to exert maximum pressure on Iran to change its behaviour. In the meanwhile, India can offer to Iran to enhance its investments in the Chabahar Port development project as well as consider initiating other developmental and connectivity projects to strengthen linkages to Afghanistan, the Caucasus and Central Asia. This will help India not openly defy the US or subvert its policy towards Iran but also at the same time ensure that its relationship with Iran is not completely derailed and it is also able to pursue an independent foreign policy. The bottom line is that while India can wait for the easing of US-Iran tensions to resume buying oil from Iran, it is unlikely to undermine its relationship with the US to please Tehran.

Goutam Mukherjee

Dr. Goutam Mukherjee
Hony. Editor, JILTA


Leather Fraternity 69 years of service to the International

# *From the desk of* General Secretary

## ELECTION SCHEDULE FOR RECONSTITUTION OF THE EXECUTIVE COMMITTEE OF ILTA AND THE REGIONAL COMMITTEES FOR THE TERM 2019 – 2021

The Executive Committee of ILTA at its 519th Meeting held on 25.06.2019 approved the following schedule for Election of Executive Committee of ILTA and the Regional Committees for the term 2019-2021.

| Sl. No. | Events | Election Schedule for 2019-2021 | Day |
|---|---|---|---|
| 1 | Mailing of Nomination papers & Voters' List on or before | 02.05.2019 | Thursday |
| 2 | Last date for receipt of Nomination Papers | 24.05.2019 | Friday |
| 3 | Last date for receipt of Consent | 13.06.2019 | Thursday |
| 4 | Last date for withdrawal of candidature | 17.06.2019 | Monday |
| 5 | Mailing of ballot papers on or before | 06.07.2019 | Saturday |
| 6 | Last date for receipt of ballot papers From voters residing outside KMDA area & 24-Pgs (N & S) | 03.08.2019 | Saturday |
| 7 | Casting of votes by voters residing in KMDA & 24-Pgs (N & S) Area at ILTA Administrative Office 10-00 to 17-00 hrs. LUNCH BREAK : 1-30 to 2-30 PM | 02.08.2019 & 03.08.2019 | Friday & Saturday |
| 8 | Counting of votes at ILTA Administrative Office from 11-00 hrs. onwards | 05.08.2019 | Monday |

Dr. R. P. Sinha, W.B.E.S., M. Phil. (Econ.), M.B.A. (Gold Medalist), Ph. D., Associate Professor of Economics, Govt. College of Engineering & Leather Technology, Kolkata, has kindly consented to act as the Returning Officer.

## THE SYMPOSIUM - "TRENDS IN LEATHER AND LEATHER PRODUCTS"

Above symposium was organized as part of CSIR-CLRI Foundation Day Celebrations on the Forenoon of 24th April, 2019 at Heritage Hall, CLRI. The event was co-sponsored by Indian Leather Technologists' Association (ILTA) - Southern Region and Leather Research – Industry Get Together (LERIG) trust. Several students and staffs of CSIR-CLRI participated apart from significant representation from industrial members. The symposium had e-poster session where the students and the staffs of CSIR-CLRI presented their posters to the participants as well as the judges.

The symposium started with **Dr. B. Chandrasekaran**, Director, CSIR-CLRI, welcoming the gathering.

**Mr. N. R. Jagannathan**, President, ILTA – Southern Region, delivered the presidential address highlighting the need for Indian Tanners to look at changing norms with regards to sustainability of leather as a commodity.

After inspiring talks by many experts such as **Mr. Manoj Bhaiya**, CEO, C & E Ltd. on **"Changing Trends in Leather Chemicals"**, **Mr. Ramesh Babu**, Vice President, Tannery, A. V. Thomas Leather and allied Products Pvt. Ltd., on **"Current Market Trends in Leather and Regulatory Norms"**, **Mr. M K Gowthaman**, Senior Principal Scientist, CSIR-CLRI on **"ENZYMES – Status and Prospect"** and **Mr. Prasanna Kumar Maduri**, Campus Manager, Stahl India Pvt. Ltd. on **"Innovative and Sustainable Solutions – Stahl"**, Mr. N. R. Jagannathan gave away the Best Poster Awards along with cash prizes to four young Researchers.

The symposium concluded with Dr. P. Thanikaivelan, Principal Scientist, CSIR-CLRI and an Executive Committee Member, ILTA Southern Regional Committee delivering the formal Vote of Thanks.

**69th FOUNDATION DAY CELEBRATION OF ILTA**

The Executive Committee at its 518th Meeting held on Tuesday 28.05.2019 had detailed discussion on how above could best be celebrated on Wednesday 14th August, 2019.

Various suggestions were put forward. Consensus was reached on celebrating the day generally in the following manner :-

03.00 PM to 06.00 PM : B. M. Das Memorial Lecture & felicitation of Award Winners

06.00 PM to 06.30 PM : Tea Break

06.30 PM to 08.30 PM : Cultural Celebration of our Foundation Day

08.30 PM to 09.30 PM : Dinner

Venue may be Science City, if available. Detailed programme when finalized will be notified to individual Members in due course.

**You are requested to :-**

a) Kindly inform us your '**E-Mail ID**', '**Mobile No**', '**Land Line No**', through E-Mail ID : admin@iltaonleather.org / mailtoilta@rediffmail.com 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



**Executive Committee Members meet every Thursday at 18-30 hrs. at ILTA Office.**
**Members willing to participate are most welcome.**

# Chromium and Total Suspended Solid association in Composite Tannery Effluent - A Case study in CETP at Calcutta Leather Complex

[1] Shuvadip Adhikari, Dept. of Zoology, The University of Burdwan

[2] Sudin Pal, Ivy Kanungo, Sanjoy Chakraborty, Buddhadeb Chattopadhyay & Subhra Kumar Mukhopadhyay,

[1 & 2] Ecotoxicology and Environmental Technology Project Laboratory, Govt. College of Engineering & Leather Technology, Kolkata

## Introduction

Leather industry has a bad reputation for the solid and liquid waste it generates which causes high degree of environmental pollution (Barnhart, 1997). In leather industry at the time of tanning process some toxic chemicals are used of which chromium (Cr) ispredominant (Das et al., 2019). It is reported that 80-90 % of leather is tanned with Basic chrome sulphate (BCS) and chrome tanning method only 50–70% Cr is fixed and the rest is discharged with effluent (Saravanbahavan et al., 2004).Once discharged into environment Cr show several adverse ecotoxicological effects. Cr(III) and Cr(VI) are exist primarily in the environment of which Cr(III) is of low toxicity and an essential trace element for living organisms (Pal et al., 2018a). However, Cr(VI) is highly toxic to living organisms because hexavalent Cr is very much labile in biological systems and it can easily pass plasma membrane of cell. Cr(VI) is potent mutagenic, neurotoxic, carcinogenic and teratogenic agent and also act as an allergeneven at very low concentrations like other heavy metals reported (Dayan and Paine 2001; Al-Saleh et al., 1996; Pal et al. 2018b).It is estimated that Cr(VI) is hundred times more toxic than Cr(III). High Cr exposure causes toxicity to the plants as exhibited by reduced growth and phytomass, impaired photosynthesis, stunting and finally plant death. While, high bioaccumulation of Cr could lead to DNA damage, allergic reactions, several genotoxic insults in human body (Chattopadhyay et al. 2002).

From the pre-independent period leather industries were operating at three agglomerations (Tangra, Topsia, and Tiljala) of Kolkata.However, due to the Honourable Supreme Court verdict, these leather industries are shifted nearly 20 km away from Kolkata to Bantala, named Calcutta Leather Complex (CLC) and till date over 300 tanneries are sifted there at CLC. The CLC is equipped with Common Effluent Treatment Plant (CETP) through which huge amount of tannery effluent from the tanneries of CLC area are treated by a series of techniques and ultimately discharge into the environment. Within the CETP treatment process one of the major operation is the removal of total suspended solids (TSS) from tannery effluent. Thus, to know about the Cr elimination through TSS removal the present study is conducted to understand the association of Cr and TSS, if any, at CETP in CLC.

## Materials and methods:

CLC (22° 29′ 39″ N, 88° 31′ 30″ E) is located at Karaidanga, North 24 Parganas district of West Bengal. Presently in CETP four modules are running and each module has capacity to treat 5000 $m^3d^{-1}$. It discharges treated wastewater into the storm water flow (SWF) canal leading to Kultigong River which flows into the Ganga estuary.

Effluentwere collected from seven different treatment operation sites of a module at CETP. The seven effluent collecting sites

[2]Corresponding author E-mail : gmgcelt@gmail.com

were detritor, equilization tank, flocculation tank, primary sedimentation tank (primary clarifier), aeration tank, secondary sedimentation tank (secondary clarifier), and finally discharged wastewater (Sites 1 to 7 respectively). Samples were collected monthly from June 2018 to January 2019 (between 11 AM to 3 PM).

Total Suspended Solid (TSS) values were estimated by filtering 50 mL of raw wastewater samples by standard method of Eaton et al., (2005). For elemental analysis of total chromium, we analysed both raw wastewater (evenly stirred condition) and the filter of supernatant water (after keeping the sample for 30 min without any disturbance to allow the large suspended particles to settle down). Wastewater samples, primary and secondary sludge samples were digested by following Eaton et al., (2005). Detection of Chromium (Cr) were done by Atomic Absorption Spectrophotometer (Perkin-Elmer AAnalyst-100 with interfacing AAWinlab Software) followed by the standard method of Eaton et al., (2005).

Primary and secondary sludge samples were dried and sieved through a 2 mm sieve. Organic matter was estimated following Walkley and Black (1934) method using a UV-VIS spectrophotometer (Lamda-25, Perkin-Elmer).

**Results and discussion**

TSS values were reduced 81.29% in raw wastewater samples from Site 1 to Site 7 (Fig. 1).TSS values was highest in Site 3 (8.53±8.26 g $L^{-1}$) in raw wastewater followed by Site 5 (6.11±0.96 g $L^{-1}$). Both the sites were responsible for physical-chemical and biological treatment of wastewater respectively. In Site 3 coagulating chemicals (like aluminium sulphate) are mixed with wastewater to promote the destabilization of dissolved colloidal particles. Other chemicals like anionic polyelectrolites enhanced flocculation process which led to the formation of heavier and larger flocs of coagulated solids. This physical-chemical process was supposed to be responsible for higher TSS values in Site 3. Site 5 received overflowed wastewater from Site 4 and mixed with activated sludge and aerated by diffused air aeration system. It produced sludge flocks which absorbed suspended particles. Aeration enhanced active aerobic microorganisms that gradually degraded organic matter. Highest chromium values were also recorded from Site 3 (160.50±119.50 mg $L^{-1}$). Chemicals mixed in Site 3 augmented the separation of solids and chromium from the wastewater. However, the amount of chromium in tannery effluent varied widely depending on the leather processing events. In detritor, raw wastewater contained on average 116.50±156.27 mg $L^{-1}$ chromium (Fig. 2).It reduced about 99.88% at the time of final discharge. Sahasranaman and Emmanuel (2001) also mentioned that in tannery wastewater treatment 88% suspended solids and 99% chromium were recovered by physical-chemical treatment. During final discharge chromium content were 0.14±0.20 mg $L^{-1}$ which was much lower in concentration as recommended by West Bengal Pollution Control Board (2.00 mg $L^{-1}$).Chromium content in supernatant of effluent gradually changed from 0.19±0.26 mg $L^{-1}$(Site 1) to 0.09±0.12 mg $L^{-1}$(Site 7) (Fig. 3). From the present findings it was concluded that chromium was mainly associated with suspended solids in tannery wastewater (Fig. 4).

Primarysludge contained higher concentration of chromium. In primary sludge the chromium content was 52.08±4.12 g $Kg^{-1}$ where as in secondary sludge chromium content was much lower3.70±0.39 g $Kg^{-1}$.Accumulation of primary sludge in Site 4 reduced the amount of chromium in wastewater. However, in Site 5 aeration produced sludge flocks that absorbed suspended particles. In this site we also recorded higher concentration of chromium in wastewater but in secondary sludge comparatively much lower amount of chromium. Such finding indicated that may be some chromium reducing bacteria that play a key role in reducing chromium in Site 5. Several authors like Benazir et al. (2010), Essahale et al. (2012), Sanjay et al. (2018) highlighted the role of microbes in chromium bioremediation from tannery wastewater.

**Conclusion**

We get a significant reduction (75.8-86.2%) of TSS from Site 1 (detritor) to final discharge point of tannery effluent through CETP. Whereas, the Cr content in raw effluent is reduced 99.9% from Site 1 to Site 7. So, it is evident from this study that there is a strong association of TSS and Cr and major amount of Cr is removed through primary and secondary sludge after the efficient treatment of tannery effluent in CETP.

**Acknowledgements**

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**Figures**

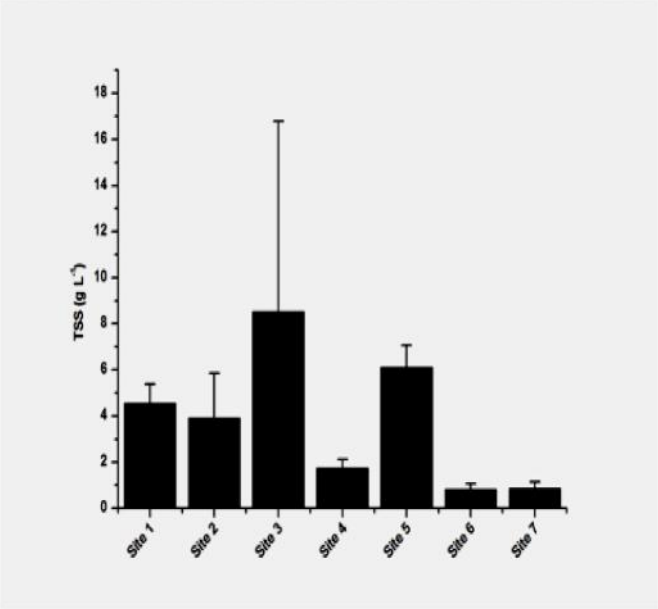


Figure 1: Values of TSS (g $L^{-1}$) in raw wastewater in different sites of CETP of CLC

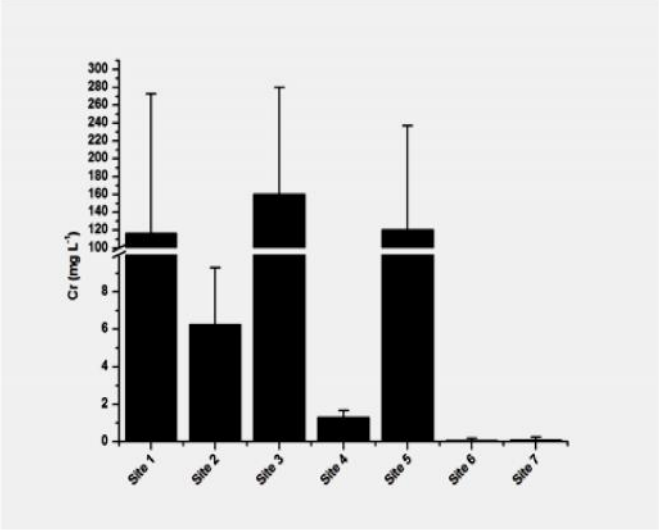


Figure 2: Concentrationsof Cr (mg $L^{-1}$) in raw wastewaterat different sites of CETP of CLC

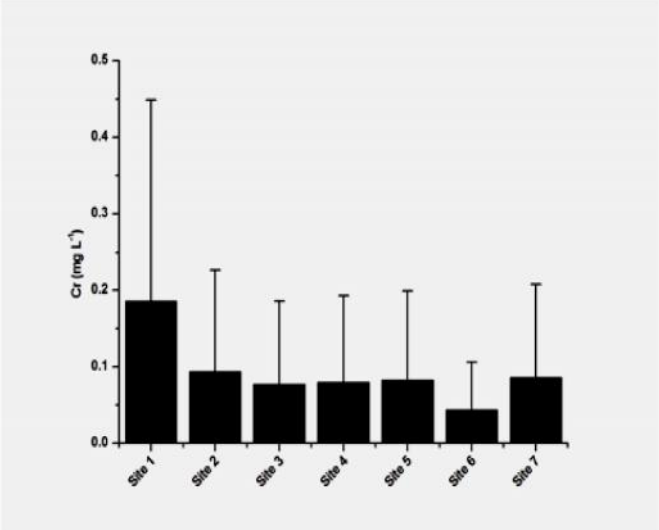


Figure 3: Concentrationsof Cr (mg $L^{-1}$) in supernatant of wastewater collected from different sites of CETP of CLC

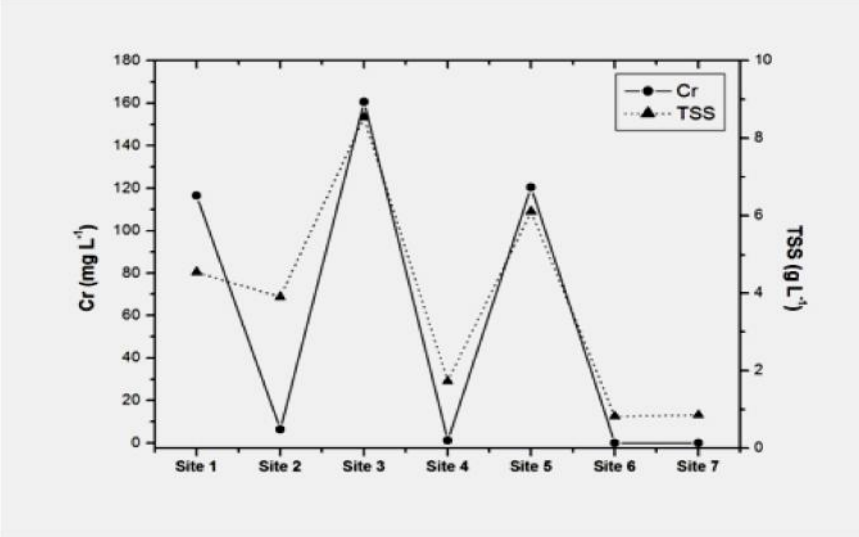


Figure 4: Association between Cr and TSS in raw tannery wastewater at different sites of CETP of CLC


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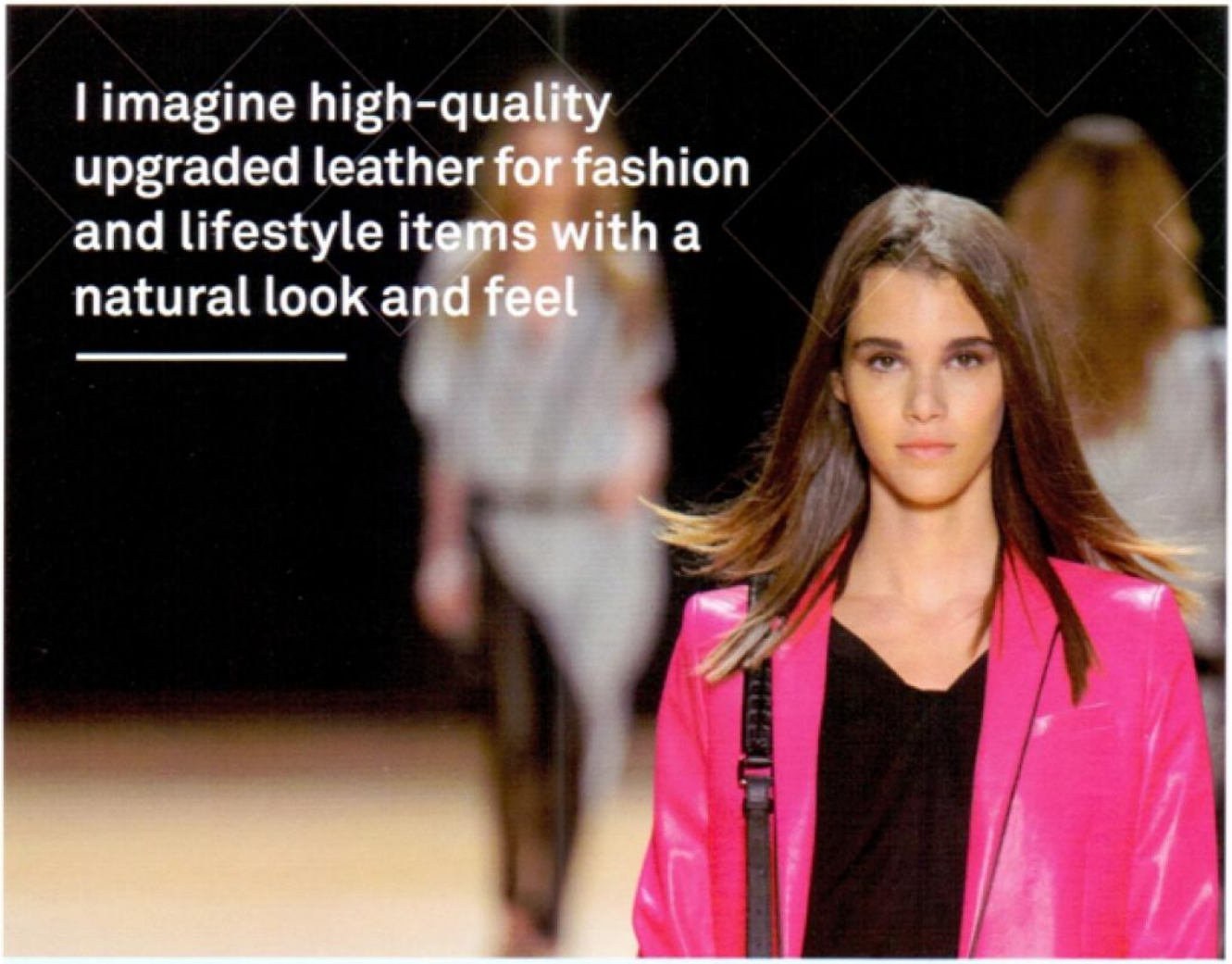


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**LEATHER EXPORTS RTISE 8% IN F.Y. 2019**

Chennai : India registered about 8% growth in export of leather, leather products and footwear during 2018-19 and is aiming to achieve 9% to 10% growth during the current fiscal, said a top industry body official.

"In the term, exports during 2018-19 grew to Rs. 36,562.34 crore from Rs. 33,894.71 crore in the corresponding year earlier period," said P. R. Aqeel Ahmed, Chairman, Council for Leather Exports (CLE).

"Though the exports have terms, it was similar to last year's level in dollar terms," he said. Though exports of finished leather and leather garments contracted in rupee terms in F.Y. 2019, the industry was able to achieve overall positive growth due to good growth levels shown by other segments such as leather footwear (8.98%), leather goods (13.78%), saddler and harness (10.74%) and footwear components (4.21%) he said.

For the current year, CLE aiming to achieve 9% to 10% growth, for which it has planned a 'comprehensive and extensive' marketing campaign involving more than 20 events.

These events would cover the traditional markets of Europe and potential markets such as Chile and Peru, Russia, Australia and Japan. Besides, reverse buyer-seller meets are planned in Delhi and Kolkata so as to provide a platform for exporters to meet overseas buyers in India, itself, he said.

"Over 90% of our leather footwear output is consumed in the domestic market. During F.Y. 2019, nearly 2.4 billion pairs of shoes of domestic and international brands were sold in the country and thus, we have become the second largest consumer of shoes after China due to the huge domestic opportunity. USA is in the third position." he said.

(Source : Hindu – 24.04.2019)

**COPS START DRIVE TO STOP BURNING OF LEATHER WASTE**

Police have started filing FIRs against those violating National Green Tribunal (NGT) orders by burning leather waste in the Dhapa area.

The latest to face police action was Naushad Ali (36), a resident of Beniapukur, who was nabbed by Anandapur police on Tuesday for burning leather waste along with a few others. "This is in violation of the NGT (principal bench) order (561/2013, page 33 clause (b)) and caused a serious pollution hazard.

The incident took place on an open field near Koila Depot. The sub-inspector of Anandapur police station has lodged a suo motu case," said an investigation officer.

Sources said police will keep Ali in custody but it will take more raids to get the unit owner who had ordered him to burn the waste.

"We have now formed specific teams to crack down on this illegal practice. Further investigations are on in the Koila Depot area," said an officer of the police station. Locals have been alleging that a host of illegal units process leather shavings in the area, which is right next to East Kolkata Wetlands, an ecologically sensitive Ramsar site.

These units burn and boil shavings dust (by products of fished leather products), flesh linings and trimmings to make fertilizer and fish feeds. Presence of chromium in these can pollute surface water and contaminate groundwater, stated an initial inspection report of the ministry of environment and forest in 2009.

The report had suggested immediate removal of dumped waste to the common solid waste disposal facility.

(Source : The Times of India – 25.04.2019)

**KANPUR LEATHER TANNERIES LOCKOUT STARES DOWN AT BJP**

The indefinite shutdown of the Kanpur tannery industry, which provides direct and indirect employment to about a million people, is staring down at the ruling Bharatiya Janata Party (BJP) in the industrial town of Kanpur, ahead of polling in the fourth phase on Monday.

The nearly 150-year old Kanpur tannery sector, part of the Rs. 12,000 crore of the composite Kanpur leather belt, which also includes adjacent Unnao district, were served with the notice for closure between December 15, 2018 and March 15, 2019 for ensuring cleaner Ganga during the 2019 Kumbh Mela at downstream Prayagraj (Allahabad).

However, even after the culmination of Kumbh last month, a majority of Kanpur tanneries remained shut as green watchdog

Uttar Pradesh Pollution Control Board (UPPCB) did not issue the requisite clearance certificate.

Kanpur, which was earlier referred to as the 'Manchester of the East' owing to a flourishing leather goods times.

(Source : Business Standard – 29.04.2019)

**BATA STYLES BRANDES FOR CASUAL LOOK**

Prague : Global footwear major Bata has reworked its strategy to keep pace with the demanding tastes of the millennials with their preference for casuals.

The company, which set up base in India in 1931's is focused on innovation with an eye on the millennials, who are those been between 1980 and 2000.

It has decided to revitalize some of its brands to keep pace with the current trends, backed by upgrading its four factories.

(Source : The Telegraph – 20.04.2019)

**CHINA'S LOSS IN SPECIALTY CHEMICALS BENEFITS INDIA**

Kolkata : China's loss is India's gain. At least, that's what, when it comes to chemicals, especially, specialty chemicals market. The downturn in China's chemicals and specialty chemicals market in the recent years, has come as a boon for the Indian chemicals and specialty chemicals industry, said a recent Crisil Research Report.

Traditionally, the European Union (EU) and the US were the key chemical hubs globally. Together they contributed nearly 40 per cent of global chemical sales till 2006. However, the 'Great Recession' of 2008 changed everything. Developing countries started faring better than the relatively mature economics of the West. Over the last decade, the core of the chemical industry has shifted from the West to Asia, with China being the key benefactor.

However, China's specialty chemicals market has seen a downturn in recent years, for more reasons than one, most prominent being the introduction of stringent environmental norms, which has led to the shutdown of several chemical plants. The labour cost (hourly cost of compensation) in China was lower than that of India till 2007. However, over 2005-2015, the average labour cost in China increased nearly 19-20 per cent CAGR, against 4-5 per cent CAGR in India. In fact, over the last five years, this cost has more than doubled compared with India, rendering Chinese manufacturers' uncompetitive vis-à-vis India in labour cost.

"The domestic chemicals industry in China is witnessing a slowdown as a result of an overall slower economic growth. Over the next 2-3 years, China's GDP is projected to grow at 6-6.5 per cent, against 8-10 per cent witnessed over the last decade(2009-2018). This slowdown would translate into lower off-take of specialty chemicals from large segments such as construction, automobiles, textiles and consumer durables.

(Source : Deccan Chronicle – 21.05.2019)


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# HUMAN APPEARANCE & CHANGE OF RIVER COURSES IN ANCIENT INDIAN SUB - CONTINENT

Dr. Buddhadeb Chattopadhyay

Former Principal of Govt. College of Engineering & Leather Technology, Kolkata
& Principal, MCKV Institute of Engineering, Liluah, Howrah, W. B.

All ancient civilizations like Indus, Egyptian, Babylon, Roman, Greek, etc. for obvious reasons of availability of plenty of water and animals, grew near some wetlands; be it at the bank of the river or river basins or near the sea shore. Thus it is important to study the change of the courses of the river to understand its impact on human settlement in one hand and the human intervention at the other.

From the various fossils found, it can be concluded that the earliest human species (*Homo habilis* or *Homo erectus*) evolved in the Salt Range (now in Pakistan) and the Siwaliks (India) about 2.0 Million years' ago, before the beginning of the geological epoch of Pleistocene. Except some geological features like, uplift of Himalayas and the maturation of Siwaliks, the other physical features of India were very much similar as that of at present. While other parts of the earth was very much affected by the repeated phases of glaciations, which was incidentally a regular feature in the entire 2.0 Million years of Pleistocene. India somehow was least affected. During the glaciations Ice sheet covered Himalaya down to a line running at about 1,800 m above the sea level, which is about 4,000 m today. The Himalayan glaciers then took over large upper section of river courses that they had previously fed, coming down to as low as 1,400 m above the sea level.

In India, the major result of glaciations in each Ice age was a great fall in sea level. It is believed that in the last Ice age in late Paleocene epoch, the sea level was between 100 and 150 m below the MSL. Such a retreat in sea level, affected both the Gulf of Kutch and the Gulf of Cambay became the stretches of dry land; Sri Lanka was joined to South India by a broad belt of land around Adam's Bridge. The North, Middle and South Andaman were a single island.

Such land bridges allowed the animals including Hominids and early members of own species to reach areas, which are now island. However, in between numerous inter glacial period, when warmth returned, the sea rose again to reclaim all of the lost land, just as it did after the beginning of the present Holocene epoch, 10,000 years ago. Within Holocene, which is really the present interglacial, the sea level was estimated to rise to a level of 3 m above present year during about 5,000 years ago and in such case, the Run of Kutch should have been a seasonal, shallow inlet of the sea and much of deltaic Bangladesh was under sea.

In spite of all those slow but dramatic changes three major regions of India were fixed in the same lats and longs as they are today. a) The southern peninsular block, which had long ago even before the continental drift obtained its present form, with its higher edge placed in the west and the plateau sloping down eastward, b) the Northern plains, built up of alluvium from Himalayas. The Aravalli Range with its spur thrown north-eastwards that divides the plains into two natural parts, namely, the Indus and Gangetic basins and c) The Himalayas, extending the whole way in the north, with associated mountain chains running down to seas, in the east and the west.

The physical map of India at the dawn of Pleistocene (1.8 Million years ago) and before the Ice age, could have been much different from the present days except minor change in the physical contours, coastlines and river systems. There could be a great difference in the way the river flowed in the Northern plains. It was certain that the Yamuna once flowed into the Indus, or the Sutlej flowed into the Yamuna. The simple proof is that both the Indus and the Ganga harbored same species of Ganges dolphins. This could only happen if, one of the major tributary of either had shifted from the Ganga to the Indus or vice versa, within the last Million years.

If, one forgets the human intervention on the Nature like irrigation to run the rivers dry, creation of large inland lakes or cutting or blasting away rocks, a major factor for change in land pattern has been severe earthquakes. These were caused due to the pressure of tectonic plates striking against each other, there by generating frictions of enormous magnitude in

Richter scale.The Himalayas lie along such a series of fault lines, and tectonic plates exerting pressure resulting pushing up of Himalayas may still be at work.

Much changes in the coastlines occurred during Holocene; at its beginning, some 10,000 years ago (8,000 BC). The estimated sea level was below 100 m as compared to the present level. As the large ice-sheet formed during last Ice-age melted, the sea level rose to roughly the present level by 5,000 BC thereafter the fluctuation had been on decreasing scale. It may be an interesting point to note since ice occupies more volume than the water from which it is formed (11 mL water produces 12 mL Ice). Then how come the sea water level increases when Ice sheet melts? Yes, ice is less dense than water. Water has also enough empty spaces, which attributes to its property as a good solvent. But when it is the sea water, it contains NaCl that is readily ionized to Na (+) and Cl (-) and they occupy the empty spaces as randomly distributed ring of water dipoles along with the ions. Fresh water has much of empty spaces, but not the saline sea water to the same extent. Thus the empty volume of water is already occupied by solute ions which cannot accommodate the extra water melted from ice-sheet, causing the rise in the sea level.

This may be an interesting insight from the famous physicist George Gamow why is the oceanic water salty? How did salt come to the oceans in such large amounts as we see it today? The answer is that the salinity of ocean water is the result of the work of the rivers. The rain water which precipitates on the surface of the continent is fresh, but running down the slopes of the mountains, hills, it erodes the surface rocks, washing away minute amount of salt and carrying them ultimately into the ocean. This small concentration of salt in river water gives it a pleasant taste, as can be experienced by anybody who has tried drinking distilled water. Some thousand Billion tons of water are evaporated daily from the surface of the ocean heated by the radiation of the Sun and the salt dissolved in it (say, about hundred Billion tons per day) are left behind in the ocean daily. The Water vapour in the atmosphere again condenses into clouds and a considerable amount of it precipitates as rain and falls back into the continents and a larger share into the oceans (which in fact, dilutes the salinity). Down runs the fresh rain water again, dissolving more salts on its way back to ocean. Thus water moves in an eternal cycle while salt moves only in one way, from the continents into the oceans, slowly increasing the salinity. Thus dilution and concentration balances somewhere so that over a considerable period of time the salinity of the oceanic water remained constant.

Knowing the total amount of salt dissolved in the ocean water at present, and the amount of salt brought in annually by rivers, one should be able, by simple division, to find out how long the rivers must have been operating to bring up the salinity of water from zero to its present value of about three percent. The figure for the age of the oceans obtained by this way is, however, uncertain. First of all, the rate of erosion during past geological epochs may not necessarily be the same as it is now. In fact we know that there was a long periods of time in the past when the continents were nearly flat. Older mountains washed away and newer yet to be formed. During those epochs the rate of erosions must have been considerably slower and less salt was brought annually by the rivers into the oceans. We cannot be sure that all the salt brought into the oceans, since their formation is still in water solution today. Large bodies of water could have been cut off from ocean basins and gradually evaporated, as the Great Salt Lake today, forming large deposits of rock salt. Because of great uncertainty in these two factors, this method of estimating the age of the oceans can give only approximate results and any exact figure based on it should be taken with a grain of salt. But making the plausible assumption concerning the erosion rates in the past and the amount of salt lost in the form of solid deposits, one can come to the conclusion that the age of the oceans must be some Billion years ago.

The fluctuations of the sea water level are the reason why trees are found submerged in the sea up to a depth of 4 m below the low water-mark east of Mumbai islands; and there had been subsidence on the north-western tip of Saurashtra coast, at Dwaraka, where some submerged Indus remains have been found (This may be one of the source of misbelief that the kingdom of Lord Krishna was under the sea water of Dwaraka. Krishna never existed during Indus valley Civilization.) On the other hand the deltas of alluvium-laying rivers have been advancing towards the sea, but in irregular manner. Where the main river discharge occurs the land advances, but simultaneously elsewhere previously deposited alluvium is encroached upon by the sea. The Ganges-Brahmaputra delta of Bangladesh, it is hardly possible for a map of deltaic islands made one year to stand the next.

As for rivers, their courses in the mountains and hill valleys remained fixed to within a narrow limit. This is valid during Holocene period more or less. The Indus had an almost fixed course between Salt Range on the east and Sulaiman Range on the west. Similarly Ganga and Yamuna in their upper courses

have excavated such deep beds for themselves below the surrounding plains, as make it seem unlikely that within the last 10,000 years or more they could have flowed in any direction other than the one that they take now. Some rivers of the Indus-Ganga plains have been known to change courses quite radically within last millennium itself. Such as Ravi used to flow east of Multan, but sometimes before the sixteenth century, it ran straight into the Chinab, north of Multan; same as it is now. The Beas after uniting with Sutlej separated again to run well north of it, a course once abandoned by it in the seventeenth century. The Kosi, in Bihar is notorious in changing course over a vast land area. In Bengal, the Tista abandoned the Ganges to flow directly into the Brahmaputra in eighteenth century, while Brahmaputra abandoned the great eastward curve of its main bed and now runs due south to join Ganga.

In the oldest Deccan peninsula, the rivers have been generally long narrow valley in the plateau and so it is only near the confluence that shifts of channels can occur. The Kaveri, after stable course, divides into two branches near Thiruchirapalli; of these, the Coleroon today carries the main river, but earlier the other branch, still carrying the river's name, was probably the main bed of river.

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# LINING MATERIALS FROM THE VIEWPOINT OF MANUFACTURE AND OF WEAR AND COMFORT PROPERTIES

By Benjamin B Levy

*This paper was presented at the fourth Congress of the Scientific Society of the Leather, Shoe and Allied Industries held in Budapest.* *The author is Vice President, Poron Sales. Rogers Corporation, Rogers, Connecticut. USA.*

BECAUSE there are a vast number of different types of materials used for shoe linings, this paper will concern itself primarily with the following three types.

1. Leather linings.
2. Non-permeable PVC or urethane coated fabrics. These are made with staturated paper substrates, woven cotton substrate or non-woven substrate.
3. Permeable or poromeric linings, made with either a woven cotton substrate or a non-woven substrate, the fibres of which are generally synthetic.

## Shoemaking procedures with leather linings

I will not dwell too much on this item because, as all of you know, leather linings have to be processed as they have for generations with no possibility for automation. Because of the non-uniformity of the shape, fibre and thickness of the skin, each piece must be cut separately and in many cases the piece must be levelled and/or skived.

## Non-permeable PVC linings

When these are made with a woven cotton substrate, then the top line must be bound, otherwise there is the great possibility of fraying. However, these materials can be cut in multiple thicknesses and can generally, although not always, be used in the cut and weld process. But there are many drawbacks to the use of this type of lining, especially in the comfort and health areas, as I shall point out later.

## Permeable or poromeric linings

As I have noted above, these are made on both a woven cotton substrate and non-woven synthetic fibre substrates. Here again when the former substrate

is used, one must bind off the top line In general, there are two types of poromeric linings. One is produced by incorporating a blowing agent in the plastisol which is activated during the curing process. This process results in holes of widely varying diameter, many of which do not go through the thickness of the coating. This results in water vapour transmission capabilities all the way from poor to medium, and with low air permeability.

The other type, of which Poron is alone, is produced by patented sintering processes which result in uniform pore size, high water vapour transmission and air porosity.

Because of the uniform nature of these products, they can, of course, be cut in multiple thicknesses and require no skiving or levelling which result in substantial labour savings. Add to this 15 per cent improvement in yield and you have tremendous economies.

Technology in the production of non-wovens is such that we can build in various stretch characteristics and we can control that stretch so that more sophisticated and multiple operation lasting machines can be used without varying the settings. Electronic welding is also possible. Fitting machines do not need constant adjustment. All of these result in tremendous productivity increases with resultant decrease in costs.

Increasing use of uniform promeric linings is encouraging the shoe machinery industry to design more automated equipment. These will add still more to increased productivity and decreases in costs, all of which are so important in a competitive market where, with increasing population, the subsequent increasing demand for footwear can be met at reasonable prices to the consumer. I might further add that less skilled operators would be required which, again, reduces costs.

Now, let us get to the wear and comfort properties of the linings in question. Suppose a skilled shoe engineer were assigned to develop and construct the ideal or perfect shoe lining material. He would take several logical steps.

First, he would determine the basic functional purposes of shoe linings. Second, he would list all of the conditions of the foot and shoe to which the lining was subjected during wear. Third, he would list the important requirements of shoe linings as seen from the standpoint of the shoe manufacturer, the shoe retailer, and the consumer or shoe wearer.

He would now be ready to develop and construct the ideal shoe lining

material. However, this logical series of steps has never been undertaken by the makers of traditional or conventional lining materials. This applies in the case of leather, fabrics or textiles, and coated vinyl materials. None of these was ever developed specifically as a shoe lining material ; that is, constructed exclusively to meet all the unique wear conditions to which linings are normally subjected. These materials were simply "adapted" to serve as shoe liners as best they could within the limitations of their physical character. As shoe lining materials, they have done their work to varying degrees of efficiency—from poor to good. None of them, however, qualifies as the ideal shoe lining material.

**Requirements for the ideal shoe lining**

Let us see what our shoe research engineer has found. He has learned that a shoe lining must serve four particular purposes.

1. It must contribute to efficient shoe performance.
2. It must contribute to the hygiene and comfort of the foot.
3. It must meet the aesthetic requirements of fashion and style.
4. It must be economical and easily workable in the shoemeking process.

At first glance it would seem that traditional lining materials—leather, cloth and vinyls—could meet these basic requirements. But now our shoe research engineer has investigated these requirements further. He now draws up a list of very specific needs for the ideal shoe lining material. They are as follows.

1. The materials must absorb and transmit foot moisture easily and quickly.
2. It must resist abrasion with wear.
3. It must resist discoloration with wear.
4. It must resist hardening and cracking with wear.
5. It must remain smooth, mellow and soft with wear.
6. It must resist foot and shoe odours caused by perspiration.
7. It must be light weight and flexible.

8. It must be thin enough to prevent bulkiness, yet plump enough to have a cushion effect against the foot.

9. It must be resistant to mould or fungus growth in the shoe.

10. It must hold its shape with wear—and also help the shoe itself to retain its shape with wear.

11. It must be non-cracking and non-shrinking.

12. It must have uniformity of thickness, colour and surface texture.

13. It must be washable to maintain good hygienic conditions.

14. It must be easily adaptable to all types of footwear.

15. It must have aesthetic appeal—colour fastness, a look of quality, fine surface texture, etc.

16. It must be economical for use by the shoe manufacturer.

17. It must have advantages in the shoemaking process to result not only in economies but an improvement in the shoe itself.

This is obviously a long list of challenges for any shoe material. Each of the conventional linings—leather, cloth, vinlyl materials—have met some of these requirements. None has met all of these requirements.

It has been the poromeric materials—but especially the poromeric materials developed exclusively for shoe lining materials—that come closest to being the ideal shoe lining material.

Now, let us look inside the shoe and see the variety of conditions that exist there—conditions which create a particular climate within the shoe. When shoemen, doctors and consumers speak of "shoe comfort" or "wear satisfaction", they are really referring to the climatic conditions within the shoe which affect the comfort and wear of the shoe. Here are these conditions.

**Thermal.** This is the inside shoe temperature, which averages between 40° and 48°C. The lower the temperature, the more comfortable the shoe. The proper lining is important to maintaining proper thermal conditions.

**Humidity.** This is a condition where warm air and warm moisture combine to create a sticky dampness within the shoe and an uncomfortable feeling for the foot. A proper lining minimises this condition so that comfort is assured.

**Perspiration.** The inside of the shoe is subjected not only to a constant flow of moisture, but also a variety of acids and salts that are a natural part of this moisture or perspiration. The shoe's lining must not merely absorb and pass off this moisture, but must be resistant to the deteriorating effect of the acids and salts within the moisture.

**Friction.** The average foot flexes and slides within the shoe about 6,000 times a day. This friction develops heat which contributes to shoe and foot discomfort. A proper lining can and does minimise this friction, thereby reducing heat build-up and resulting in a cooler, more comfortable shoe.

**Aeration.** The inside of the shoe must have a built-in air-conditioning system to help keep the shoe and foot cool and dry. The inside materials such as the linings must not only be moisture-absorbent but porous to permet passage of air through the material.

**Pressure points.** Certain parts of the shoe normally receive more pressure and stress from the foot in action. For example, the backpart of the counter and quarter lining receiving stress from the pronating heel of the foot with each step, the pressure on the ball area of the insole ; the vamp lining because of the thousands of flexings of the foot daily across the vamp of the shoe. The inside materials covering these pressure or stress points must be resistant to abrasion, cracking and other breakdowns.

**Darkness.** Darkness, combined with warm air and warm moisture, create the ideal environment for the rapid growth and spread of harmful bacteria which have destructive effects inside the shoe. The need for bacteria-resistant lining materials is of obvious importance.

**The effects of foot perspiration**

The average pair of feet will give off half pint (249 cc) of perspiration a day, or almost two quarts (1.9 litres) a week. Over an eight-month period of steady shoe wear, the shoes will emit some 58 litres of perspiration. This amount of perspiration will be even greater in warm of humid weather ; or under conditions of greater foot activity or with persons who have an above average perspiration rate.

About 60 per cent of this enormous and constant outflow of foot perspiration

is absorbed by the insole and lining and shoe upper material. The rest is evaporated by the shoe's flexing or pumping action in walking.

It is generally assumed that the various ill effects of perspiration on the shoe are due mostly or solely to the moisture itself. While this is partly true, what is less appreciated is the fact that the chemical content of perspiration makes a very important contribution to the harmful effects on the shoe and its materials. Perspiration contains such chemical elements as urea and uric acid, lactic acid, ascorbic acid, acetic acids, nicotinic acid, butyric acid, fatty acids, ammonia, thiamine, and several salts, Unless perspiration is quickly absorbed and transmitted throug the lining and upper materials, these chemicals rapidly convert into bacterial action which attack the fibres of leather and fabrics, causing them to become brittle and weakened, and then to fray or split or crack.

While special chemical treatment of leather and cloth linings can increase resistance to such attacks. it is usually only a temporary and partial measure. The most successful resistance to the effects of perspiration within the shoe is a lining material which has a natural resistance to perspiration—and which remains smooth, soft and new-looking throughout the life of the shoe. The poromeric lining delivers this kind of anti-perspiration performance.

When you are dealing with any material composed of natural fibres. such as leather, these fibres are always subject to erosion and decomposition from bacterial attack. The conditions prevailing inside the shoe during wear are highly conducive to rapid growth of bacterial colonies. The fibres in the leather lining or insole are constantly on the defensive, but rarely with any prolonged success. These fibres are natural food for the bacteria, and the breakdown of the fibre network is almost inevitable.

**The lining and shoe hygiene**

The average person is very sensitive about offensive foot odours. He bathes his feet frequently, changes his hose, and often will use such items as foot powders or special soaps of lotions to reduce or prevent foot odours.

But few persons, including shoemen, realise that it is far more often the shoe, and not the foot, that is chiefly responsible for offensive odours. Thus, when we speak of "foot hygiene" we should, more realistically, be speaking of shoe hygine.

When perspiration reaches the surface of the skin, it is almost odourless,

Odour develops only when bacteria, normally present on the surface of the skin, causes a breakdown in the structure of the perspiration itself. This takes a few hours, and suddenly a strong odour becomes evident. This condition is worsened by bacteria that are lodged in the leather or cloth lining, and are decomposing the fibres therein.

The remedy or preventive, obviously, is to eliminate or reduce this bacterial action to a harmless level. First, the foot perspiration must not be allowed to accumulate on the skin, it must be rapidly evaporated or absorbed by a highly moisture-absorbent lining. Also very important, the lining material itself must be highly resistant or impervious to bacterial action so that there is no rotting or erosion of the material to create an odour. Thus, most of the common foot and shoe odours can be eliminated or sharply reduced by creating anti-bacterial conditions within the shoe—such as lining materials that are naturally anti-bacterial to begin with. The poromeric lining is ideally suited for this important function.

The accumulation of moulds or fungus inside the shoe is a common consequence of shoes that are constantly in a damp or semi-damp condition. When moisture is combined with heat, darkness and soil—conditions that commonly prevail inside the worn shoe—it provides the most encouraging setting for the rapid development of bacteria and the formation of mould and fungi. These moulds, in turn, bring about a rapid deterioration of leathers and cloth fibres.

The obvious solution is a shoe interior that discourages rather than encourages the conditions leading to formation of bacteria and moulds. The poromeric lining again shows its strength here. It is highly moisture-absorbent, and strongly resistant to bacterial attack. And further, it is washable and quickly dryable. This eliminates much of the accumulated soil or grime on which bacteria normally feed inside the shoe.

**Limitations of leather linings**

Traditionally. the leather lining has been regarded as the "model" for good inside shoe performance. This has been due chiefly to two factors : (1) the good ability of leather to absorb and transmit moisture ; (2) the almost monopoly position held by leather for many years due to the absence of suitable alternatives.

But in recent years their has been a drastic change in this situation. Despite certain assets of leather linings, such as "breathability", these same linings have always been known to have numerous shortcomings. Also. the arrival of newer man-made materials, particularly poromerics, has given the shoeman not only an alternative but a superior selection.

Over the years, numerous articles in the "Journal of the American Leather Chemists' Association", have discussed the weaknesses inherent in leather linings and the causes of these weaknesses. The failures are due primarily to the inability of leather to combat the debilitating effects of perspiration. For example, the journal reports that :

Perspiration de-tans leather by the alkaline decomposition products produced by bacteria. In short, the original tanning process that makes leather, is counteracted by a detanning proces by bacteria. As one leather chemist states, "Perspiration actually strips the chrome off chrometanned leather".

The action of perspiration removes the protective oils and water soluble material in leather.

Bacteria from perspiration live off the starch and tanning fats in the leather lining, and later in the leather shoe upper, causing the leather to dry out, then crack.

The chemical elements of persiration individually attack leather. For example, lactic acid helps to de-tan and to ultimately convert leather to "sliny particles", urea induces powdery, brittle states in the leather salts in perspiration make leather hard and stiff and cause discolouring.

But what of the vinyl-type lining which have found some popular use, especially in lower-priced shoes, primarily because of their low cost ? From the standpoint of meeting some of the more important requirements of the ideal lining material, vinyls can be easily dismissed.

For example, in the highly Vital factor of absorption and transmission of foot moisture, the vinyl lining rates lowest of all lining materials, and is virtually a roadblock to an ideal climate inside the shoe. In one Satra study it was shown that with each walking step. moisture is pumped or forced form the area beneath the foot. This moisture condenses on the sides or linings of the shoe because of the lower temperature there. States Satra :

"The high concentration of moisture in the toe and counter regions suggests that it would be very helpful if permeable materials were available for these areas in the shoe."

If economy is the sole consideration, then the vinyl serves a practical purpose. If, however. such factors as comfort, wear satisfaction and shoe performance are to be considered, the vinyl lining must be relegated to an inferior position,

## Shoe Performance and the lining

One of the most important functions of the lining is to improve the overall performance of the shoe. This results in what the shoeman and consumer calls "wear satisfaction".

The first obvious condition is this : If the lining contributes importantly to shoe performance, then the lining itself must deliver an excellence of performance. We have seen the performance limitations of leather cloth and vinyl linings. The poro[illegible]eric lining, therefore, remains as the model of stuctural and functional excellence.

Perhaps the best way to view the functional importance of the lining to the functional performance or wear satisfaction of the shoe, is to see the shoe in action without a lining.

Unlined shoes have enjoyed some popularity from a fashion standpoint. For examp'e in some types of "casual" or leisure-type footwear ; or in certain types of boots, or in moccasins etc. But in most cases these shoes have required heavier upper leathers. In other instances, some stylists have sought to create a "soft look" in footwear by eliminating the lining so that there is a minimum of upper material, thus creating a lightweight and "soft" feeling. And lastly, there are some manufacturas who seek to eliminate the lining as a matter of sheer economy. However one reality must be faced. The lining contributes importantly to the functional stability of the shoe. Functional stability translates into shape retention of the shoe with wear, plus longer life to aesthetics and appear-ance of the shoe. To deny the shoe such a natural component as a lining, is to deny the consumer the full value that is expected and paid for. Some thing is lost to the structural integrity and performance efficiency of the shoe. Let us take a quick look at some of the common consequences of the unlined shoe in relation to lessened shoe performance.

Without the lining present as a buffer against prespiration, heat, humidity, friction and other forces, we often see—

(a) Faster deterioration and cracking of the shoe upper material.
(b) Faster discolouration of the shoe upper.
(c) Faster loss of shoe shape, with lessened aesthetic appeal.
(d) Less comfort for the wearer.
(e) Lowered hygienic conditions (stronger foot and shoe odours. etc).
(f) Reduced wear satisfaction.

## The merchandising values of linings

The lining must be seen in its proper light. It is value added to the shoe. We have cited the various different purposes of linings and how they contribute to comfort, wear satisfaction and shoe performance. We have shown also that to achieve these values not just any lining material is suitable, but that all-around excellence should be sought in such a material. Then you have genuinely added value to the shoe. These values can be merchandised to the consumer. It is rare or seldom that the shoe store or the shoe clerk talks about the lining to the consumer or customer ; that is, cites and explains the importance and value of the lining to the worth and wear satisfaction of the shoe. If and when this is done, the result is greater customer appreciation for value received. This can be called consumer education. But it is also merchandising.

## The superiority of poromeric linings

The superiority of the poromeric lining—and particularly the poromeric lining as our own company developed it—is based on the fact that this is a lining created not by "accident" but on purpose. Back to our shoe research engineer. If he had set out to develop and construct the ideal shoe lining material, he would have inevitably concluded with a poromeric material and one based on the principles established by our own unique Poron material. What is unique about this material ? What qualifies it to be the ideal shoe lining material ? Here are the answers, based upon several years of commercial reality with the product, and demonstrated were satisfaction with many millions of pairs of men's, women's and children's shoes.

1. A virtually indestructible material with extremely high resistance to abrasion.
2. Remains soft and supple for the life of the shoe.
3. Is colour-fast, with no crocking to stain stockings.
4. Does not acquire or retain odours.
5. Lightweight and flexible.
6. Will not support mould or fungus growth.
7. Absorbs and transmits perspiration or foot moisture excellently.
8. Is highly porous for ventilation.
9. Will not shrink or curl with wear or after drying.
10. In washable with soap and warm water for hygienic conditions.
11. Will not crack, harden or become brittle with wear.

12. Uniform thickness throughout, thus eliminating waste, providing a 15 per cent higher yield and eliminating operations attendant to leather linings.

13. Will not fray at the edges.

14. Has easy workability in the shoe factory.

15. Is always cool, dry and comfortable against the foot.

16. Lends itself readily to automation and cost reduction.

There is an old saying: "Out of sight, out of mind". In the past, some shoemen have tended to see shoe linings in this way. They have sometimes neglected the lining because it is not immediately noticed by the eye. But it is immediately noticed by the foot and by the shoe. And in the final analysis this is the primary function of the modern shoeman—to create the best possible conditions of "climate" inside the shoe for maximum comfort and wear satisfaction. In this respect, a good lining such as Poron is one of the best friends a foot and shoe can have.

# INDIAN LEATHER PRODUCTS ASSOCIATION

**The Indian Leather Products Association (ILPA)**, established in 1987, is a premiere representative body of manufacturer-exporters of superior quality leather and leather products with head office in Kolkata and a regional office in Chennai.

## IMPORTANT ACTIVITIES OF ILPA :

- Brings together manufacturer & merchant exporters on a common platform.
- Stimulates growth & development of the industry as a whole.
- Promotes export of leather & leather products.
- Develops & maintains symbiotic liaison with international trade bodies & Chambers of Commerce.
- Organises trade delegations to international fairs & seminars.
- Organises various Seminars/workshops both the benefit of its members and industry.
- Promotes International Fairs and RBSMs like IILF Kolkata, ILPA Buyer Seller Summit.
- Organises the ILPA SHOW : Leather on the Ramp , one of the most prestigious and sought after Fashion event in Eastern India.
- Closely involved in setting up the Calcutta Leather Complex(CLC).
- Runs and manages the Freya Design Studio : a CLE award winning Design Studio both for leather goods and footwear.
- Runs and manages the ILPA INFRASTRUCTURE DEVELOPMENT FOUNDATION (IIDF) – a state of the art Common Facility Centre.
- Imparts Skill Development Training through ILPA Technical School.

Common Facility Center

Design Studio

CAD CAM Center

ILPA Technical School

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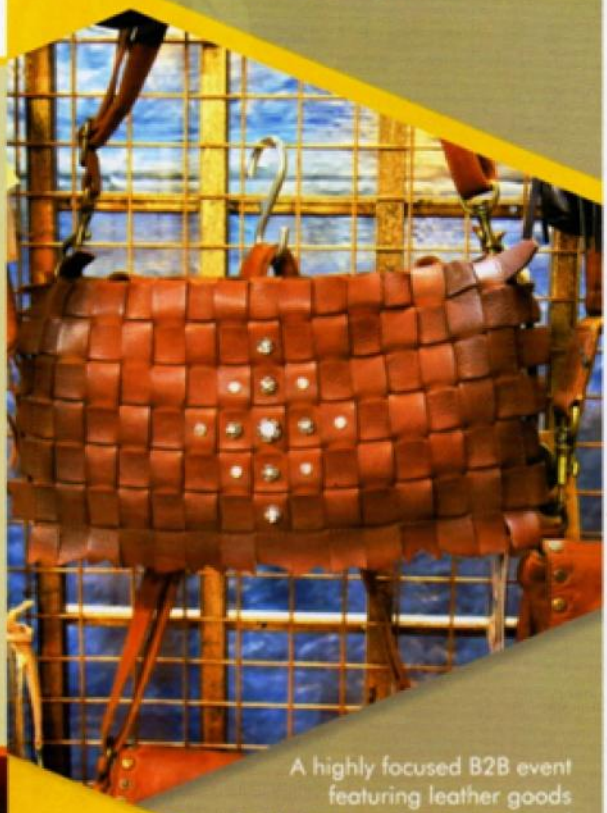

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## ECONOMIC ACTIVITY CLEARLY LOSING TRACTION : RBI GOVERNOR AT MPC


There are clear evidences of economic activity losing traction, as the GDP growth in Q4FY19 slowed down to 5.8%, Reserve Bank of India (RBI) governor Shaktikanta Das said while voting for a 25 basis points (bps) rate cut along with five other members in the June monetary policy meet.

The six-member monetary policy committee (MPC), which unanimously voted for a rate cut for the third time in 2019 and a shift in stance in the meeting, expressed concerns over the weakening economic growth which warranted the rate cut and expects inflation to remain below 4%, according to the minutes of the meeting.

"Growth impulses have clearly weakened, while the headline inflation trajectory is projected to remain below 4% throughout 2019-20 even after considering the expected transmission of the past two policy rate cuts," he said.

The overall transmission of the rate cuts amounted to a fall of 21 basis points (bps) in the weighted average lending rates of fresh rupee loans. However, the weighted average lending rate on outstanding loans has increased by 4 basis points. "Going forward, the transmission is expected to improve, given the lags with which banks adjust their deposit and lending rates in response to changes in the policy rate," added Das.

RBI deputy governor Viral Acharya expressed concern over the inflation outlook and fiscal slippage. "The upcoming union budget is, therefore, key to understanding the inflation outlook, especially the response to ongoing distress in the agrarian economy, caused in part by low food prices and reflected in low rural inflation of less than 2% compared to urban inflation that remains above 4%," said Acharya.

*(Financial Express – 21/06/2019)*

## STATE SHOULD HAVE POWER TO DETERMINE MINIMUM WAGES AS NATIONAL MINIMUM WAGES WILL AFFECT JOB CREATION : SAYS CII

CII says minimum wages fixed by states should be based on three criteria - geographic location, skill and occupation. However, it cannot be lower than the minimum wage fixed by the Centre.

Industry body CII Sunday said states should have the power to determine minimum wages as the concept of a national minimum wage will affect job creation. According to sources, the labour ministry is likely to seek Cabinet approval for the Code on Wages Bill next week as it pushes for its passage in the ongoing Parliament session.

CII says minimum wages fixed by states should be based on three criteria – geographic location, skill and occupation. However, it cannot be lower than the minimum wage fixed by the Centre. "The concept of a national minimum wage will affect job creation, so it is necessary to give states power to fix their own minimum wages," CII said.

The industry chamber suggested that the government should fix minimum wages of unskilled workers. However, wages of skilled and semi-skilled labour force should be determined by market forces. The Code on Wages Bill provides that the central government will fix minimum wages for certain sectors, including railways and mines, while states would be free to set minimum wages for other category of employments.

The Code also provides for setting of a national minimum wage. The central government can set separate minimum wages for different regions or states. The draft law also says that the minimum wages would be revised every five years. Besides, CII called for a comprehensive National Employment Mission and setting up of an inter-ministerial and all-state National Employment Board to drive job creation in the country.

The chamber suggested that the government should set up a National Employment Board that would include representatives of key ministries, state governments, industry experts, and trade unions and other stakeholders to look into employment creation hurdles and address them on a real-time basis.

To encourage more women to participate in the workforce, CII recommended providing child care and maternity benefit subsidies under the Maternity Benefit Amendment Act. While industry is not asking for a hire-and-fire policy, a more flexible labour regime would enable India to align with multiple global trade challenges at a time when other nations are attracting new investments, said CII.

"Employment generation extends to multiple dimensions and a national mission is required to address all aspects holistically. The National Employment Mission should include flexibility in hiring, tax incentives, education and skill development and promotion of labour-intensive sectors," CII Director General Chandrajit Banerjee said.

CII outlined a five-point agenda for the Budget to be unveiled on July 5 by Finance Minister Nirmala Sitharaman. It suggested that states which introduce Fixed Term Employment and other labour law reforms should receive priority in new central government infrastructure project funding.

*Business Standard – 24/06/2019)*

**GST COUNCIL EXTENDS RETURN FILING DATES – AADHAR TO BE ACCEPTED FOR GST REGISTRATION**

Easing the enrolment process for new firms, the Council decided to allow the use of 12-digit Aadhaar number for getting GST registration.

In a major relief to trade and businesses, the GST Council, in its first meeting after the PM Narendra Modi government came back to power, extended the cut-off date for filing annual returns, by two months, to August 2019.

Easing the enrolment process for new firms, the Council decided to allow the use of 12-digit Aadhaar number for getting GST registration. In order to check tax evasion, it also made it mandatory for multiplexes to issue e-tickets.

The Council, chaired by Union Finance Minister Nirmala Sitharaman, extended the tenure of National Anti-Profiteering Authority by two more years to ensure companies pass on the benefits of lower GST rates to consumers.

Addressing a press conference after the meeting, Revenue Secretary Ajay Bhushan Pandey termed the decision as consumer-friendly.

"In order to ensure GST rate cuts are actually passed on to customers and no anti-profiteering takes place, the current provision is that only the penalty of Rs. 25,000 will be imposed in addition to the profiteered amount.

So, the change approved by the Council is that now if profiteered amount is not deposited within 30 days, then the penalty to the extent of 10 per cent of the profiteered amount will be imposed on the company," he said.

The Council, however, deferred the decision on lowering the GST rate on electric vehicles from 12 per cent to 5 per cent and referred the issue to a committee of officers for further analysis. The issue of lower duty on electric chargers would also be discussed by the committee before taking a final call.

"Both these issues and the third proposal, on reducing the rate on the leasing of electric vehicles have been sent to the fitment committee, and it will deliberate on these proposals and come back to the GST Council on these proposals," the Revenue Secretary said.

Hectic lobbying by cement companies and builders, however, failed to convince the apex indirect tax body to cut the GST on cement from 28 per cent to 18 per cent. The automobile sector also did not get any relief from the GST Council.

*(ND TV – 21/06/2019)*

## GST: B2B INVOICES WILL HAVE TO BE GENERATED ON GOVT. PORTAL BY SEPTEMBER


The move will help in curbing Goods and Services Tax (GST) evasion through issue of fake invoices

All invoices for business-to-business sales by entities beyond a specified turnover threshold will be generated on a centralised government portal by September, a move aimed at curbing the menace of fake invoices and evasion of GST, officials said.

The revenue secretary is monitoring the progress of implementation of electronic or e-invoice project for which an officers' committee has already been set up, they added.

"E-invoice for B2B transactions will be rolled out in next three-four months in a phased manner. The entire invoice would have to be generated on a government portal," an official toldPTI.

The move will help in curbing Goods and Services Tax (GST) evasion through issue of fake invoices. Besides, it would make the returns filing process simpler for businesses as invoice data would already be captured by a centralized portal.

"Once rolled out, the e-invoice project will allow businesses to simultaneously generate e-way bill, if needed," the official added. E-way bill is required for moving goods exceeding Rs 50,000.

Depending on the success of the project in the B2B segment, the revenue department would be looking at extending it to business-to-consumer (B2C) sales, especially in sectors where the probability of tax evasion is high.

Businesses beyond the specified turnover threshold, to be decided later, would be provided a software which will be linked to the GST Network (GSTN) or a government portal for generating e-invoice. The threshold can also be fixed on the basis of the value of invoice.

The e-invoice generation method will be similar to the one being followed for e-way bill on the 'ewaybill.nic.in' portal or payment of GST on the GSTN portal.

A 13-member officers' committee, comprising central and state tax officials as well as the GST Network Chief Executive, has been set up to look into the feasibility of introducing e-invoice system to streamline generation of invoices and easing compliance burden. The committee will finalise its interim report this month.

The proposed 'e-invoice' is part of the exercise to check GST evasion. With almost two years into GST implementation, the government is now focussing on anti-evasion measures to shore up revenue and increase compliance.

There are over 1.21 crore registered businesses under the GST, of which 20 lakh are under the composition scheme.

*(Business Standard – 05/05/2019)*

## INDIANs' MONEY IS SWISS BANKS FALLS, HITS SECOND LOWEST LEVEL IN TWO DECADES


Money parked by Indian individuals and enterprises in Swiss banks, including through India-based branches, fell by nearly 6 per cent in 2018 to 955 million Swiss francs (about Rs 6,757 crore) to hit its second-lowest level in over two decades, Swiss National Bank data showed Thursday. Aggregate funds of all foreign clients of Swiss banks also fell by over 4 per cent to CHF 1.4 trillion (nearly Rs 99 lakh crore) in 2018, as per the annual

banking statistics released by the Zurich-based central banking authority of Switzerland. However, the 'locational banking statistics' of the Bank for International Settlement (BIS), which the Indian and Swiss governments had said last year was a more reliable measure for deposits by Indian individuals in Swiss banks, showed a greater fall of 11 per cent for 2018.

According to the SNB, its data for 'total liabilities' of Swiss banks towards Indian clients takes into account all kinds of funds of Indian customers at Swiss banks, including deposits from individuals, banks and enterprises. This includes data for branches of Swiss banks in India, as also non-deposit liabilities. The funds, described by the SNB as 'liabilities' of Swiss banks or 'amounts due to' their clients, are the official figures reported by the banks and do not indicate the quantum of the much-debated alleged black money held by Indians there.

The official SNB figures also do not include the money that Indians, NRIs or others might have in Swiss banks in the names of entities from different countries. The SNB data had shown the total liabilities of Swiss banks towards Indian clients rising by over 50 per cent in 2017 to CHF 1.01 billion (Rs 7,000 crore), reversing a three-year downward trend.

However, the quantum of such funds has fallen again in 2018 to CHF 954.71 million, which includes about CHF 15 million held through fiduciaries or wealth managers. This is the second-lowest total since CHF 723 million recorded over two decades ago in 1995. The lowest ever amount of CHF 675 million, ever since Switzerland began making the data public in 1987, was recorded in 2016. As per the latest figures, the total customer deposits of Indian clients rose to CHF 572 million in 2018, but funds held through banks fell to CHF 104 million, while money parked through securities and other instruments and via fiduciaries also declined.

On the asset side, Swiss banks saw a marginal increase in the amount due from their Indian customers to CHF 212 million (from CHF 210 million in 2017). In comparison, the BIS data showed that the total amount outstanding to non-bank or individual Indian clients of Swiss banks fell to USD 84.6 million at the end of 2018 (by 11 per cent from USD 94.8 million at the end of 2017). The fall was much larger at 44 per cent during 2017. The BIS publishes quarterly figures, which shows that these funds rose during the first quarter of 2018 (to USD 100.9 million), but declined in the three remaining quarters of the year. The annual SNB data has shown a decline four times during the last five years.

The fall was the maximum at 45 per cent in 2016. The funds held by Indians through fiduciaries alone used to be in billions till 2007 but began falling after that amid fears of regulatory crackdown. The total funds held by Indians with Swiss banks stood at a record high of CHF 6.5 billion (Rs 23,000 crore) at 2006-end, but came down to nearly one-tenth of that level in about a decade. Since those record levels, there has been a rise only three times — in 2011 (12 per cent), 2013 (43 per cent) and then in 2017.

A new framework has been put in place for automatic exchange of information between Switzerland and India to help check the black money menace with effect from January 1, 2018. Detailed financial information on all Indian residents that have an account maintained by a Swiss financial institution in 2018 will be provided for the first time to the Indian tax authorities in September 2019 and on a yearly basis thereafter. The information would also include accounts that would be closed during 2018. While Switzerland has already begun sharing foreign client details on evidence of wrongdoing provided by India and some other countries, the new framework would expand the cooperation.

A number of strategies have been deployed by the government to combat the stashed-funds menace, in both overseas and domestic domain, which includes enactment of a new law, amendments to the Anti-Money Laundering Act and compliance windows for people to declare their hidden assets. The tax department had detected suspected black money running into thousands of crores of rupees post investigations on global leaks about Indians stashing funds abroad and has launched prosecution against hundreds of them, including those with accounts in the Geneva branch of HSBC.

As per the SNB, there were 248 banks in Switzerland at the end of 2018, of which 216 reported a profit while 32 suffered losses. Their aggregate profit rose to CHF 11.5 billion, but overall balance sheet size decreased slightly to CHF 3.2 trillion. Domestic customer deposits rose by CHF 30.3 billion to CHF 1.22 trillion, while foreign customer deposits were down slightly to CHF 591.1 billion. There was an increase of 16 per cent in fiduciary funds administered by banks in 2018 to CHF 160 billion, but remained much below the high of CHF 482.9 billion set in 2007. The number of staff declined by 1,547 to 107,388.

*(Financial Express – 27/06/2019)*

**PRESSURE ON FISCAL FRONT, ECONOMY HAS HIT A SOFT PATCH : SAYS RBI**


India's financial system is stable because of the "improving resilience" of its banking sector, said the country's central bank on Thursday as it flagged a widening current account deficit and the state of the global economy.

"Domestic economy hit a soft patch recently as private consumption, the key driver of GDP, turned weak. This along with subdued new investment pipeline and a widening current account deficit have exerted pressure on the fiscal front," said the Reserve Bank of India (RBI) in its financial stability report.

Sluggish economic growth "warrants greater cooperation" between fiscal and monetary policies, said the report.

The RBI cut its policy interest rate by 25 basis points on June 6, while also changing its policy stance to "accommodative," after latest data showed the economy growing at its slowest in over four years.

*(Business Standard – 27/06/2019)*

**BUDGET 2019 : TAX ON CAPITAL GAINS MAY CONTINUE THIS YEAR – SAYS REPORT**


The 10 per cent long-term capital gains (LTCG) tax imposed on profit above Rs. 1 lakh in the last Budget will, in all probability, continue in this year's Budget, sources said.

The sources said that there were neither chances of a hike above 10 per cent nor of an increase in exemption limit above Rs.1 lakh. The long-term capital gains tax was imposed on shares being held for more than one year. Investors in equity-oriented mutual funds were also included in the LTCG tax net.

However, all gains up to January 31, 2018 were grandfathered by government. This tax was re-introduced after a gap of 14 years. Any reduction in the LTCG or removal or a hike in its exemption limit from Rs. 1 lakh could boost capital markets, which have turned dry since January 2018 amid multiple domestic and global issues — that's the thinking in the D-Street. The industry hopes Sitharaman would remove the LTCG tax completely, or cut the rate.

Market participants are now worried over the possibility of a hike in the long term capital gains (LTCG) tax to increase revenue of the government. Some of them had also in their pre-Budget meeting told FM to withdraw it as they already pay securities transaction tax. Any increase in LTCG tax is expected to reduce gains in the benchmark indices Sensex and Nifty this year.

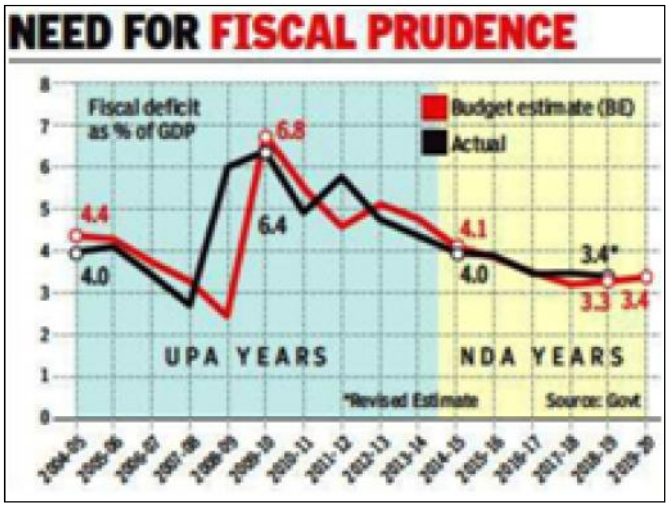
After the announcement in last Budget, the government had said that currently the amount of income earned from the stock markets that is exempt from this tax works out to Rs. 3.76 lakh crore which would translate into a tax collection to the tune of Rs. 37,000 crore. Finance Minister Arun Jaitley had re-introduced LTCG tax on equity in his last budget. Mutual fund players say government should roll back LTCG tax as the tax collection was not "significant".

So far the amount collected from such a tax has not been given by the government. "In view of grandfathering, this change in capital gain tax will bring marginal revenue gain of about Rs.20,000 crore in the first year. The revenues in subsequent years may be more," former Finance Minister Arun Jaitley had said.

In the 2018 Budget, government had imposed 10 per cent levy on capital gains of over Rs. 1 lakh without the benefit of indexing, making it co-exist with the securities transaction tax or STT. The then Finance Secretary Hasmukh Adhia had said the total STT collection is very small at Rs. 9,000 crore.

*(ND TV – 28/06/2019)*

**FISCAL DEFICIT TOUCHES 52 % OF FULL YEAR TARGET IN FIRST 2 MONTHS**




Although the Government has set a fiscal deficit target of 3.4% for 2019/20, same as 2018/19, the fiscal deficit touched 52 (%) per cent of the budget estimate for the full year in the first two months of 2019-20.

Net tax receipts in the first two months of the fiscal year were 1.15 trillion rupees, while total expenditure was 5.13 trillion rupees, government data showed.

In absolute terms, the fiscal deficit or gap between expenditure and revenue, was Rs 3,66,157 crore, as per the data released by the Controller General of Accounts (CGA).

The fiscal deficit was 55.3 per cent of 2018-19 budget estimate in the year-ago period. In the Interim Budget passed in February, the government had estimated the fiscal deficit at Rs 7.03 lakh crore for 2019-20.

The government aims to restrict the fiscal deficit at 3.4 per cent of the GDP during the current fiscal, same as the last financial year.

The CGA data showed that revenue receipts of the government during April-May, 2019-20 was 7.3 per cent of the Budget Estimate (BE). In the year-ago period also, the revenue receipts were at similar level.

However, the capital expenditure was only 14.2 per cent of the BE as compared to 21.3 per cent in the year-ago period. Total expenditure during April-May period stood at Rs 5.12 lakh crore or 18.4 per cent of BE. It was 19.4 per cent of BE in the corresponding period of the last fiscal.

*(Economic Times – 28/06/2019)*



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