51st LEATHER RESEARCH-INDUSTRY GET-TOGETHER 2018

SUSTAIN

SUSTAINABILITY OF LEATHER & ALLIED INDUSTRIES

Sustainability of Leather and Allied Industries
29th & 30th January 2018, Hotel Le Royal Meredien, Chennai
Dear Doyens and Members of the Indian Leather Fraternity; Colleagues from CSIR; Mentors and Teachers, Colleagues and Friends! It gives us great pleasure in sending you our January 2018 edition of The LEATHER POST.

SUSTAINABILITY of the Leather and Allied Industries (SUSTAIN) will be a key subject this Year and hence we will commence LEATHER WEEK 2018 discussing SUSTAIN through LERIG 2018 slated for 29-30 January 2018. We have a joint responsibility to take forward the IFLADP Programme of the Government of India announced last month and CSIR-CLRI will endeavour to join hands with the Indian Leather Industry to take this forward and meet our targets.

LEATHER WEEK 2018 has very unique programmes and events lined by ITPO and CLE and let us endeavour to make all these events fruitful and successful. CSIR-CLRI has been reaching out to the Industry in every sphere with its technologies and services. We hope to live up to the expectations of the Indian Leather Sector at all times. We must walk hand-in-hand in our journey ahead!

I wish to thank you all for your unstinted support and kind co-operation at all times, We will strive to make this magazine informative and interesting and welcome your feedback for improvement.

Editor-in-Chief: Dr B Chandrasekaran, Director, CSIR-CLRI
Content Editor & Design: Md Sadiq, Chief Scientist, Industrial Liaison & Publicity, CSIR-CLRI

SUSTAINABILITY OF LEATHER & ALLIED INDUSTRIES (SUSTAIN)
LERIG 2018

Day 1, 29th Jan 2018
Inauguration, Nayudamma Memorial Lecture at Le Royal Meridien
3.00 - 4.30 PM

Registration

Inauguration of LERIG 2018
Welcome address: Dr B Chandrasekaran, Director, CLRI
Presiding: Dr Rafeeqe Ahmed, President AISHTMA & Chairman FARIDA

Chief Guest: Dr Vijay Kumar Saraswat, Member, NITI Aayog
Felicitation Address: Shri P R Aqeel Ahmed, Vice Chairman, CLE

Guest of Honour: Dr Bhaskar Ramamurthi, Shri Shafeeq Ahmed, Shri Ramesh Kumar IAS

Nayudamma Lecture
Chair: Dr Bhaskar Ramamurthi Director, IIT Orator: Dr Vijay Kumar Saraswat, Member, NITI Aayog

“New Frontiers in Engineering”

7.00 PM

Dinner

Day 2, 30th Jan 2018
Technical Session
8.30 – 9.30 AM
Registration

Technical Session 1: Sustainability through Reduced Environmental Footprints
Chair: Dr Rafeeqe Ahmed, President AISHTMA & Chairman FARIDA

“Pollutions Prevention and Efficient Water Use in Kanpur-Unnao Leather Cluster” – Shri Rathee Zaidi, Senior Program Manager, M/s. Solidaridad South & South East Asia

“The Competitive Advantage of Sustainability” – Dr Michael Costello, Director of Sustainability, M/s STAHL INDIA

“Roadmap for Comprehensive Sustainability of Leather Industry” – Dr P Saravanan, Chief Scientist, CSIR-CLRI

Tea Break
Technical Session 2: Chemicals for Sustainability of Tanning Industries
Chair: Shri Shafeeq Ahmed, President, IFLMEA

“Chemicals for Sustainability: Role of CSIR-CLRI” – Dr KJ Sreeram, Principal Scientist, CSIR-CLRI

“Reducing the Environmental Impact of Leather Making; tools, Concepts and Products” – Dr Guido Batena, Global Product Manager Wet-End, M/s Smit & Zoon

“Exploring New Chemistries for Clean Leather Processing” – Dr V Vijayakumar, Associate Vice President & Shri J. K. Basu, Associate Vice President, M/s Balmer Lawrie & Co

Lunch Break
Technical Session 3: Sustainability in Product Industries (Experience Sharing)
Chair: Smt Revathi Roy, Chairperson, FDDI & Director, M/s R R Leather Products Pvt. Ltd.


“Sustainability in the Leather Product Industry” – Shri Ijar Ahmed, Regional Chairman, CLE Managing Director, FARIDA

“Tannery of the Future – Checklist for Sustainable Leather Production” – Dr Egbert Dikkers, Leader Innovation & Sustainability, M/s Smit & Zoon

Tea Break

Technical Session 4: Policies/Program Needs: Challenges and New Avenues (Panel discussion)
Chair: Dr T Ramesami, Former Secretary, Department of Science & Technology, Govt. of India

“Tackling the Future – Challenges and New Avenues”

Dr Rafeeqe Ahmed, President AISHTMA & Chairman FARIDA
Shri Mukhtar Amin, Chairman, CLE
Shri P R Aqeel Ahmed, Vice Chairman, CLE
Shri Shafeeq Ahmed, President, IFLMEA
Shri Anil Agarwal, Joint Secretary, DIPP
Smt Revathi Roy, Chairperson, FDDI
Shri Ramesh Kumar, IAS
Dr B Chandrasekaran, Director, CLRI
Introduction

Among all the challenges, poverty remains the most critical and central challenge to mankind. Industries have been playing an important role in alleviating poverty by providing about 500 million jobs worldwide. Industrial growth is linked proportionately to the increasing demand for goods and services. It is imperative therefore to succeed in the continuing endeavor of poverty alleviation, industrial growth becomes vital. Traditionally it is believed that the protection of the environment could only be gained at the expense of economic development, particularly industrial development. Consequently, it meant that industrial growth could not be achieved without environmental impact. The new paradigm puts forth that there is no trade-off between environment and economy. According to the traditional economic methodologies, the investment made on measures of minimizing environmental impacts results in drop in the profitability. This hypothesis is based on the assumptions that need to be critically viewed. If (a) the environmental impact is appropriately monetized, and (b) the social cost of pollution and environmental degradation are taken into consideration for arriving at GDP, then the existence of a mid path between environmental protection and economy can be recognized. Thereby, the concept of drop in profitability due to the investments made on environmental protection can be demystified. Sustainability is the ability of the organization to reach a position of realization of business case without compromising the social goals and environmental targets. Therefore, sustainability is a continuously improved march towards the mid point of economy, environment and society, the three pillars of sustainability. In this paper, the strategic direction for the Indian leather industry to attain sustainability is discussed.

Concept of Sustainability

Sustainability is defined as the development that meets the needs of the present without compromising the ability of the future generation to meet their own needs. Unless the economic growth is driven to meet the needs of the present in an intelligent and equitable manner, the natural resources that are necessary for the future needs of the society cannot be met. Sustainability therefore does not encompass environmental protection alone.

Indian Leather Industry - Sustainability Path

3.1 Social Sustainability

The development and growth of Indian leather industry tracked different points in the sustainability map in the past. India had been exporting chiefly the raw hides and skins till the early 70s. From 1st January 1973, two major policy initiatives were introduced. They were...
(a) export duty of 10% was levied on EI and wet-blue and (b) the export of all types of raw hides and skins except for EI was banned. The driving factor for such a push from the Government was primarily to earn foreign exchange, as there was a foreign exchange crisis at that period due to the hike in the oil price. Therefore, the social sustainability had been the predominant driving force during the period from 1973 to 1985. Several incentives and schemes have been implemented aiming the growth of the leather industry and more specifically the leather product industry had been given a major thrust. The leather and leather product industry had been striving for social sustainability during this period. The policy initiatives lead to increased production of leather. The counter effect to the enhanced production and forward integration was the environmental impact.

3. Environmental Sustainability
The Water (control and prevention of pollution) Act was passed in 1974. And, in 1986, a committee was set up by the Director General of Technical Development to prepare a plan for establishing Common Effluent Treatment Plants (CETPs) for treating the tannery wastewater. The committee recommended the establishment of 70 CETPs across 14 states with a capital investment of Rs. 530 million. Initiatives were taken in this regard and CETPs were established available either provided both by the Union government and the state governments. This was the first step towards environmental protection. Subsequently, there had been many support systems from the government and significant degree of efforts have been taken with respect to meeting the discharge requirements. Chrome recovery system had been made mandatory to address the chromium wastewater. Commercial scale chrome recovery units have been installed since 1993.

Though these initiatives provided solution for meeting the standards in terms of almost all the parameters, the requirement of 2100 ppm of Total Dissolved Solids (TDS) could not be met. Classical treatment methods could not address the TDS. CETPs continued to fail in meeting the TDS norms. Also, the model of collective responsibility in addressing the pollution issue has not been as successful as envisaged. In 1995, Supreme Court ordered the closure of as many as 700 tanneries in Tamilnadu that failed to meet the discharge requirements specifically with respect to Biochemical Oxygen Demand (BOD). The Supreme Court of India also imposed fine on the basis of ‘polluters pay’. In 2007, High Court of Madras directed the tanneries of Tamilnadu to implement and follow membrane based zero liquid discharge. All the clusters of Taminadu complied with the orders. However, the two major issues that have been daunting the environmental sustainability of the leather industry are: (a) high treatment cost (as high as Rs. 500 per m3) and (b) unavailability of foolproof technical solution for the secured disposal of reject from Reverse Osmosis (RO) treatment. Nevertheless the timing of the environmental push was appropriate; the choice of the techniques opted was not apt. This is evident from the continued environmental predudiments of the industry.

The following are the unresolved issues that need to be reckoned with by the Indian Leather Industry:
- Absence of internal mechanism for maintaining the quality of wastewater from the individual units that are connected to the CETP.
- Pollution load not being taken comprehensively as the basis for the charges levied for wastewater treatment to the individual units
- Need for the alternative to secured landfill, which has been the disposal mechanism followed for the primary and secondary sludge
- Non-availability of fool-proof solution for the secured disposal of RO reject

3.3. Economical Sustainability
When the treatment plants had been established in early 90’s, the minimum process steps only had been ensured. Laterally when the need for a biological treatment systems, anaerobic treatment, and tertiary treatment methods had been introduced. Subsequently the chrome recovery system, solar evaporation and secured landfill had been resorted to. These efforts called for additional capital and operational costs. The increase in environmental cost results in increased cost of production. This has been continuing till date and the tanning industry is apprehensive that this might eventually lead to a competitive exclusion of the Indian leather industry. The Indian leather industry is presently driven strongly by economic sustainability. It is recognized clearly that any substantial increase in cost of production would result in loss of global market share.

4. Roadmap to Comprehensive Sustainability
Indian leather industry needs to embark upon two endeavors simultaneously viz. (a) opting for measures that would result in reduction in environmental cost, and (b) expanding the business in such a way to secure better financial returns, while ensuring minimization of environmental impacts.

4.1. Reduction in Environmental Cost
The environmental cost of leather manufacturing can be reduced by approaching the problem from a larger perspective. The major factor for the increased environmental cost is the not-so-prudent approach opted by the tanneries. Whereas, the end-of-pipe treatment may be the penultimate option in the hierarchy of environmental management, it had been the construed as numero uno. The source of pollutants in the wastewater can broadly be classified into two categories namely (a) the unab sorbed chemicals and chemical products used for leather manufacturing and (b) the constituent materials emitted from the hides and skins. Both have been considered equally as pollutants, whereas both the unab sorbed chemicals can better be construed as resources, specifically those that are present in the circulating waste streams. Therefore, by treating the unab sorbed chemicals, on one hand the value of the resources is lost and on the other, non-return investment is made for the treatment. Hence, appropriately the solution point has to be before but not the end-of-the-pipe. A perfect integration of all options such as opting for right alternatives, reusing, recycling, treatment and secured disposal only can provide a viable status.

4.1.1. Cleaner Technologies for Pre-tanning
By following hair-saving unhairing using enzyme and sulphide, Biochemical Oxygen Demand (BOD) of the liming wastewater can be reduced by about 40%.

4.1.2. Cleaner Technologies for tanning
Waterless chrome tanning is a novel technology developed recently by CLRI, which dispenses with pickling and basification. Also, no input water is required for chrome tanning. Therefore, no wastewater from chrome tanning is generated. This technology does not warrant rechomising, as the uptake of chromium during the self-tanning itself is significantly high. Therefore, complying with the discharge norms of chromium is unchallenging by resorting to this technology. Moreover, as there is no need for operating the chromium recovery system and therefore addressing the supernatant does not arise. Another major advantage of this technology is the reduction in TDS load to the tune of 25 to 30% due to the elimination of pickling process. It is clear that it is possible to attain zero wastewater discharge effortlessly for the process segments of pre-tanning and tanning.

4.1.3. Cleaner Technologies for Post-tanning
The volume of waste streams from neutralization and wet-finishing is around 15% of the total volume of wastewater generated (about 2.5 L/kg of raw hide or skin). However, treatment of the wet-finishing stream is difficult as it contains bio-refractory chemicals that cannot be degraded easily. The residual chemicals in the neutralization streams and wet-finishing cannot be reused, as they are the waste which is amenable for reuse. Therefore, the approach for reuse neutralization waste streams can be the counter current reusing system. And for wet-finishing stream, the pollutants may be degraded to the extent that they should not cause quality impairment. Electro-oxidation may be followed for removing the organic pollutants that are emitted from the leathers and for degrading the residual chemicals present in the wet-finishing waste stream. The reuse may be finite, limiting to specific number of cycles, until the threshold level of accumulation of the degraded products is reached. After the finite number of reuse, the solids can be segregated from the wastewater (through evaporation or filter press or drying beds) and the dry solids can be incinerated or disposed as ash, which is amenable for reuse. Therefore, the recommended scheme encompasses (a) low-sulfide, enzyme assisted hair saving unhairing with recycling of liming wastewater, (b) electro-oxidation of deliming streams and recycling of the treated streams for soaking, (c) pickle-free waterless chrome tanning, (d) counter current recycling of neutralization waste streams, (e) electro-oxidation and (finite) reuse of wet-finishing waste stream, and (f) separation of solids from wet-finishing waste stream after finite reuse and incineration or landfiling of the solid.

The operation and maintenance cost for attaining zero discharge through RO is about Rs. 570 per m3. About 4 kg of sludge is generated per cubic meter of wastewater. The cost of disposal of sludge is about Rs. 50 per m3.
Rs. 30 per m³. Therefore, the environmental cost per cubic meter of wastewater generated is about Rs. 600. The annual environmental cost is about 11% of the financial turnover. The operation and maintenance cost of the proposed system is about Rs. 200 per m³. Therefore, the possible reduction in environmental cost is about 67% if the aforesaid measures are implemented.

4.2. Increase in the Financial Returns

The following table presents the solid waste generation profile.

Table 1: Solid Waste Generation Profile

<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Weight (kg per ton of rawhide)</th>
<th>Annual Generation in India (Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimmings</td>
<td>80</td>
<td>52500</td>
</tr>
<tr>
<td>Fleshings</td>
<td>100</td>
<td>66000</td>
</tr>
<tr>
<td>Hair</td>
<td>50</td>
<td>33000</td>
</tr>
<tr>
<td>Shavings</td>
<td>75</td>
<td>19800</td>
</tr>
<tr>
<td>Buffing dust</td>
<td>1</td>
<td>13200</td>
</tr>
<tr>
<td>Crust and finished leather trimmings</td>
<td>10</td>
<td>19800</td>
</tr>
</tbody>
</table>

The constituents of solid wastes generated prior to tanning is chiefly protein (i.e. collagen). These are associated with significant value. The constituents of each waste are given below. It is clear that the constituents can be used for the manufacture of value-added products.

Table 2: Constituents of Solid Wastes

<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Water (%)</th>
<th>Collagen (%)</th>
<th>Keratin (%)</th>
<th>Lipid (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimmings</td>
<td>32</td>
<td>25</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Fleshings</td>
<td>80</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Hair</td>
<td>5</td>
<td>0</td>
<td>85</td>
<td>0</td>
</tr>
<tr>
<td>Shavings</td>
<td>30</td>
<td>50</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Buffing dust</td>
<td>8</td>
<td>40</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Crust and finished leather trimmings</td>
<td>8</td>
<td>40</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

About 46 kilotons of collagen, 31 kilotons of keratin and 9 kilotons of lipid are available per annum from the Indian leather industry. A moderate estimate suggests that the value of these materials is about Rs. 50 billion. Apart from the direct financial returns, there is a scope for saving on the expenditure presently incurred for the secured disposal of these wastes and the environmental costs associated with the disposal of these wastes. The technological options available for the utilization of the solid wastes are given in table 3.

Table 3: Solid Waste Utilization Options

<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Utilization Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimmings</td>
<td>High grade gelatin</td>
</tr>
<tr>
<td>Fleshings</td>
<td>Bird feed, organic fertilizer, activated carbon and biogas</td>
</tr>
<tr>
<td>Hair</td>
<td>Compost, keratin hydrolysate and amino acids</td>
</tr>
<tr>
<td>Shavings</td>
<td>Leather board</td>
</tr>
<tr>
<td>Buffing dust</td>
<td>Leather board, reconstituted leather</td>
</tr>
<tr>
<td>Crust and leather trimmings</td>
<td>Reconstituted leather</td>
</tr>
<tr>
<td>Sludge</td>
<td>Bio-gas</td>
</tr>
</tbody>
</table>

There are many technological options for producing high-value products from the solid wastes. Compared to the capital investment for establishment of tannery, the capital investment for establishment of units for the production of some of the value-added products is significantly high. However, the profitability and return on investment of the business of these value-added products are overwhelming.

5. Enabling Attainment of Sustainability

In the proposed endeavor in attaining sustainability, the roles of the two important stakeholders viz. Government and CLRI, are crucial. The governmental policies and programs need to be in congruence with the pursuit of the Sustainable Development Goals for the year 2030 as envisaged by the United Nations (UNDP SDG 2030). CLRI in turn needs to continuously develop and deliver technologies, provide technical support and create human resources to enable the leather industry to attain sustainability.

5.1. Governmental Assistance

The state needs to support the proposed efforts of the industry primarily in two directions namely (a) providing financial assistance for creating infrastructure, technology sourcing, availing technical support, and manpower development and (b) providing incentives to the endeavor of accomplishment of sustainability. The Government of India recently rolled out financial assistance to leather industry for supporting the holistic development of leather and leather products sector. Major funding assistance is provided for facilitating the leather industry towards environmental management. However, the thrust is primarily on the end-of-the-pipe treatment rather than on abatement of pollution at source. Mission programs may be formulated exclusively to implement and ensure the practice of in-plant pollution reduction measures and cleaner technologies. Also, the State may frame programs to provide financial assistance for the establishment of units for the production of value-added products from the solid wastes.

5.2. Role of CLRI

CLRI has developed many technologies for minimization of the pollution load at source and also for the utilization of the solid wastes. The technology and engineering package of these technologies shall be made ready for translation to the industry. CLRI needs to play the pivotal role in establishment of production units for the manufacturing of value-added products.

In order to promote and standardize the system of attainment of sustainability, CLRI needs to design a mechanism of assessing and certifying the tanneries and leather product units for sustainability. The system and mechanism of sustainability certification needs to be developed and adopted in order to account for the various aspects and components of sustainability. The State, relevant governmental institutions and International Development Institutions need to be consulted for linking the sustainability certification processes with financial incentives for enabling the Indian leather industry’s march to reach the status of world leader in sustainability.

6. The Eventual Destination

At the Sustainable Development Summit on 25 September, 2015, UN, the Member States adopted the 2030 Agenda for Sustainable Development, including a set of Sustainable Development Goals (SDGs), otherwise known as the Global Goals. The SDGs are a new, universal set of goals, targets and indicators that UN Member States are expected to use to frame their agendas and political policies over the next 15 years. The inclusive and sustainable Industrial Development (ISID) is put forth by the UNIDO means that:

- Every country achieves a higher level of industrialization in their economies and benefits from the globalization of markets for industrial goods and services.
- No one is left behind in benefiting from industrial growth, and prosperity is shared among women and men in all countries.
- Broader economic and social growth is supported within an environmentally sustainable framework.
- The unique knowledge and resources of all relevant development actors are combined to maximize the development impact of ISID.

The new development framework that aims to transform our world and will guide all global, regional and national development endeavours for the next 15 years towards the aimed transformation. There are 17 goals set to realize the transformation (figure 2).
Snapshots from our annual visit to Expo Riva Schuh, the world’s largest international shoe expo at Riva del Garda in Italy. Collection for Y.SO for Autumn-Winter 2018 was exhibited and we had a chance to catch up with our Italian colleagues once again.

Getting a new collection out is an extremely planned and structured process; the designers started working on the collection in September 2017 to ensure that it was ready for Riva fair this month. Production starts in March and the articles will eventually end up in European storefronts by August. Fine craftsmanship and attention to detail is extremely visible in the way collections are put together and presented.

It is always a pleasure to see some of the best retailers and exhibitors in Italy stocking and dealing in Y.SO’s lineup and it was great to have a chance to interact with teams from across Europe. Looking forward to more such engagements – it always feels great to give back to those who have supported and believed in us………SHAHROO MOHSIN, YOUNG STYLE OVERSEAS, AGRA
You are all aware that exports from Leather Sector reached an all-time high value of USD 6.49 billion in 2014-15. The industry was looking to achieve double digit growth levels when recession set in. Subsequently, exports declined to USD 5.85 billion in 2015-16 and to USD 5.66 billion in 2016-17, due to a combination of factors namely decrease in global leather prices to the extent of 10%, decrease in production in major producing countries like China in quantity terms by about 10%, recession in European Union to which about 52.5% of exports are directed, requirement of up-gradation of the tanning capacity and under-utilization of the existing capacity, instability in the Middle East and a number of other factors. Nevertheless, we have been able to considerably bring down the decline in exports during the current year, with exports declining only by 0.23% during April-August 2017. Most remarkably, all product segments are showing positive growth; except finished leather which has shown a -3.91% decline. Footwear too has shown a decline of 1.56%.

In these difficult times, we need to think about to consolidate and expand our strengths as well as diversify our activities to ensure optimum utilization of the opportunities available.

I wish to share with you some of the diversifications that we need to undertake:

**Constant INOVATION** helps us moving-up the value chain. Hence, the focus should be on design and development

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**Conceptual Design**

**Status:**
The Indian Footwear Sector caters to several International brands but the focus has been largely on manufacturing for ‘Designs and Styles’ suggested by the buyers being catered to. While very few companies have been moderately successful in making the buyers accept their indigenously conceptualized Designs, there is a lot of scope for deeper penetration of our own ‘creative designs.’

**Need:**
We need to strengthen our in-house design capabilities and forge collaborations with Design Studios internationally that have a deep understanding of lifestyle and fashion trends in the primary markets worldwide. This would help us create ‘original designs’ that would satisfy the requirements of customers in the global markets. This means that we need to send our Designers to work in Studios abroad and also for training and re-training.

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**Design & Pattern Development**

**Status:**
We have established ourselves in the area of Design and Pattern Making with the support from Training Schools and Institutions.

**Need:**
There is a continuous need to focus on Design and Pattern Development for Leather Products and Institutional support is this aspect is necessary. Institutions may like to train/re-train their personnel with exposure to International methods.

The same is applicable for candidates from the Industry as well.
**2D, 3D CAD**

**Status:**
We have gained self-sufficiency in the use of 2D CAD systems for Pattern Engineering. Almost all leading product manufacturers have access to these CAD systems either in their factories or through CAD Service centres at leading Institutions. These systems are used for Grading of patterns for Die making and Marking patterns and Norm calculation for estimation of leather consumption.

**Need:**
We need to popularize the use of 3D CAD systems for Last Digitization and Modelling, Conceptual Designing and Sole Design and Manufacture.

The Design Studios in Institutions and Factories need to be equipped with the latest CAD systems in addition to other automated peripherals like the Die-less cutters to directly cut the leather and punch cutters for cutting materials of higher thickness.

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**Sustainability in Product Industries: Theme Paper for LERIG 2018**

Mid-80's: The first Computer Aided Design (CAD) machine for shoe design was bought by CLRI and demonstrated to the industry as early as in 1985. When it was bought by CLRI, many thought that CLRI was perhaps way ahead of time.

Soon enough the usage of this machine increased and with the training provided by CLRI, many private enterprises started buying their own CADs. Subsequently many other national institutions followed suit.

If, today, some strength in design and product development exists in India in leather based industries, a good deal of credit for this goes to the pioneering role played by CLRI.
Sample Development

Status:
The existing Sample Development Cells are attached to the Design Studios of companies to realize the prototype of the Designs/styles created by the Design team. Sample Development Cells both in Industry and Institutions need state-of-the-art machinery that can improve the quality of samples produced. Facilities for laser-cutting of leathers, embroidery, plating and embossing and plates required for this purpose could be housed in all the leading Institutions. These are just a few examples of innovation in sample making and there is a vast scope.

Need:
We need to upgrade the Sample Development Cells and employ trained technicians to use world-class equipment to translate them into products comparable with the best worldwide. The Sample Development Cells should be stocked with samples of leathers, fabrics, lasts, soles, heels and other components, in accordance with the latest Fashion trends and produce samples that can be exhibited at International fora.

Brand Building

Status:
We have been playing the role of ‘Resourcing Partner’ to the leading International Fashion Brands in the area of Leather and Leather products. However, we do not have a presence in the niche Fashion markets of the world with our own brand.

Need:
We need to move up in the value chain. Design and Brand Building through a brand driven value chain need to be developed as core strengths of the Leather and Leather Products Manufacturing Industries. With our own Brands we can achieve breakthrough innovations that can play a pivotal role in the positioning of India’s Leather and Leather Product industries in the global arena.

Marketing

Status:
The Council for Leather Exports has been very proactive in helping the Indian manufacturer showcase their products at various National and International fairs. They have also organized many B2B meets, Buyer-Seller Meets (BSM) and reverse BSM’s to bring the Manufacturer and clients face to face. In addition, many companies undertake their own marketing campaigns to interact with buyers globally.

Need:
Marketing of Indian Leather and Leather Products is a crucial area of attention and synergies would have to be built with international agencies to promote Brand India. A mapping of opportunities for the leather sector would have to be undertaken and the vision to be in the vanguard of global leather and leather products producer should employ a collaborative approach to leverage the strengths of the International and National institutions and industry, and develop an integrated nexus of Design - Technology - Market Linkage, that would establish an edge for the Indian Leather industry globally.

Evolution of Shoe Retailing in India

Mr. Utsav Seth, PAVERS ENGLAND

Through the 60’s: Shoes were sold but back then it was not a necessity - it was a luxury. People wanted to wear them to look different. In the eighties, there was some colour to the shoes being sold. People wanted to wear shoes they wanted something to wear and move on. In early 2000 shops started taking shape and we all remember shops in high streets, some kind of malls selling shoes.

And that’s how it looked - but here we are in 2010 and the landscape of retail in India has changed completely. Let us walk through some of the leading shopping malls in Delhi, Bombay, Hyderabad in Bangalore and we have recently opened one in Chennai. This is how the landscape looks today. There are some buzzing consumers, buzzing people who want to wear shoes and who want to wear brands. They want to buy good products, they understand what comfort is, they understand what quality is and they have the ability to pay for it. That is the changing landscape of the Indian retail today. So why has retailing suddenly become an important sector? As we are evolving it is a sector that is important to the industry.

Every Challenge brings an opportunity... Tremendous potential... for SHOE RETAIL IN INDIA!
Domestic Market

Status:
The Domestic Footwear market in India is growing rapidly. With rapidly changing lifestyles of the Indian consumer, the demand for footwear and other lifestyle accessories in the domestic market has good potential.

Need:
We need to address the domestic market and cater to it with the latest Designs and styles in conformity with the trends worldwide. The quality of input materials and manufacturing processes also need to be upscale so that the domestic consumer would get the product that is excellent in quality, durability, comfort and style.

Leather sector holds immense potential for growth both on the export front as well as domestic retail market front, and also has enormous scope generating more employment opportunities for the weaker sections of the society, the Government of India has identified Leather Sector as one of the focus sectors for the Make in India programme. Let us exploit this opportunity.

When I had started the "Good Leather" journey nearly 3 decades back, the Motto of my Company was 'Manufacturing.' From humble beginnings in Tanning and Producing “Finished Leather", my own Company has diversified into making Shoe Uppers, Full Shoes for both MEN AND Women and Shoe Components. So much so that I have also followed my Mentor 'Bachi' and ventured into the Manufacturing and Retailing for the Domestic Market as well; and this is quite a challenge.

Very interestingly, my own domestic Brand carries the tagline "Born in Italy; Made in India."

Subscription to Memberships and Magazines

Status:
Information is the key to success in the highly competitive Fashion World and we need to be up to date with the latest trend and fashion information to stay ahead of competition. However, except for some of the Institutions most of the Leather and Leather Product manufacturers do not access information from memberships to Design/Fashion Organizations nor subscribe to Magazines or Journals for keeping abreast of the latest fashion trend information. This is a serious handicap especially if you aspire to be a global player in this market.

Need:
Access to the latest seasonal trend forecasts from the highly acclaimed Design organizations from the fashion capitals and also subscription to fashion journals, publications and photo packs are necessary for those catering to the niche fashion markets worldwide. This helps them in focusing their collections and make the right product for the right season and the right market which ensures business success for them.

Bringing out Trend Newsletters/Trend Periodicals/ Online

Status:
The Design & Fashion information gathered has to be analyzed and interpreted for the Indian manufacturer to understand and this dissemination of information would help them translate the design ideas suggested into acceptable products in the highly competitive fashion world. Few Trend Publications are in circulation like the MODEUROP Colour Card.

Need:
There is a major need to bring out more Trend Newsletters and Trend periodicals that addresses the fashion needs of all sectors of the Leather and Leather Products industry. With increased subscription to Fashion Journals, the design information needs to be translated into realizable products through regular dissemination via newsletter, magazines and online portals.
Trend Conferences

**Status:**
Trend Conferences update with information on Fashion and Trends in advance of the season in order to gain a huge lead time over competition. Moreover, these conferences help align the “Creative Thinking Process” in line with the Trend direction. The Institutions, in particular, CSIR-CLRI, NIFT, NID and FDDI do organize as well as attend Trend Conferences and then disseminate this information to the industry.

**Need:**
There is a need to forge working relationships with the leading Fashion Houses, Design Schools, Fashion Publishers and Independent Designers to organize Design and Fashion Trends related Workshops/Conferences to help imbibe the Fashion Sense and direction that need to be followed to cater with the most appropriate product in accordance with the market demands. These workshops/Trend Conferences would help the industry Design personnel to interact with the Fashion Makers and help them attune their “Design Thinking Process” in line with the Global Design thought process.

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Leather Incubator

**Status:**
The mandate of “The Leather INCUBATOR” is to nurture a culture of developing new leathers based on the seasonal demands, so that the designs and concepts metamorphose into newer and niftier products or services capable of being marketed and sold. The outcome is creation of a new class of world-class LEATHERS.

**Need:**
The Leather INCUBATOR that is needed should primarily use the experience in Leather Design and Trends from leading Leather Designers and experts and International Chemical Companies. It needs to forge collaborations with International Fashion Organizations to bring Fashion faster to the members of the industry.

In addition, Design incubation cells that are integral to most design led organizations in the world need to be set-up and consist of a dynamic team drawn from across-disciplines. Boundaries need to be constantly challenged to be able to dream. This is an important need of the industry.

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Creation of Collections

**Status:**
Many of the companies look to the West for Design Silhouettes to create design collections that can compete internationally.

**Need:**
Undoubtedly, the concept and ideas will continue to come from the West. We need to forge alliances with design Studios/ Designers abroad to create design collections. Another idea is to work with International brands and have suitable tie-ups to sell these designs in India. Designing a product is not merely about aesthetics and there is a need to inculcate this in the Designers before they make their own Design Collections for which visit to International fairs and expositions by designers from both Industry and Institutions is a must.
“Fashion Trend forecasting” for leather is an initiative to bring to the fore the ability of the Indian Leather Industry to take pro-active measures in fashion forecasting and design development by providing a scientific leather product development focus in the areas of colour forecasting, range building, design and retail analysis. The outcome envisaged is to strengthen the Indian leather product design capabilities which would be reflected in product quality enhancement.

Need:
Nations like India have remained in the backyard of the fashion world for long. If India were to emerge as a strong global player in the world leather trade, all efforts must be made to take proactive measures to be ready with the fashion leathers and products when the fashion does emerge and we must make products that match International Styles and standards. Manufacturers have to understand their customers, anticipate the changes and envision the future of fashion.

Information is the key to success especially in a fast changing and dynamic world and in this context the members of the Leather industry need to be enlightened with the vast international information base on ‘Fashion and Trends’ in Leathers & Materials, Colours and Textures, Shoe Design & Retail, Shoe Component & Accessories.

‘Advance preparedness’ is vital to stay ahead in today’s competitive business and in the realm of International marketing of fashion related products, advance information relating to changing trends is a major business advantage. The leather industry of India is beginning to realize the importance of Fashion Trend forecasts to be able to cater to the buyers with original materials / products in leather.

Trend Forecasting/ Fashion Forecasting Cells Status:

Innovation in Design

Status:
Smart Shoes are seen in sport related fields.

Need:
Technology led Innovation Design.
The “Smart Shoe” would be modelled based on the usage of New Materials, New Construction Methodology and with the incorporation of the advanced technologies which would ensure absolute overall comfort to the wearer of the Shoe. Study of the Shoe Construction parameters, Material Characteristics for shock absorption, embedding of technological devices for enhancing the output of the shoe as well as human-physiological wear trials would form an integral part of the “Smart Shoe” development with the end objective being to provide an “Intelligent shoe” which would provide maximum comfort.

Shri Irshad Mecca,
Vice President, ISF
Shoe makes me happy.

He explained that there were two perspectives of looking at the Theme – one was from the Consumers point of view and the other was from the Manufacturers point of view. He said that speaking from the Manufacturers view point, he was very proud of the resilience, aggression and the fighting spirit of the industry to survive despite strong odds in this market. He stated that we should take confidence and move forward. He also stressed on “being positive” and cited a personal example when he was facing some difficulties in business, he decided to climb Mt. Kilimanjaro and came back energised and the experience taught him to move forward and make better shoes.

He emphasized that it is “passion” that makes us all Happy as well as the customers happy and we must put ‘passion’ into the product we make to make it an outstanding product.

Presentation by:
Shri Mohamed Sadiq, Chief Scientist at 51st LERIG 2018 on 30th January 2018

Sustainability in Product Industries: Theme Paper for LERIG 2018
Visit of Madam and Ato Tadesse Haile, Hon’ble Minister, Prime Minister’s Office, Federal Democratic Republic of Ethiopia (FDRE) to CSIR-CLRI on 21st December 2017

Dr B Chandrasekaran, Director, CSIR-CLRI bequeathed a warm welcome to the Hon’ble Minister of FDRE with a floral bouquet

Hon’ble Minister had a discussion with the Chief Scientists and the team of Waterless Chrome Tanning (WLCT) of CSIR-CLRI. He is positive about mobilizing the funds for licensing of WLCT technology to the tanning community of Ethiopia. He had been instrumental in the CSIR accomplishment of bagging Metal Industry Development Institute (MIDI) capacity building project worth of multi million dollars.

Madam and Hon’ble Minister visited the Shoe Products Development Centre (SPDC) and appreciated the product making capability and Skill development programmes of CSIR-CLRI.

Madam and the Hon’ble Minister also browsed through the Gait Facility of CSIR-CLRI.

Shri M D Sadiq presented on Capacity Building for Leather sector through Design and Innovation to Madam and the Hon’ble Minister.
Director, CSIR-CLRI addressed the Staff on New Year's Day: Director mentioned that Year 2017 was a very eventful Year for CLRI as it marked the 70th Year of CLRI being instituted and the progress made by CLRI had set example for many Institutions to emulate. He highlighted the major events like IULTCS, Dry Tan, WCTT Technology that had revolutionized the 150 years old tanning process and the awards won by it. Director spoke about the need to escalate the promotion of CLRI technologies and reach the targets set by CSIR. Year 2018 holds a lot of new challenges: 51st LERIC, reaching out to other African countries, efficient planning for KANPUR - all with a concerted effort! In conclusion, Director said that CLRI was the only organization that can reach out to the Industry, both national & international on a daily basis and must continue to do so with greater vigour. "While we progress, we also help others progress... and this way, the organization grows", he said and greeted all staff a Happy New Year 2018!
Meeting with Industry Stakeholders to discuss the GOI’s special package of Rs 2600 crores for the Indian Leather Sector
Report on CLE’s Design Award 2018: Jury Evaluation Meeting

DESIGN AWARD 2018: Instituted by Council for Leather Exports during January 1997, the “Design Award” is for increasing ‘Fashion & Design’ awareness in the Industry. To help Indian leather and leather products find a place of prominence in the global fashion world of leather. It also encourages promoting design capabilities within the country to create a contemporary image for Indian leather products in markets abroad.

The Jury for the award met on Thursday, 11th January 2018 at Hotel TAJ Coromandel, Chennai to adjudicate the winners for the CLE’s DESIGN AWARD 2018.

Dr B Chandrasekaran, Director, CSIR-CLRI and Dr P Saravanan, Chief Scientist & Chairman, Leather Products Cluster were the Jury Members from the Institute along with other Jury members from NIFT, CLE and the Industry.

A total of 152 entries were received for the various categories and the jury members after evaluating and deliberating on the various aspects of design innovation, uniqueness and novelty finally chose the award winners.

DESIGN AWARD 2018: Jury Evaluation

CSIR-CLRI wins CLE’s Best Shoe Design for Comfort Sandals for Men and Best Leather Products Design for Ladies Handbag made out of Chicken Feet Leather
As part of the calendar of activities of JIGYASA for the year 2017-'18 and in commemoration with the celebrations of 150th birth anniversary of the great woman scientist Madam Curie (a two time Nobel prize winner), “ONSITE EXPERIMENTS FOR KV STUDENTS” event was organized at CSIR-CLRI from 9-11th January, 2018 at B.M. Das Hall. This event was coordinated by woman scientists of CSIR-CLRI with the participation of ~55 students and 8 teachers from KV- Thiruvannamalai, KV- Dharmapuri, KV- Thakkolam, KV- Arakkonam, KV- OCF, Avadi, KV- HVF, Avadi KV- CRPF, Avadi and KV- AFS, Avadi.

On 9th Jan 2018 (Day 1), the event began with the inauguration by Dr. B.N.Das, Chief Scientist, CSIR-CLRI. He welcomed the gathering and inspired the students through his speech with examples and highlighted the importance of technical skills. The guests of honor for the event are Shri C.Mani, Deputy Commissioner, Kendriya Vidhyalaya Sangathan, Chennai Region and Dr. N. Mathivanan, Director, CAS in Botany, University of Madras, Chennai. Shri Mani appreciated CSIR laboratories for conducting Jigyasa and requested students to utilize the opportunity to improve their knowledge and skills. Dr. Mathivanan inspired the students through his talk by highlighting the utility of the programs and requested students to exploit the rare opportunity. He observed that JIGYASA kind of events provide a forum for them to observe and plan for the future. After the inauguration, a special lecture is delivered by Dr. Anandhi Upendran, Director, Biomedical Innovation, University of Missouri, USA. She began her talk by addressing what is research and shared her experience in research which led to a product in the form of medical device using nanotechnology to identify the problems associated with the premature baby. She elaborated in her talk the importance and applications of nano-technology for the benefit of healthcare. This followed in house lecture cum demonstrations for the students. The first onsite demonstration is by Mrs. J. Sridevi at IPCL-NMR lab where a live demonstration of NMR sample analysis and acquisition using Bruker 400 MHz solution state NMR spectrometer is conducted. The lecture-demo also covered the basics of spectroscopy, principle of NMR spectroscopy, overview of the NMR instrumentation followed by the sample preparation, and recording the NMR spectrum. As part of parallel session, Dr. M. Sugana Lakshmi handled the demo of 3D printing. She explained the basic concepts involved in 3D printing and elaborated by stating that it is a new technology used to develop prototypes, complex objects and customized articles. 3D printing facilitates fast and easy way of producing products. She said that it is an emerging technology which has huge potential for making customized prosthetic limbs, jewellery and footwear.
Dr. S. Swarnalatha explained the water pollution, its spectroscopy for chemical analysis of wastewater spectroscopic techniques in structural elucidation. She also explained the importance of spectroscopy and its relationship with molecular chemistry behind starch and cellulose and elucidated the role of enzymes, she cited the example of enzyme action with carbohydrates, proteins, lipids, nucleic acids etc. in a lucid manner. Highlighting the importance of enzymes and its importance to human life. Taking biochemical pathways in cell. She gave an overview of enzymes and its importance to human life. Taking glycolysis and photosynthesis as examples, she stressed on the chemical process. Presenting The Chemicals of Life, she introduced each topic dealing biochemical Cycles and explained the complexity of biochemical pathways in cell. She gave an overview of enzymes and its importance to human life. Taking glycolysis and photosynthesis as examples, she stressed on the chemical process. Presenting The Chemicals of Life, she introduced each topic dealing with carbohydrates, proteins, lipids, nucleic acids etc., in a lucid manner. Highlighting the importance of enzymes, she cited the example of enzyme action on starch and cellulose and elucidated the role of stereochemistry.

This followed informative lecture on spectroscopy, its role in analytical chemistry and the chemistry behind the natural pigments and the analytes by Dr. Sujata Mandal. In her lecture, she emphasized on visible spectroscopy and its relationship with molecular structure. She also explained the importance of spectroscopic techniques in structural elucidation of molecules. In a demo, she showed the utility of spectroscopy for chemical analysis of wastewater samples. In another house lecture and practical demo on water pollution and wastewater treatment technologies, Dr. S. Swarnalatha explained the water pollution, its sources, water borne disease and the economic loss due to water pollution. Chemical characteristics such as BOD, COD, TSS and TSS which are commonly used terms in water treatment are explained by her. The conventional wastewater treatment technologies such as primary, secondary and tertiary treatment and their draw backs are highlighted followed by advanced wastewater treatment technologies such as Membrane bioreactor (MBR), and Uplow anaerobic sludge blanket reactor (UASB).

On day 2 (10 Jan 2018), the program began with a special lecture by Dr. Anju Chadha, Department of BioTechnology, IIT Madras. She inspired the students through a talk on “The chemicals of Life, the Biomacromolecules” in an interactive mode. She narrated the story of Tu Youyou’s discovery of antimalarial drug Artemisinin from Chinese Traditional Medicine which led to Noble Prize and stressed the importance of Jigyasa (Curiosity) in science. She said that curiosity followed by hard work is essential requirement for Science. She delivered talk on organic chemistry behind starch and cellulose and elucidated the role of enzymes and its importance to human life. Taking biochemical pathways in cell. She gave an overview of enzymes and its importance to human life. Taking glycolysis and photosynthesis as examples, she stressed on the chemical process. Presenting The Chemicals of Life, she introduced each topic dealing with carbohydrates, proteins, lipids, nucleic acids etc., in a lucid manner. Highlighting the importance of enzymes, she cited the example of enzyme action on starch and cellulose and elucidated the role of stereochemistry.

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Dr. Yasmin Khambhaty and Dr. Tamil Selvi delivered lectures on microbes and its importance in human life. Their talks focused on microbes, types of microbes and their impact on everyday lives, their benefits and demerits. A short video about microorganism and the methods to isolate them is also screened. In the demonstration session, the tools and equipment needed for conducting microbiology practical along with the safety measures to be undertaken are explained in detail. The isolation of microbes using various techniques from soil samples and the identification of microbes based on Gram staining procedures are demonstrated.

The session on proteins and enzymes is held by Dr. N.R.Kamini where she explained about the use of enzymes in leather processing. She also briefed the students about principles and procedure for estimating protein content of a sample by Lowry’s method. Additionally, the amylase assay and calculation of amylase activity are also exposed.

On the final day (11.1.2018), the session began with a special lecture on hydrodynamics of water by Dr. Aruna Dhathathreyan, Emeritus Scientist, CSIR-CLRI. The link between hydrogen bonding and folding of proteins in water is elegantly explained through excellent cartoons. This was followed by in house lecture on Nano in biology by Dr. Purna Sai. She gave an insight into the naturally occurring nanomaterials which inspired the scientists to revolutionize the technologies applied in the pharmaceutical and cosmetic industry. Amongst the various types of nanomaterials, electrospinning is dealt in detail followed by practical demonstration of nanofiber fabrication to instigate the enthusiasm in the students. The importance of nanotechnology and nanomedicine that would definitely lead to fascinating futuristic approaches meeting all the challenges with reference to prognostic and diagnostic medicine is also dealt. Mr. K.Karthikeyan, demonstrated the development of novel leather products based on ethnic designs from North East regions. He explained the safety measures to be undertaken are explained in detail. The isolation of microbes using various techniques from soil samples and the identification of microbes based on Gram staining procedures are demonstrated.

The post lunch session is started by Mrs. Bavya, CSIR-IIP/CLRI. She explained the theory behind the crude oil and its transformation to the various products of human use and the chemical engineering processes involved in the purification of the process. The lecture consisted of upstream drilling of crude oil and the steps involved in the pre treatment of crude oil before transportation in pipelines. She also explained the processes involved in the production of other products obtained from the refinery such as kerosene, jet fuel, butylene etc. Dr. Nishad Fathima delivered a talk on Introduction to Leather Processing. She briefed the students about various steps in leather making. She said that it is the part of tanner’s job and skill to simplify or purify the raw material, and turn it into a desirable product that is useful in modern life. The lecture was followed by a practical demonstration of leather making by Mr. R. Prasanna, Leather Process Technology.
After the lunch, Dr. G. Saraswathy screened a short video on Gait analysis followed by a presentation on Role of Gait analysis and Rehabilitation through Footwear and Orthotics. Later, demonstration on body composition and plantar pressure analysis, instrumented treadmill and 3D foot scanner are carried out. To make the demo effective, volunteers for demonstration are chosen from the participating students and teachers.

The three day event concluded with Valedictory function graced by Dr. B. Chandrasekaran, Director, CSIR-CLRI and guest of honour Dr. A. Ramesh, Director, IIBAT, Chennai. The Director, CSIR-CLRI welcomed the participants and elaborated the opportunities that lay in front of them and underlined the importance of JIGYASA program. Dr. Ramesh stressed on the factor of inspiration and motivation that may change student’s life. He narrated a story about a small scale mosquito net manufacturer and his skills and the technology developed by him for the society. The feedback from the students and teachers was sought and many participants expressed their happiness on over all organisation of the event and expressed wish that in future also such activities will be organised for the benefit of students. Finally, Dr. A. Gnanamani, one of convenors of the event summarized the activities of the three day event Jigyasa - Onsite Experiments for KV Students and proposed the vote of thanks.

Three presentations have been selected for presentation (one oral presentation and two posters) in this International conference. All the three presentations have been published in the conference proceedings. Out of that, one best paper titled “EFFECT OF MIXING RATIO FOR ENHANCED BIOGAS PRODUCTION FROM SLAUGHTERHOUSE SOLID WASTE CO-DIGESTION WITH FOOD WASTE” by S.V.Srinivasan*) and S.Porsevam and one best poster titled “INCINERATION OF LEATHER SOLID WASTE AND SOLIDIFICATION OF THE INCINERATED ASH” Mozhiarasi V, Saraswathi A, Sathish G, Srinivasan S V*), Suthanthararajan R was won by our CLRI team. This conference contains numerous technical sessions in meeting the targets of various missions for cleaner development. Few such sessions include 3R in the Asia and pacific region, Swachh Bharat Mission, a sustainable initiative for making clean India, Sustainable SWM projects – Policies & Governance ( Urban Development), Co-processing of waste, subsequently followed by parallel technical sessions such as MSW management, Waste to Energy technologies, Applied Biotechnology, Composting, Chemical engineering applications in waste management, waste valorization, Sustainability and climate change, Sustainability models in waste management practices, Biofuels and bioenergy, water resource management, Best practices in city specific waste management, Biogas and biomethanation, wastewater treatment, pyrolysis and gasification, Sustainability and climate change, Best Practices of SWM projects in ULBs (Urban Development), Hazardous Waste: Industrial and Biomedical Waste management strategies, Fly Ash : Technology and Resource Efficient Management, Special Session on E-waste Management & EPR, Best Practices in ULBs of INDIA, Plastic Waste Management, SBM and SMART City, Biomass and Bio-waste Utilization, Best Practices in ULBs, Sustainable Business with Waste, Applied nanotechnology, Waste utilization and minimization, Advanced Technologies in Waste Water Treatment etc.

In addition, Dr. S.V.Srinivasan, senior scientist, CSIR-Central Leather Research Institute has chaired a technical session entitled “Waste to Energy”. Overall, the conference has addressed many issues in waste management and various technologies for implementation were presented by various speakers from different countries. Moreover, various sessions were based on our country’s missions like Swachh Bharat, Clean India etc., and found to be highly interesting and effective.
“SUSTAIN” traces the growth of the unique partnership between ITPO, CLE and CSIR-CLRI required for the sustainable development of the Indian Leather Industry. The trinity partnership between ITPO, CLE and CSIR-CLRI has enabled sustainable development of the leather industry.

India International Leather Fair (IILF) plays an important role in these linkages.

The THEME PAVILION at IILF will radiate the dexterity of the Indian Expertise in the Design and Development of exquisite and high Quality LEATHERWARE from Finished Leather through to LEATHER PRODUCTS. Jostling for Space in this arena will be the “BEST of INDIAN MERCHANDIZE” from the crème de la crème manufacturers who cater to the world’s leading brands. The display at the THEME PAVILION will be a feast for the Leather Connoisseur and an eye-opener for the discerning international buyers – a gateway to IILF 2018, Chennai.

Indian Leather Exports

The exports from Leather Sector reached an all-time high value of USD 6.49 billion in 2014-15. The industry was looking to achieve double digit growth levels when recession set in. Subsequently, exports declined to USD 5.85 billion in 2015-16 and to USD 5.66 billion in 2016-17, due to a combination of factors namely decrease in global leather prices to the extent of 10%, decrease in production in major producing countries like China in quantity terms by about 10%, recession in European Union to which about 52.5% of exports are directed, requirement of up-gradation of the tanning capacity and under-utilization of the existing capacity, instability in middle east etc. Nevertheless, India was able to considerably bring down the decline in exports during current year, with exports declining only by 0.23% during April - August 2017. Most remarkably, all product segments except finished leather (-3.91% decline) and footwear (-1.56% decline) showed positive growth during April - August 2017, which gave India the confidence of achieving positive growth this year. Despite the downturn in exports in the last two years, India was able to achieve positive export growth during 2016-17 in markets like USA, Russia, Denmark, Sweden, Austria, Belgium, Japan, Portugal, China and Poland.

In these difficult times, Indian Leather Industry started to think about how to consolidate and expand its strengths as well as diversify our activities to ensure optimum utilization of the opportunities available. Some of the diversifications that the Sector needs to undertake in the near future to achieve the envisaged 10% export growth levels in next 3 years from 2017-18 to 2019-20 and achieve an export value of USD 7.5 billion by 2020 are:

Ladies and Children footwear constitute 70% of global footwear market of USD 120 billion i.e. USD 84 billion approx. However, India’s share in global ladies and children footwear market is only 1.19%. Hence, India’s objective is to increase capacities of ladies and children footwear with aid from Indian Footwear, Leather & Accessories Development Programme (IFLADP) during the next 3 years i.e. 2017-18 to 2019-20.

Design & Development helps in moving-up the value chain. CLE will continue its Design Development efforts through organizing Design workshops under Make in India 2.0 action plan so as to train the personnel in leather industry and also the students on the latest design development trends. Besides, our aim is to establish Design Studios in major clusters, so as to serve as a platform for procuring designs.

During April 2014 to Sept. 2016 alone, Foreign Direct Investment to the tune of USD 53 million was generated in leather sector, which shows the scope for generating FDI. India needs FDI and Joint Ventures to propel its growth. Considering this, CLE proposes to organize investment promotion shows in East European Countries (Poland, Czech Republic and Hungary) and Spain (which is a major producer in Europe) this year to attract investments.

Total global footwear Imports during 2016 was USD 120 billion, out of which import of non-leather footwear was USD 69.02 billion (57% share) However, India’s share in non-leather footwear market is only 0.49%. Hence, the focus would be on extensive modernization of non-leather footwear units across the country including in clusters like Bahadurgarh, Kozhikode through IFLADP Scheme.

There are many major markets where India’s market share is low. CLE proposes to undertake varied market promotion events depending on the market which includes Engaging Consultant in Russia, holding BSMs in UAE, South Africa, Hong Kong and Participation in fairs in Korea, Poland, Australia, Bangladesh and Sri Lanka.

Reverse BSMs provide an opportunity even to Small and Medium exporters to meet buyers in India itself. CLE proposes to invite about 235 buyers for RBSMs in and Medium exporters to meet buyers in India itself. CLE proposes to invite about 235 buyers for RBSMs in

Penetration in US market

Total global import of leather, leather products and footwear during 2016 was USD 180.87 billion, out of which import of USA was USD 32.89 billion (18% share). India’s market share in USA is 2.65%. Though overall exports from leather sector declined by about
Challenges and New Avenues

Chemicals for sustainability of Tanning products, chemical systems and reducing energy consumer benefit as paramount. This encompasses both ecological Sustainability is today an important issue for the Leather sector. The background to this theme is education, heritage, art and culture. One might think of sculptures, museums and architecture, of ateliers, little workshops. But a look to the future will not come off badly either. Research, labs, technology with their rather cool charisma also fit the picture.

This is a laid-back colour theme – very exciting and yet sophisticated: very feminine and subtle, on the one hand, and very modern and hip, on the other, at times even in an all-classic transposition. The focus here is on a tender, fragile tonality based on neutrals. A typical element is the interplay of light and shadow. Light/dark contrast or monochrome schemes are often cited variations of this colour theme. Black and white are a given while dark blue is and will become ever more important: 'Indigo goes Black'. These dark essentials are complemented by light cream, grey, and nude hues. The mix of modernity and classic elements is often also seen in the materials found here: innovative, lightweight summer wool fabrics and smart fibre mixtures but also exquisite silky materials and high-quality cotton blends. Poplin, velvet or jersey but also soft nappa and nubuck leather have been technically refined and given novel finishes. Incidentally, shine is still part of the game. "Technology is chic!"

Experience the Theme Pavilion SUSTAIN!

The stand presents itself with a classy eco-friendly poise. Warm natural interwoven textures with mood lighting set this display. Bamboo, Jute and Coir chipboard has been the chosen materials for the stand finishes. The back walls are surfaced with Bamboo Mat tiles. The floor is made of Bamboo Structure. Accents of chipboard and Jute is tastefully introduced.

The design is to showcase the following elements:
- MODEUROP Trends for Spring Summer 2019 season
- Indian Leather Industry striving with confidence
- Technology Trends and describes SUSTAIN
- Sub-Themes – EARTHINESS, ECCENTRIC, ENDLESSNESS

Strategically placed section displaying Leather Material for Sub-Theme: EARTHINESS, Eccentric & Endlessness. Finished products made by Sub-Theme to display on specially designed Bamboo Podiums.

TIMELESSNESS / ENDLESSNESS

A never-ending story – timeless!

This is an exquisite theme thriving on understatement. ‘Get smart’! Urban and formal, it promises precious
CLRI INDIA DESIGN CLUB MEMBERSHIP
for Year 2018
‘unparalleled service’

Launched in January 1994, as a window to International Fashion, CSIR-CLRI India Design Club Membership enables Tanners, Footwear and Footwear Component Manufacturers, Handbags, Accessories & Leather Garment Manufacturers to gain access to the vast international information base on Fashion and Trends in Leathers & Materials, Colours and Textures, Shoe Design & Retail & Accessories.

Since July 2002, Members have access to trends and fashion on www.indiadesignclub.com and now the mobile App as well, both on Android and Apple versions ‘India Design Club’

Window to International Fashion!
www.indiadesignclub.com

“Seeks to combine creativity, an eye for fashion and pragmatism”

Dissemination of ‘design intelligence’ by CSIR-CLRI helps the industry gain access to “input information” for their collections 18-24 months ahead of the season in address, which is a tremendous ‘Business Advantage’.

TREND SERVICES

- COLOUR TREND CIRCLE
  Leather, Colour & Texture Trends, three sessions in advance (Revision)
- MODI/INDIA
  An Italian flavour of colours & textures (Revision)
- FASHION TRENDS
  Website Trends featuring Shoes, Footwear & Accessories
- RETAIL ALL AROUND
  Trends from Le Cuir & Lineapelle Fairs.
- TOP COLOURS
  Bestsellers and Flash Colours
- DISSEMINATION SEMINARS
  Covering the two seasons

“Things change sometimes quicker than expected “and we will now have the advantage of double the information on Trends, Colours & Forecasts:

1. From MODEUROP www.modeeurop.com
2. From Fashion Trend Pool www.fashion-trend-pool.com

We had very recently communicated to you through our Colour Cards for the Spring Summer 2019 season that CLRI would no longer be producing the Colour Cards in India.

Beginning the Autumn Winter 19/20 season, you have to order for the Colour Card directly with Germany with both MODEUROP and Fashion Trend Pool and you will now have two Colour Cards for one season!

Colour Cards would now be available from both:
1. MODEUROP and
2. Fashion Trend Pool

INDIA’s role:
We will continue to present our leather/ colour proposals both at:
1. MODEUROP, Offenbach, Germany and
2. Fashion Trend Pool, Stephanskirchen, Germany

There is no change here. Both, MODEUROP & Fashion Trend Pool will place orders with Indian Tanneries for the selected leathers and will acknowledge the contribution of India and the Tanneries on the official Colour Card.

ADVANTAGE:
We would now have the added advantage of information from two reliable sources.

DIGITAL INFORMATION: We will continue to provide digital information on Colour Trends, Texture Trends, Fashion Trends, Trade Fair Reports and Retail Photopacks exclusively on www.indiadesignclub.com and on our App IndiaDesignClub.

Next Colour Meetings for Autumn Winter 19/20 season
- MODEUROP Fashion Pool: 19-20 March 2018 in Berlin, and
- FASHION-TREND-POOL: 21-22 March 2018 in Pirmasens
A three months training programme in leather goods manufacture under CNP 1705 sponsored by GRIMCO, Govt of Gujarat (Special Component Plan) was started at Sami (Patan) Gujarat from 6th Nov 2017. Thirty SC women beneficiaries from that locality are actively participating in this training programme. Theoretical lectures on the materials, manufacturing process and market etc. has been completed. Practice of cutting, stitching and pattern making has been conducted.

Now, the training on fabrication of leather goods viz. coin pouch, key case, gents’ wallet, gents belt, ladies’ purses, bags etc. is being given to the trainees. Appropriate study material prepared in Gujarati has been distributed among the trainees.

Similar three months training programmes in leather goods manufacture has been started at Chandkheda (Ahmedabad) from 4th Dec 2017. Twenty-Six SC women beneficiaries are currently participating in this training programme. Practice of cutting, stitching, pattern making etc. is going on.

Another three months training programmes in leather goods manufacture commenced at Gambhu (Mehsana) Gujarat from 5th January 2018. Twenty-Four SC women beneficiaries have been enrolled for this training programme.
Two months’ skill development programme in leather goods manufacture

The two months’ skill development programme in leather goods manufacture was sponsored by GRIMCO, Govt of Gujarat was started on 13th November 2017.

Training in fabrication of various leather goods viz. key case, coin pouch, gents belt, gents wallet, ladies shoulder bag, shopping bag etc. has been imparted to the artisans.

Eighteen artisans participated in this training programme and this programme successfully concluded on 12th January 2018.

Products in combination with their traditional craftsmanship have also been developed during the training programme.

Stakeholders meeting organized by Leather Industry Development Corporation of Andhra Pradesh at Vijayawada held on 30th December 2018. CSIR-CLRI participated.

Stakeholders’ meeting for IFLADP. Hotel Radisson Blu, Chennai on 5th January 2018.

Dr B Chandrasekaran, Director, CSIR-CLRI received the first copy of the 36th Ariviyal Poonga science magazine This edition covers a special feature on CSIR-CLRI.

OBITUARY

Late V Elango, Senior Technician in Biochemistry & Biotechnology passed away on 7th Jan 2018 due to sudden illness. Our heartfelt condolences to the bereaved family.
Sustainability of Leather & Allied Industries

Sustainability today is an important issue for the leather sector. This encompasses both ecological and environmental factors, while keeping the consumer benefit as paramount. Leather sector is innovating by way of developing new products, chemical systems and reducing energy consumption, while maximizing raw material to leather/product turnover. 51st LERIG would introduce the state-of-art concepts in this area that Indian leather sector could consider for adoption.

Key Features

- **Venue:** Le Royal Meridien, Chennai
- **Inauguration:** 29 January, 2018
- **Nayudamma Lecture on 29 January, 2018 by Dr VK Saraswat, NITI Aayog**
- **Technical Programs on 30 January 2018**
- **4 Sessions, 9 Speakers, 7 panelists**

Thought Leaders*

Who will set the path for discussions?
- Dr M Rafeequo Ahmed
- Shri PR Aqeel Ahmed
- Shri N Shafeeq Ahmed
- Dr T Ramasami

Who will lead the discussions?
- Shri Mukhtarul Amin
- Shri Atul Chaturvedi
- Dr Ramanand N Shukla
- Shri Habib Hussain

* Tentative

Register your interest for participation by sending an email with contact details to lerig.clri@gmail.com or contact Convener (Dr KJ Sreeram) at 98401 25263

Delegate registration: Rs. 3000 per head. Registration opens on 10th January 2018

Sponsorship opportunities open [Gold (session sponsor – Rs. 5 Lakhs; silver – Rs 2.5 Lakhs] (contact convener for sponsor entitlements).

Organized by CSIR-Central Leather Research Institute
In association with Stakeholders of the Indian Leather Sector

Registrations open on 10th January 2018

Co-ordinating Convenor: Dr KJ Sreeram, Principal Scientist & Head, CATERS
Email: kjsreeram@gmail.com; Mobile: +91 98401 25263
LERIG co-ordination: Industrial Liaison & Publicity Wing, CSIR-CLRI