Sustainable zero wastewater discharge Strategy

Dr P Saravanan

Development of zero wastewater discharge technology was one of the research topics undertaken under the XI and XII five-year plan projects. Zero wastewater discharge can be accomplished in a sustainable manner only through segregating the waste streams and not by combining the waste streams and treat the same at the end-of-the-pipe. By combining the sectional waste streams from different unit processes, the contaminants of the waste streams combine and leads to the generation of secondary pollutants, which are difficult to treat. Therefore, internalization of hydrological cycle is the appropriate strategy, which can be attained through recycling the waste streams from different unit processes after subjecting the same to treatment. The pretanning processes aim primarily the removal of extraneous matter such as globular proteins, epidemis lipids, hair, and adipose layer from the hides and skins. The chemicals used for these purposes are also removed subsequently. Therefore, the waste streams of pretanning processes contain the extraneous matters other than those are removed in solid forms. The soak liquor contains salt, globular proteins, blood, dung and dirt. This saline stream even if the organic matters are removed cannot be used in any unit process of leather manufacturing. Therefore, the prudent approach could be the removal of organic matter from the soak liquor and subjecting the same to evaporation to obtain common salt, which can be reused for preservation or pickling. Liming liquor contains residual lime and sodium sulphide, lipids, and degraded products of the epidermis. The organic components present in the liming wastewater deter the reuse of the liming wastewater continuously. If the organic matters present in the liming are eliminated, the resultant wastewater will contain the residual chemicals such as lime and sodium sulphide. The liming wastewater free from the organic matters can be reused for liming continuously. The deliming waste stream including the waste streams from washing before and after deliming contains calcium sulphate or calcium chloride, calcium oxide, sodium sulphide, lipids and proteins. The quantity of organic matter though is not significant deters the reuse of wastewater. If the organic matters present in the deliming waste streams are removed, then the waste streams can be reused either for liming or soaking. The pickling waste stream contains residual common salt and sulphuric acid along with proteins and lipids. Cond. ...
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 July 2018 edition of The LEATHER POST.

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.

The cover feature is on "Sustainable Zero Wastewater Discharge Strategy." CSIR-CLRI commits itself to a clean and green leather Industry and will showcase every new technology for the cause. We have had eminent visitors from East Africa to this Institute accompanied by AISHTMA, SITA and FICCI.

An important event of the Indian Leather Sector is the launch of the IFLADP programme in Kanpur. I urge the members to use this programme and help enhance the growth of the Indian Leather Industry.

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.

Dr B Chandrasekaran
Director, CSIR-CLRI

24th July 2018
CSIR-CLRI warmly welcomes
Shri R Selvam, IAS
Executive Director of Council for Leather Exports
to the Indian Leather Industry

R. Selvam joined IAS in 2001 and has been allotted to Himachal Pradesh cadre. Before joining IAS he had served as Agricultural Officer in the Govt of Tamil Nadu from 1996 to 1999. Since 1999 to 2001 he completed his training in Indian Railway Traffic Service as well. He graduated from Agricultural College & Research Institute-Killikulam in 1993 and completed post-graduation in Plant Pathology in 1995 from Tamil Nadu Agricultural University, Coimbatore. He completed his post-graduation in Master in Public Administration (MPA) in 2016 from Harvard University, USA. Recently he joined as Executive Director-Council for Leather Exports, Chennai in the month of April-2018.

He had served in various capacities in the state of Himachal Pradesh. The important postings include Deputy Commissioner (Collector) in Lahaul & Spiti district and Hamirpur district, Special Secretary, Power, MPP, Non-Conventional Energy Sources, Special Secretary-PWD, Special Secretary-Revenue, Ex-officio Secretary cum Director-Department of Rural Development and Panchayati Raj, Registrar-Cooperatives, State Commissioner for Commercial Taxes and Excise.

He also served in Government of India in various capacities since 2007 to 2014. He served in the Ministry of Home Affairs and as advisor to Union Minister of Chemicals & Fertilizers in the Ministry of Chemicals and Fertilizers. He also served as Joint Director General of Foreign Trade in the Ministry of Commerce & Industry.

He has successfully implemented several state and Government of India programs. The remotest district of Lahaul & Spiti had been selected for the Best Infrastructure Development at All India Level for his contribution in the development of the district. The state of Himachal Pradesh was declared as second Open Defecation Free state at National level in October-2016 during his tenure. He was instrumental for the same. The rural development department-Govt of Himachal Pradesh received several National awards for his exceptional contributions in Pradhan Mantri Awaas Yojana, National Rural-Urban Mission and in MGNREGA. He also significantly involved in framing new pharma pricing policy, new urea investment policy and various other policy making issues at national levels.

He is interested in serving the downtrodden, farming and in writing about several social issues. He has been writing in Dinamani and Indian Express.
MEET AT AGRA 2018 –
12th EDITION- LEATHER,
FOOTWEAR COMPONENTS &
TECHNOLOGY FAIR

Name of Fair | Meet at Agra 2018, 12th Edition, Leather Footwear Components & Technology Fair
Venue | AGRA TRADE CENTRE, Village Singhna, Near Gokulam Water Park, NH2, Agra.
Fair Programme | Inauguration – Friday, 26th Oct. 2018 at 11:00 AM.
Business Days – 26th Oct. to 28th Oct. 2018 from 10:00 AM – 6:00 PM.

“Meet at Agra” has come a long way since its launch in 2007. Agra Footwear Manufacturers & Exporters Chamber (AFMEC) has strived hard to upgrade the Fair every year to provide better opportunities & facilities for our esteemed Exhibiters & the Business Visitors.

“We are proud to inform that this year AFMEC has taken the Fair to next level by organising “Meet at Agra 2018” - 12th edition, Leather, Footwear Components & Technology Fair at the Newly constructed state of the art Trade Centre, Village Singhna, NH-2, Agra from 26th to 28th October 2018” says Shri Puran Dawar, President, AFMEC
MEET at AGRA
Leather, Footwear Components & Technology Fair
26 - 27 - 28 October 2018
Agra Trade Centre
Village Singhna, NH-2, Agra

AGRA FOOTWEAR MANUFACTURERS & EXPORTERS CHAMBER
S-6, 2nd Floor, Friends Tower, 41-B Block, Sanjay Place, Agra, India
Ph: +91-562-4012253 Fax: +91-562-2854053
For more Information & Registration contact:
Col. R.K. Khindri (Retd.), Manager Admn. & Coord., AFMEC
Email: afmec.org@gmail.com Mob: +91-9837026771

www.afmec.org
Important Information about the Fair:-
1. Trade Centre is Located near Singhna Village, Delhi- Agra National Highway -2. It is about 20 Km from Sanjay Place. Bus will be provided to pickup Exhibitors from Sanjay Place Hotels & other Hotels along the route. Travelling time is about 30 to 40 Minutes.
2. About 200 companies from overseas & across the country will be displaying the finest Leather, A large variety of latest Footwear Components/Accessories, Adhesives & Shoe Finishes & State of the Art machinery /Technology.
3. We are expecting a footfall of 6000 Business visitors from across country & overseas.
4. As added attraction we will be having a Fashion Show & Gala Dinner on 26 Oct. 2018 at 8:00 PM in a 5 Star Hotel.
5. Technical Sessions / Panel Discussions will be held on 27th Oct. 2018 from 11:00 AM to 13:00 AM.

Exhibitors Profile: -
- Leading Tanners
- Finished Leather Suppliers
- Component Manufacturers & Suppliers
- Footwear Machinery & Equipment Manufacturers & Suppliers
- Footwear Accessories Manufacturers & Suppliers
- Footwear Chemicals, Shoe Finishes & adhesives Comanies & Suppliers
- Packaging Units
- Publication & Consultancy Services

Visitors Profile: -
- Leading Footwear Manufacturers
- Institutional Buyers from across the Globe
- Designers
- Technicians
- Government Officials connected with the Industry.

Why Fair in Agra is Important
Agra the City of TAJ is the biggest Footwear Manufacturing Hub of India & caters for 65% of the total domestic requirement. It has 30% share in total exports of Leather Footwear from the Country. Most of the world's Top brands are sourced from Agra. Hence Agra offers tremendous business opportunities to the Exhibitors of “Meet at Agra”.

Stall Charges with shell scheme: -
A) Indian Companies– Rs 5500/- per Sq. M + Taxes as applicable
B) Overseas Companies- USD ($) 150 or Euro 125 per Sq. M + Taxes as applicable

Bare space at the rate of Rs. 5000/- per Sq. M

Shell Scheme Stall Sizes

Shell Scheme
For 9 Sq. M Stall we will provide - 01 Reception counter, 02 Chairs, 01 Round Table, 06 Spot Lights, 06 Shelves or Hanging Rods, 01x5 Amps power point, 01 Trash Bin, Fascia & carpet.
Preference location Charges (PLC):-
- 10% Extra for Corner Stalls
- 10% Extra Three Sides Open Stalls in Centre Rows
- 25% Extra for Entrance Facing Stalls

Terms of Payment:-
25% payment is to be made at the time of booking & Balance payment to be made by 5th September 2018. All payments will be by RTGS/ Bank Draft in favour of “Agra Footwear Manufacturers & Exporters Chamber” payable at Agra.

Allotment of Stalls
Due to change in Location & Layout, fresh allotments of Stalls will be made on First come first serve basis as per availability.

Please rush your bookings by 20th October 2018 to get Stalls of your choice to:

Col. R K Khindri (Retd.)
Manager Administration & Coordinator
AFMEC, Agra; E Mail: afmec.org@gmail.com
Website: http://www.afmec.org

The Leather Post
Zero Wastewater Discharge Technology

Dr P Saravanan
Chief Scientist,
CSIR-Central Leather Research Institute

Background
About 800,000 tons of raw hides and skins are converted into finished leathers in India per annum. The value of export of leather and leather products from India is about US$ 5.8 billion (2015-16). The major leather clusters of the country are Dindigul, Erode, Ranipet, Melvisharam, Ambur, and Vaniyambadi in Tamilnadu, Jajmau, Banthar and Unnao in Uttar Pradesh, Jalandhar leather complex in Punjab and Kokata leather complex in West Bengal. About 28 billion liters of water is used per annum in India by the leather industry. And the same volume of wastewater is discharged every year. In January 2007, the High court of Madras had ordered implementation of membrane based Zero Liquid Discharge (ZLD) in all the tanneries in the state of Tamilnadu. In response to the court order, all the tanneries in Tamilnadu had installed Reverse Osmosis (RO) either individually or collectively in order to attain zero liquid discharge. The environmental issues forced the tanneries in other parts of the country specifically, Kanpur to opt for zero wastewater discharge system. According to the ZLD system followed in Tamilnadu, the combined wastewater after the secondary biological treatment is subjected to preparatory treatment methods, which includes sand filter, carbon filter and nano-filtration. Then the wastewater is subjected to RO. This operation yields mineral-free permeate (about 80%) and reject containing high levels of Total Dissolved Solids (TDS).

Permeate is used for leather manufacturing process and the reject is subjected to mechanical or forced evaporation. The solids (mixture of sodium chloride and sodium sulphate) is collected and stored. About 100 kilotons of reject solids is accumulated in Tamilnadu, which needs to be disposed in a secured manner. There is no economically viable and environmentally safe method available for the disposal of the reject solids. The following are the major issues of RO based ZLD system followed in Tamilnadu.

- RO and mechanical evaporation are energy intensive and economically not feasible
- There is no economically feasible and environmentally safe method of disposal of the reject solids and therefore the reject solids are collected and accumulated. Several tons of reject is accumulated in Tamilnadu tanneries.

Sustainable zero wastewater discharge - Strategy
Development of zero wastewater discharge technology was one of the research topics undertaken under the XI and XII five-year plan projects. Zero wastewater discharge can be accomplished in a sustainable manner only through segregating the waste streams and not by combining the waste streams and treat the same at the end-of-the-pipe. By combining the sectional waste streams from different unit processes, the contaminants of the waste streams combine and leads to the generation of secondary pollutants, which are difficult to treat. Therefore, internalization of hydrological cycle is the appropriate strategy, which can be attained through recycling the waste streams from different unit processes after subjecting the same to treatment. The pretanning processes aim primarily the removal of the extraneous matter such as globular proteins, epidermis lipids, hair, and adipose layer from the hides and skins. The chemicals used for these purposes also removed subsequently. Therefore, the waste streams of pretanning processes contain the extraneous matters other than those are removed in solid forms. The soak liquor contains common salt, globular proteins, blood, dung and dirt. This saline stream even if the organic matters are removed cannot be used in any unit process of leather manufacturing. Therefore, the prudent approach could be the removal of organic matter from the soak liquor and subjecting the same to evaporation to obtain common salt, which can be reused for preservation or pickling. Liming liquor contains residual lime and sodium sulphide, lipids, and degraded products of the epidermis. The organic components present in the liming wastewater deter the reuse of the liming wastewater continuously. If the organic matters present in the liming are eliminated, the resultant wastewater will contain the residual chemicals such as lime and sodium sulphide. The liming wastewater free from the organic matters can...
be reused for liming continuously. The deliming waste stream including the waste streams from washing before and after deliming contains calcium sulphate or calcium chloride, calcium oxide, sodium sulphide, lipids and proteins. The quantity of organic matter though is not significant deters the reuse of wastewater. If the organic matters present in the deliming waste streams are removed, then the waste streams can be reused either for liming or soaking. The pickling waste stream contains residual common salt and sulphuric acid along with proteins and lipids. If the organic contaminants are removed, the waste stream will contain only residual common salt and sulphuric acid, which can be reused for pickling continuously. From post-tanning, the waste streams from neutralization and wet-finishing are generated. The neutralization streams can be reused for neutralization in a counter current manner. The waste stream from wet-finishing contains residual chemical products such as syntans, fatliquors and dyes that are used in the unit process. Different kinds of syntans, fatliquors and dyes are used in wet-finishing. The waste stream contains differential levels of these products and moreover these products undergo chemical modification due to the reaction between these chemicals and due to addition of formic acid. Therefore, the residual chemicals are not present in the wastewater in the amenable form for reuse. Hence, reuse of this waste stream can be carried out by degrading the residual chemicals to the extent that they do not interfere with the process chemistry and efficiency.

Electro-oxidation is the process of oxidation in the organic matter is degraded on the surface or in the vicinity of the anode by the oxidants generated at anode. The individual sectional waste streams are subjected to electro-oxidation for removing the organic pollutants. And the treated wastewater, which is free from organic pollutants, can be reused appropriately in the processes of leather manufacturing.

Zero wastewater discharge – Technology Profile

The technology of zero wastewater discharge has been developed by CLRI, according to which the sectional streams from different unit processes are treated subjecting them to electro-oxidation using the specially designed electro-chemical cell. The treated waste streams are then reused. The stainless steel cathode and titanium anode are used in the electrochemical cell. The current density, duration of electro-oxidation, and initial COD are some of the important parameters that determine the effectiveness of the degradation of the organic pollutants. The RO mediated zero wastewater discharge, which is followed widely in Tamilnadu is associated with classical wastewater treatment, and then reverse osmosis followed by evaporation of the reject. The cost of attaining zero wastewater discharge is about Rs. 60 per m³ of wastewater. Moreover, this is also associated with the generation of the generation of primary and secondary sludge. The cost of achieving zero wastewater discharge through EO is about Rs. 20 per m³. Also, there is no generation of primary and secondary sludge.

Commercial scale demonstration of the technology has been done as many as ten tanneries in India and in two tanneries in Ethiopia. This technology has been licenced to three tanneries in India. Translation of the technology widely in India and other countries is pursued under CSIR Fast Track Translational project.

Dr (Smt) L Suguna, Scientist, CSIR-CLRI (Biochemistry & Biotechnology Department) received the Bharat Ratna Mother Teresa Gold Medal Award on 23.06.2018 from Global Economic Progress and Research Association.
"Technology Sourcing Fest for MSMEs": MSME – Technology Developers Interface Programme organized jointly by MSME-Development Institute, Thrissur, Ministry of MSME, Government of India and CSIR-National Institute of Interdisciplinary Science and Technology, Thiruvananthapuram held on 12th June 2018 at CSIR-NIIST Campus, Thiruvananthapuram.

In order to strengthen the interface between MSMEs and R&D Institutions for technology transfer and partnership, MSME Development Institute, the programme is envisaged as a Southern Summit of MSMEs, R&D Labs and Technology providers from southern states. The programme is intended to showcase Technology sources for MSMEs and to facilitate technology transfer for better technology management in association with technology providers. The programme included technology presentation, exhibition of technologies by R&D Labs, Presentation on technology requirements of MSMEs and Interactive meetings. The programme focuses on the following 4 sectors:

i) Food & Agro processing
ii) Environment & waste management
iii) Energy
iv) Composites

The programme was inaugurated by Shri. K. Biju IAS, Director of Industries and Commerce, Govt of Kerala. Dr. Ajaya Ghosh, Director, CSIR-NIIST, Thiruvananthapuram, presided over the function. Shri. P.V. Velayudhan, Director of MSME-DI, Thrissur, delivered welcome address and Shri. S. Sivagnanam, Additional Industrial Advisor delivered keynote address. Shri. Damodar Avanoor, State President, KSSIA, felicitated the function.
Technology Sourcing Fest witnessed with more than 300 MSMEs participated in the Programme.

Technologies of CSIR-CLRI

- Preparation of compost from animal hair waste (Process based technology)
- High Value Products from Trimming Waste (HVP-T)
- Collagen Sheet
- Sole from fleshing’s waste
- Diabetic Footwear and
- Development of leather and products from chicken feet skins - “Exploring the unexplored raw materials for leather processing”

BEST WISHES TO YOU ON YOUR RETIREMENT

Shri SRIDHARAN M R
Senior Principal Scientist
CHEMICAL ENGINEERING LABORATORY
CSIR-CLRI
President, Indian Leather Garments Association (ILGA)

Shri Motilal Sethi Inaugurated 12th FDDI Campus in Hyderabad on July 5, 2018 with Hon’ble Union Commerce Minister Shri Suresh Prabhu.

The Leather Post
The 'special package' for Leather and Leather Footwear Sector IFLADP (2017-20) was launched on 4th July 2018 in Kanpur by Honourable Shri Suresh Prabhu, Minister of Commerce & Industry. Shri Mukhtarul Amin, Chairman, CLE made a special address on the current status of growth potential of Footwear, Leather and Accessories Industry in India. The function was held in the august presence of Dr Murali Manohar Joshi, Member of parliament; Shri Yogi Adityanath, Honourable Chief Minister, Government of Uttar Pradesh and Honourable Sadhvi Nirjan Jyoti Ji.

Shri PR Aqeel Ahmed, Vice Chairman, CLE proposed the vote of thanks. Director, CSIR-CLRI interacted with the dignitaries and showcased the role played by CSIR-CLRI.
Calonge & Gaitonde jointly presented their leather materials and accessories in the 21st International Leather Fair at Ho Chi Minh city, Saigon, VIETNAM.

Key export products with high export revenue are predicted to continue to grow in 2018, including phones and components (annual increase of 10.4%) and computers and components (an annual increase of 15.6%). They are followed by garments and textiles with an anticipated export turnover of 28.5 billion US dollars for the whole of 2018, up by 9.5% compared to 2017.

Exports of footwear are projected to reach 16 billion US dollars, an annual rise of 9.2%, while exports revenue of machinery, equipment and components is estimated to gain 14.7 billion US dollars, up by 15% over 2017.

The same source, underlined that Vietnam’s exports will continue to face challenges due to increasing trade protection measures in some important trade partners. According to the latest edition of the World Footwear Yearbook, in 2017, Vietnam produced 1.185 billion pairs of shoes (a share of 5.2% in worldwide production), taking the third position as the largest producing country. In 2017 Vietnam was the second largest exporter of footwear with 7.4% share (1.021 billion pairs).

Source: WORLD FOOTWEAR NEWSLETTER

Vietnam: exports revenue to rise again

Vietnam’s export turnover is likely to reach 236.6 billion US dollars in 2018, an increase of 10% compared to the previous year, according to some analysts.

The Import-Export Department under the Ministry of Industry and Trade (MoIT) confirmed that the first half of this year ended with positive export outcomes, creating a good momentum for the rest of the year. According to the same source, Vietnam earned 113.93 billion USD from exports in the first six months of 2018, up by 16% year-on-year. Telephones and spare parts; computers; electronic products and components; garments; machinery; and footwear continue to be the sectors leading the growth of exports revenue.
Review meeting related to QRA & ERDMP of jetty operation for GCPTCL (A UNIT OF RELIANCE INDUSTRIES LTD) held at Chemical Engineering Department

CISRA of CSIR-CLRI, have been awarded the task of carrying out the Qualitative testing of the Safety aspects of the Semi Cryogenic Integrated Engine Test Facility for ISRO through TATA Projects Ltd.
Seasons’ Opening
“SPRING SUMMER 2020”

CURTAIN RAISER: Spring Summer 2020

Colour Club Meetings of MODEUROP & FASHION TREND POOL for SS 2020 will be held during 15-18 Oct 2018 in Berlin and in Hamburg respectively. CSIR-CLRI is a “catalyst” in enabling this endeavour reach the discerning in Indian Leather Industry.

<table>
<thead>
<tr>
<th>Curtain Raiser</th>
<th>Wednesday, 11th July 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last date for readying leather/ colour proposals</td>
<td>Friday, 7th September 2018</td>
</tr>
<tr>
<td>Sending the samples to Berlin and to Hamburg</td>
<td>Friday, 21st September 2018</td>
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<tr>
<td>Colour Club Meetings</td>
<td>15th - 18th October 2018</td>
</tr>
<tr>
<td>Order for Leather (with Indian Tanneries):</td>
<td>Tuesday, 23rd October 2018</td>
</tr>
<tr>
<td>Date to receive leather ordered (from Indian Tanneries) in Germany and in CLRI:</td>
<td>15th November 2018</td>
</tr>
</tbody>
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**NEWS IN BRIEF**

On 27th June 2018, Dr B Chandrasekaran, Director, CSIR-CLRI delivered a special lecture at NEIST Jorhat, Assam.
AISHTMA in association with SITA had arranged the visit of East African Delegates to CSIR-CLRI on 13th July 2018. The delegation team consisted of members from Kenya, Uganda, and Ethiopia.

- The Kenyan team was led by H.E. Ms. Betty Chemutai Maina, Principal Secretary- Ministry of Industry, Trade and Cooperatives, Kenya.
- The Uganda team was led by Hon. Mr. Michael Kafabusa Werikhe, Minister of State for Trade- Ministry of Trade, Industry and Co-operatives, Uganda.
- The Ethiopia team was led by H.E. Mr. Bogale Feleke Temesgen, State Minister- Ministry of Industry, Ethiopia. Members from SITA and FICCI also accompanied the delegation.

Their aim of visit was to invite investment from Indian Tanners and add value to their products by proper technology. In this connection a meeting was arranged with CSIR-CLRI team and a presentation was made by Dr. P. Saravanan, Chief Scientist about CSIR-CLRI activities and the technologies available to the delegation.

After that lab visits were arranged. The delegation visited the Centralized Testing facility Lab. Dr. KJ Sreeram, Principal Scientist explained the facilities available and the kind of testing services offered by CSIR-CLRI. The delegation also visited the GAIT analysis lab and Fashion Studio. A video on Indian leather and leather products market was shown to the delegates by Mr. Md. Sadiq, Chief Scientist. He explained about the fashion trends for the Autumn Winter 19/20 season.

A meeting with the leading leather industries led by Mr. Israr Ahmed Mecca, Regional Chairman (South), Council for Leather Exports was also arranged. The delegates comprising Mr. Habib Hussain, Mr. A R Senthil Kumar, Mr. Ramesh Prasad, Mr. R Kumar, Mr. C Anbumalar amongst Industry officials of CLE & AISHTMA had a fruitful discussion with the participants.
NEWS IN BRIEF
Visit of East African delegation to CSIR-CLRI on Friday, 13th July 2018
JIGYASA: SCIENTISTS & PG TEACHERS INTERACTION PROGRAMME
28th June 2018 to 4th July 2018, CSIR-CLRI, Chennai
Gujarat, with a population in excess of 60 million maintains a variety of industries. It has a special place in Indian economy as a forerunner in industrial development coupled with the inherent entrepreneurial talent. Gujarat is also blessed with a rich cultural and traditional past. The state boasts of an age old glorious culture that has managed to survive till date. The arts and crafts of Gujarat are unique to the state and are popular not only within the Indian subcontinent but all across the globe. The art and crafts industry of Gujarat includes jewellery, pottery, embroidery, metal work etc.

Leather and leather product making is one such activity which provides opportunities for additional income in the rural areas. The leather craft was traditionally used for making harnesses for camels and horses, musical instruments and footwear. Now-a-days, they are making articles like mobile covers, lamp shades, bags, chappals etc. Domestic and Foreign tourists are the buyers for these articles made by artisans.

In the making of these articles, the leather pieces are mostly hand stitched by passing thick thread through small slits made by stitching awl. By using punches of various size and shape, holes of different geometrical shapes are created on vegetable tanned leathers. Sometimes fabric pieces in bright hues are placed under these punched holes to impart attractive colourful look to the articles. By applying little pressure, using the same punches, different designs are engraved on vegetable tanned leather surface. Traditional local embroidery work is also done on the leather pieces with colourful threads. Silver and golden jari or thread is used for Jari Kaam on leather pieces. Coarse yarns are also used to create colourful patterns on the leather pieces. Mirror work is also done on some artefacts to add a touch of sparkle and irresistible charm.

It was decided by the Govt of Gujarat to provide technological support to such leather artisans through skill upgradation programmes so that they may be able to produce various types of leather goods of modern utility and ensure a sustainable income for themselves.

A proposal was submitted to GRIMCO Gandhinagar for conducting 12 skill upgradation programmes each of two months’ duration to train 300 leather artisans in various rural clusters in Gujarat. An amount of Rs 15,60,000 was received by CSIR-CLRI from GRIMCO, Gandhinagar as consultancy fee.

The training programmes were organized in the districts of Ahmedabad, Banaskantha, Bhavnagar, Jamnagar and Kachchh during the period from November 2017 to June 2018.

Kachchh was given special weightage for these training programmes considering the large number of active leather artisans in that region. Kachchh district is the largest district in India and very well known for its leather craft. In the villages like Hodka, Bhirandiyaro, Dhordo, Sumrasar etc. this leather craft is the means of business and livelihood for many rural families. These are mostly household jobs where men are involved in cutting, punching, shaping and joining of leather pieces and women add necessary embellishments to it. They also do traditional local embroidery work on the leather pieces with colourful threads.

During these training programmes a total of 313 artisans mostly women were trained. The Chairman of GRIMCO, Gandhinagar Shri Meghjibhai Kanzariya appreciated the training programmes during his visits to the training venues: Thorad, Sukhpar, Sumrasar Sheikh, Ambawadi, Bhuj, Sihor, Dhrol, Hodka.
SKILL UPGRADATION PROGRAMMES
in Leather Goods for ARTISANS IN GUJARAT

ARTISANS AT WORK

The Leather Post
FASHION TREND POOL
“Autumn Winter 19/20 season”

SALON:
The beauty and wealth of ROTTÖNE - Rouge - Ethno and folk influences - Poetry - Nostalgia - Very feminine - Seductive - but gentle - discreet - Mauve / rose variations - supple - soft - all shades from delicate rose to dark wine over dark violet to dark brown - also faux camaïeux - or shades - velvet - suede - lacquer! Unis or print wealth - a fantastic mix.

SIGNAL:
The topic full of power - sets signals - stands out - bold! Artificial - artificial - fluid movements - energetic - powerful - still trashy - 80s feeling - disco sport - strong colors like orange and red - intense blue, green and pink - up to the neon limit - black & white - lots of paint - high gloss or whole dull - a lot of high tech.

SILENCE:
Dear Designer,

Greetings from Council for Leather Exports (CLE), an export promotion organization under Ministry of Commerce and Industry, Government of India!

As you know, CLE has organized three successful editions of the Designers Fair. The 3rd edition of Designers Fair held from Feb. 1-3, 2018 attracted 47 designers, including 36 overseas designers from 30 companies. 872 business meetings were held during this fair.

We are pleased to inform you that the 4th edition of the Designers Fair will be held at Chennai during Feb. 1-3, 2019. The venue will be Rajendra Halls in ITC Grand Chola Hotel (same venue as last year). As in the past editions, overseas and Indian designers will be displaying their projects/designs in a fully constructed stand, for holding discussions with Indian companies for purchase of those designs. We are expecting participation of 50 designers in the fair.

We are providing an attractive package to the designers for their participation in the fair.
I invite you to participate in 4th edition of Designers Fair. There are no restrictions on the type of samples to be displayed in the fair. Designers can carry wide range of latest innovative samples for any season.

I look forward to seeing you in Chennai!
Thanks and regards
Naresh Bhasin, Convenor, Designers Fair, COUNCIL FOR LEATHER EXPORTS

### PACKAGE FOR DESIGNERS

- Sponsorship of return Air Ticket subject to ceiling of Euro 650 for Europe and USD 800 for USA per Designer and USD 450 for Asia.
- Free Hotel Accommodation for 4 nights from Jan. 31- Feb. 3, 2019 in Hotel ITC Grand Chola, Chennai + facility for early check-in (i.e. check-in prior to 12 noon of January 31, 2019 in case of early arrival of flights). Arrival can be planned in the morning/afternoon of Jan. 31, 2019. Only bed and breakfast are covered in hotel accommodation. Additional charges for use of SPA, room service, restaurant, bar, mini-bar in the room, gymnasium etc., will have to be borne by the designers.
- Complimentary Airport-pick-up and Drop
- Complimentary Fully Constructed Stand of 9 sq.mtr for displaying Design Projects/ Products which will include Name Board, Spot Lights, Shelves/Rails, Carpeting, One Table and 3 Chairs. The stand will be a closed stand.
- Visa recommendation letter from Council for Leather Exports
- No restrictions on the type of samples to be carried. Designers can carry samples for the fall /winter 19 or spring /summer 20 season or any innovative and appropriate designs.
- Excess baggage if any, incurred by the Designers can also be refunded after the fair, subject to submission of receipts showing excess baggage payment to the airline, subject to a maximum ceiling of USD 200 or Euro 200 per person (both ways).
INDIAN LEATHER INDUSTRY - STRIDING WITH CONFIDENCE