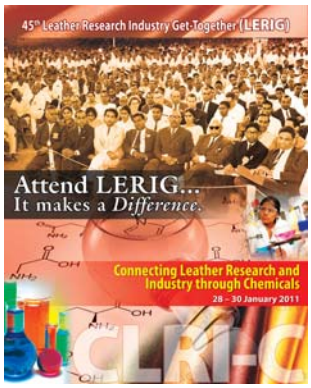
PRESS NOTE



45th Leather Research Industry Get-Together (LERIG 2011)

Connecting Leather Research & Industry through Chemicals (CLRI-C)

Organized by

CENTRAL LEATHER RESEARCH INSTITUTE

(Council of Scientific and Industrial Research)

in association with

ALFA, AISHTMA,CLCTA,CLE,IFCOMA,IFLMEA,ILGA, ILIFO, ILPA, ILTA, ISF, ITPO, LCDA,LCMA, SISMA,TALTEIA

VENUE FOR PRESS MEET : B.M. DAS HALL

Thursday, 27th January, 2011 *Time : 11.00 Hrs.*

Introduction

Central Leather Research Institute, fondly known as CLRI in the leather world, came into existence as one of the constituent National Laboratories under the umbrella of Council of Scientific and Industrial Research (CSIR) in Madras on April 24, 1948 with an objective to develop an internal capacity in the country to generate, assimilate and innovate technologies for leather sector. CLRI has been playing a pivotal role in developing the Indian leather sector through appropriate technologies, manpower training and recommending suitable policy support through Government agencies. The Institute, today, has emerged as the central hub in Indian leather sector with direct roles in education, research, training, testing, designing, forecasting, planning, social empowerment and leading in science and technology relating to leather.

Industry centric approach

CLRI has been working in tandem with industry from the very beginning. An initiative was made in this Institute around mid-sixties to provide a platform for the stakeholders to discuss and deliberate the ideas and concerns of common interest. Since then a get-together of CLRI and industry has emerged to be an annual feature of the Indian leather sector and is organized during the month of January every year by CLRI with the support of all the stakeholders of the sector. This event, earlier known as TGT (Tanners get-together), has been rechristened during 1980s as Leather Research Industry Get-together (LERIG). The program of the event provides opportunities to arrive at the preparative strategies in meeting the challenges of the leather sector. The meet has gained national and global visibility. The theme of LERIG addresses the immediate and long term concerns, priorities and opportunities of the leather and allied sectors. Today, the whole of leather sector looks forward to this annual event and this has formed an integral part of the international leather calendar. The recommendations, which emerge during the concluding session of the get-together, form a major base in formulating major Government policies relating to this sector.

LERIG 2011

It is the 45th time the annual get-together, LERIG, is being organized by CLRI for the leather sector during January 28-30, 2011. It is now time to introspect the present state as well as the challenges of the sector to enable the stakeholders to plan appropriate strategies for the future with an objective in attaining global leadership.

Leather making is chemical intensive. Chemicals play a major role to impact the prospect of the industry and its trade share in global market. It is a coincidence that this year has been marked by the United Nations as the Year of Chemistry. Hence, it has been considered appropriate to address the different challenges faced by the industry through chemical intervention during this year's LERIG. In line with these, the thematic title for LERIG 2011 has been chosen as "Connecting Leather Research and Industry through Chemicals" (CLRI-C). LERIG 2011 has been planned with the present theme, *i.e.* CLRI-C to focus on the following four thematic sessions :

- Green mark
- Brands and Customer
- Market
- Compliance

Product demonstration by chemical houses has been planned during post lunch session of January 29-30, 2011.

Meeting Media/Press

It has been an annual practice for the leather sector to introspect itself just prior to LERIG to have a latest update on the status of the leather and allied sector in respect of trade, market and knowledge power. This facilitates making appropriate plans for addressing the relevant issues relating to the sector with a Team India spirit.
There has been immense contribution of CLRI in generating significant eco-benign leads for leather processing. In this context, 'Meeting Pres/Media' prior to LERIG 2011 strives to focus on the sustainable knowledge leads/expertise available in CLRI in this realm with an objective of evolving appropriate public-private partnership for the overall benefit of the leather sector.

An outline of the proposed sessions during LERIG 2011

B.M. Das Memorial Lecture

LERIG 2011 is scheduled to start on Friday, the 28th January, 2011 with the oration in the honour of Prof. B.M. Das, the father of Indian leather industry and the first Director of CLRI. Dr. Samir Dasgupta delivers this prestigious B.M. Das Memorial lecture.

Inaugural function

LERIG 2011is scheduled to be inaugurated by Shri M Rafeeque Ahmed, Chairman, Council for Leather Exports, in the august presence of Dr. KV Raghavan, Chairman, Research Council, CLRI, Shri PR Aqeel Ahmed, Regional Chairman, South, CLE, Shri Andrea Ceretta, Chairman, Leather Chemical Manufacturers Association. Dr.A.L.Mudaliar Oratorical Contest being held since 1968 as part of LERIG was held this year on 19th and 20th Jan., 2011 for school and college students, respectively. The prize winners of this event will be awarded cash prizes during this event. MODEUROP awards and Design awards are to be presented during this session. Industry captains representing different parts of the country attend the programme.

Technical Sessions

The inaugural programme is followed by four technical sessions during January29-30,2011. International experts from both India and abroad are set to deliberate on different challenging issues.
Technical session 1 is planned on January 29, 2011 to deliberate on Green Mark, that is intended to promote sustainability in the process of environment and raise environmental awareness amongst stake holders. Expected outcome of the session is to Identify the need and methodology to be adopted for a labeling system for Indian leather.
Technical Session 2 is planned to deliberate on Brands and Customer. Brands echo the sentiments of the customer, creates trust, dependability and care. Customers expect their leathers to be smarter. Leather also needs to explore unknown territories, which can provide higher value. Expected outcome of the session is to evolve a methodology to understand property requirements, which reflects the desires of the customer and how chemicals can enable achieving the same.
The day has been planned to have demonstration of proprietary chemical products by M/s. Clariant Chemicals and M/s. Balmer Lawrie & Co Ltd.
The final day starts with the third Technical Session focused on market. Value addition is to economically add value to a product and form characteristics more preferred in the market place. Special properties that are conferrable to inferior materials, through chemicals, so as to achieve properties most desirable in market place forms the theme

for discussions. Expected outcome of this session is to provide insight into how value addition can be made in a manner that is preferred in the market place.
The final session is oriented towards compliance, that calls for making leather chemicals and leathers in accordance with established guidelines. It has been recognized that a strategy to meet the present and futuristic compliance norms needs to be evolved by the industry stake holders. Expected outcome of the session is to have an insight into REACH preparedness of chemical houses, current and futuristic needs for test procedures.
The day has been planned to have demonstration of proprietary chemical products by M/s. BASF and M/s. TFL Quinn India Ltd.

Concluding Session

LERIG2011 concludes with the 'Viewers Forum'. Representatives from both CLRI and industry are scheduled to deliberate in this Forum, on 30th January 2011 evening.

Summary of Achievements during 2010 at a glance

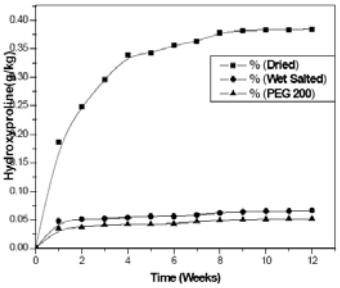
R&D outputs

The year 2010 has been quite eventful for CLRI. The Year has been the year of accomplishments for CLRI in several ways including providing leads and translating the same for industrial application as well as extension. The R&D achievements in different areas have been multifold. There have been several accolades for CLRI through the recognition of the contributions made in different spheres. An overview of some prominent outcome during 2010 is indicated below.

Pioneering initiatives in Leather processing:

As a part of providing eco-benign options for leather processing, the following major technological leads have been pioneered by the enabling research outputs in CLRI.

Abating salinity problem



- Salt free Preservation **:** Conventional salt based curing contributes to 40% of the total solids load. Hence, a new saltfree preservation method based on an eco-benign biopolymer has been developed. There is significant reduction in pollution load and the quality of leathers is on par with the conventionally salt preserved leathers. The developed preservation method seems to be a techno-economically viable alternative for salt-based preservation.
- Pickle free Chrome tanning : A versatile pickleless chrome tanning suitable for all substrates has been developed. The process completely eliminates the use of common salt thereby minimizing the chloride level significantly in sectional waste stream. The process also enables higher exhaustion of chromium used for tanning. It is an effective step towards TDS reduction. The process has gained much interest from the industry. A licensing Agreement has also been signed in connection with transferring the technology to Vaniyambadi Tanners Association. The transfer process is nearing completion. The association expressed its immense satisfaction in the technology.

Enzymatic intervention in Leather Processing

Environmental issues have been gaining much focus consistently in the research priorities in CLRI. Pioneering efforts have been made to ensure a paradigm shift in leather processing from chemical base to bio-processing. Effective leads have been obtained in respect of eco-benign preservation, enzyme led leather processing, bio-based tanning system and process engineering that involves reduction of volume of waste water discharged from tanneries through suitable water management and recycling measures. An integrated one pot approach for dehairing and fibre opening for goat skins by drum method has been standardized using a mixed enzyme formulation. The extent of dehairing and fibre opening are complete and the final quality of leather is comparable with fine grain.

Enzymatic defleshing : An enzymatic process, which affords flesh removal by bulk treatment of hides and skins in tanning drum has been developed. This significant lead, on scaling up, would ensure major technological transformation in leather making.

Zero Emission Research Initiative

A new technology of zero wastewater discharge, based on the concept of segregation of sectional waste streams of leather processing, treatment and appropriate reuse has been developed under the aegis of the network programme on zero emission research initiative in Leather (ZERIL). A pilot scale facility of 500 Litres capacity has been created at CLRI on public-private partnership mode for the demonstration of the technology to industry.

Four tanneries, two each from Kolkata and Kanpur, have volunteered for commercial scale experimentation and eventual technology licensing. The zero discharge process has been demonstrated to two tanneries in Kanpur. The efficacy of the technology has been proved. This technology provides scope for attaining zero wastewater discharge with reduction in water input, chemical reduction, and cost reduction with no solid wastes or harmful gaseous emissions from treatment process. Initiatives are taken for licensing of technology next month.

Natural Garment Leathers - Growing environmental challenges led the tanners to revisit vegetable based materials for eco-benign tanning. However, the indiscriminate use of vegetable tannins and subsequent stripping prior to retanning and fatliquoring is causing concern. Hence, a method based on 8% offer of wattle for tanning followed by polyamide based retanning and fatliquoring with a 50:50 combination of synthetic and natural fatliquors offer quality garment leathers with reduced pollution load.

Rationalization of usage of dye : A lead has been developed to minimize expenditure on dye in leather processing by way of providing a process that not only minimizes the dye discharge at the end of dyeing process, but also ensures recovery of excess dye for reuse.

New frontiers in Microbial leads

A range of enzymes (Protease, lipase, tannase) has been developed from microbial sources for application in leather processing. A collaborative programme has recently been undertaken with M/s Shri Meera Labs Pvt Ltd, Chennai to formulate a protease developed under New Millennium India Technology Leadership Initiative to explore possibilities of its use in eco-benign leather processing. Moreover, amylase has been developed from a yeast strain. Further, biosurfactants and extracellular enzymes of marine microbial source have been found to demonstrate complete reduction followed by solubilization of chromium in wastewater.

Environmental Management

Reject management in CETP

The disposal of the evaporated residue onto secured land fill is not encouraged by pollution control agencies in India for the fact that the leachate from the secured land fill is difficult to be treated. CLRI has successfully completed the task of separating the reusable grade sodium chloride, calcium chloride and calcium sulphate from the evaporated residue at semipilot scale.

Commissioning of CETP at Jalandhar Leather Complex

Technical expertise from CLRI has enabled construction of CETP of 5 MLD capacity at Jalandhar Leather complex. It has presently been under commissioning and stabilization stage. After successful commissioning, the treated effluent will meet Punjab Pollution Control Board standards.

Probing on Ultrasound for application in Leather industry

Initiatives have been made to make use of ultrasound for enhancing efficiency of operation in leather processing industry. Use of ultrasound in Process intensification in respect of various unit operations relating to leather making has been studied. The study has offered improvements in process efficiency, quality of leather, limiting pollution load in tannery effluent streams, which is of great social concern. The concept has already attracted global attention.

Bioremediation of Tannery Effluent

A new lead relating to performance of Consortium of Blue-Green Algal Species in Bioremediation of Tannery Effluent has been a significant development towards a better

option for effluent treatment. Standardization of the lead is envisaged to be able to open a new frontier in the area of eco-compliant treatment of tannery effluents.

Eco-benign Fungicide

A plant based fungicide for leather and leather products protection has been developed. Further standardization of the product would provide better alternatives for the existing products.

New frontiers in Solid waste utilization

Chrome shaving, an important solid waste generated in leather processing, has been found to be useful as filler in Bitumen Road Construction. Moreover, proteinous products prepared from Chrome shavings and Limed fleshings have been found to be useful as retanning and color enrichment agent.

REACH compliance

CLRI has developed procedures for REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) compliance testing. A database indicating potential cause and origin for REACH restricted substances for leather sector has been compiled. An ultrasound assisted procedure for extraction of restricted substances has been developed, which is capable of minimizing solvent usage for testing by more than 80%.

Newer dimensions in wound/burn healing

CLRI has gained core strength in respect of wound/burn management. M/s Bio-collagen Technologies SDN Bhd., Malaysia, which has been granted licence in respect of six wound care products, is at the advanced stage of commercializing the products. Further, frog skin for the first time has been demonstrated to possess lipid components with pharmaceutical and therapeutic potential. The identification and characterization of such natural healing molecules and evaluating their mechanism of action would therefore provide basis for understanding the cues of Nature and hence can be used for application in medicine. Moreover, a bacterial secondary metabolite with free radical behaviour has been identified and characterized. This has been found to be effective against methicillin resistant bacterial species of burn patients.

Material innovation - Newer Frontiers

Preparation of composite material from leather wastes is being explored to ensure economic utilization of wastes for value addition. Natural fibre based materials from a variety of sources such as pine apple leaf fabric, banana fabric, soya fabric, endi and muga silks have been evaluated for their potential to fabricate consumer products. It has been established that a judicious combination of these alternate natural materials with leather forms a promising matrix, which finds potential application in fabricating a range of consumer products. Public-private partnership model is being explored to ensure further innovation and product development.

Rationalization of leather garment designing

Drape, which is an important property for garments, has been shown to be influenced by different mechanical properties. The study can be used as a basic tool for leather selection to facilitate design and construction of garments.

Newer Frontier of Insole Material for Reduction Of Fatigue

An interesting study on the effectiveness of comfort insoles for reducing fatigue discomfort in police personnel has been done. Peak plantar pressure was reduced and total contact area was increased with conventional shoes with PU insoles than conventional shoes without PU insoles. Pressure distribution pattern was improved on regular usage of comfort insole, which in turn improved gait pattern and reduced foot pain. Thus, this study recommends that the PU insole developed by CLRI is suitable for application in police shoes for reducing / relieving fatigue discomfort due to long period of standing and walking.

Fashion forecasting for leather

CLRI plays the role of a 'design interpreter' catalyzing the growth of the leather and leather products sector by motivating the members of the Indian Leather Fraternity to stay ahead of fashion in LEATHER. TODAY, Tanners in INDIA are developing the new range of leathers/ colours within days of CLRI producing the MODEUROP Colour card and reaching out to Buyers not only abroad but also to the discerning product manufacturers in the country. Getting one Indian colour into the MODEUROP Colour Card in 1994 was a matter of prestige. Today, India has almost 50 – 70% of the colours chosen, featuring from Indian proposals.

At the MODEUROP Colour Club Meeting for the "Spring Summer 2012 season" held during 15-16 November 2010 in Santa Croce, ITALY; 18 out of a total of 31 colours were selected as "MODEUROP" from the Indian range of leather/ colour proposals, in the three colour groups - *Be Excited, Be Balanced, Be Essential*. 10 out of a total of 21 colours selected for "SHOES & ACCESSORIES" and 8 out of a total of 10 colours selected for "Leather garment" feature from India.MODEUROP requests INDIA to host the Spring Summer 2013 edition in INDIA.

Industry linkage

Strong linkage with industry has been the cornerstone for the activities undertaken at CLRI. While the exiting bond has been strengthened, newer linkages have been established during the year 2010. This has been amply demonstrated by the externally projects undertaken, technical services rendered and technologies transferred. The Institute has also organized several information dissemination programmes in different parts of the country for the benefit of the industry. Collaboration at both National as well as International level has helped in image building in respect of the capabilities of CLRI.

International Consultancy

A major consultancy project relating to rendering technical expertise for enhancing the efficiency as well as effectiveness of selected seven export oriented tanning units in Ethiopia is nearing successful completion. Achievements have been made in the areas

of capacity utilization, productivity, product development, system development and documentation. The success of the project has fetched another similar project for enhancing efficiency of more selected tanneries in Ethiopia. More emphasis will be given to strengthen the capabilities in product development, newer finished leathers and articles, to implement technology upgradation, quality management, strengthen machinery maintenance system and for securing environmental preparedness of the tanneries to meet the EPA regulations. Moreover, Govt of Ethiopia has requested for CLRI's expertise for capacity building of Leather Industries Development Institute (LIDI), Addis Ababa, Ethiopia on twinning basis. It has been an opportunity to demonstrate the capability of the Institute on a global platform.

Knowledge Portfolio

The knowledge portfolio of CLRI has been significantly strengthened by the addition of more IP products, majority of which are invention outputs in different areas. A software titled Scientosoft relating to scientometric studies for degree of collaboration has also been filed for copyright protection.

Transfer of know-how

Conscious efforts are made to transfer the technological leads/Know-how to the user industry for commercial exploitation.

Two licensing Agreements have been signed during the year 2010 in respect of the transfer of technology to the following clients:

Sl.	Know-how	Patent application no.	Licensee
1	Pickle free Chrome Tanning Process	177Del2002 & 2108Del2008	M/s. Vaniambadi Tanners Enviro Control Systems Pvt. Ltd., Vaniambadi
2	Waste water treatment using carbon nanotube	316Del2004	M/s Hygrevar Pelican Affordable Housing Pvt. Ltd., Chennai

Tannery Modernization

The Programme Implementation Unit (PIU) for Tannery Modernization under the IDLS scheme operates at CLRI, which is the nodal agency for this purpose. The scheme has been extended even to eleventh five year plan period. As of now, the IDLS scheme pertaining to tanning segment has been able to enroll 620 tanneries, generating an investment to a scale of Rs.720 Crores towards modernization of the Indian leather sector in terms of additional plant and machinery, effluent treatment systems, quality control and safety measures. The applicant tanners are largely from the four states – Tamil Nadu, West Bengal, Uttar Pradesh and Punjab.

Looking Ahead : The industry has at present been confronted with multidimensional challenges, many of which emerge from conventional chemicals. Hence, it makes sense to address the issues linked to chemicals and provide viable solution for the sustenance of the industry. Knowledge leads available in CLRI provide technological solutions to many of such problems. It also necessitates appropriate Public-Private-Partnership model to prove the technological leads at a credible scale for further commercial exploitation.

LERIG 2011 strives to offer a sound platform towards the attainment of this. This is bound to make a difference.