On the occasion of the 150th birth anniversary celebrations of the Father of the Nation; CSIR-CLRI remembers his “Words of Wisdom”

“...It is estimated that nine crores worth of hides and skins are exported from India. It is not only loss of economic opportunity…. What is needed is technology and technical training to convert those hides and skins and value added products for export.

It gives a meaningful employment to middle class intelligentsia to contribute to social empowerment.”

Mahatma Gandhi on 27 September 1934
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 September 2018 edition of The LEATHER POST.

A month of Annual General Meetings of the various trade bodies and associations of participation in innumerable international leather and product fairs; September every year is a very happening month. The trade looks forward to the markets for orders and to add to the exports of this country.

In this edition, CLRI focuses on Greening the Indian Leather Sector through its various technologies and I, on behalf of my colleagues at CSIR-CLRI, exhort every member of the fraternity to work towards greener production of leather and leather products.

May the good sentiments in trade continue and we reach our desired goals.

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.

27th September 2018

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Prof. Mushi Santappa
Prof. M. Santappa (02.10.1923 – 26.02.2017) was a polymer chemist with double PhDs from University of London and Manchester University in UK. Prof. Santappa became the Director of CLRI on August 1, 1973 and continued until 1981. He was intimately connected with the programs, planning and organization of chemical and allied industries and actively involved with the research and development activities of the Institute. He served as a Vice Chancellor of Sri Venkateswara University and the University of Madras. He was an elected Fellow of the Indian Academy of Sciences, National Academy of Sciences, India, Royal Institute of Chemistry and New York Academy of Sciences and a founder fellow of the Academy of Sciences, Chennai. He received the Shanti Swarup Bhatnagar Prize, one of the highest Indian science awards, in 1967, for his contributions to chemical sciences. He was also the recipient of degree of Doctor of Science (honoris causa) from Andhra University, Madras University, Sri Krishna Devaraya University and Madurai Kamaraj University. The Society for Polymer Science, India has instituted an annual award, “Professor M. Santappa Award”, in his honor, which recognizes excellence in research in polymer chemistry.

Dr. Kondapuram Vijaya Raghavan
Dr. K. V. Raghavan (01.10.1943 – 12.10.2017) was a Chemical Engineer with a Ph.D. from IIT, Madras. After working in IICT, Hyderabad the then and RRL Jorhat, Dr. Raghavan joined CLRI during 1986 as Scientist ‘F’ and then became Director, CLRI in February 1994. He has initiated and developed two important R & D divisions Viz. Chemical Engineering and Cell for Industrial Safety and Risk Analysis. During his tenure as Director, he made significant contributions for the growth of the Institute in terms of external cash flow and strengthening Institutes base as Technology Reservoir. He took over the Directorship of Indian Institute of Chemical Technology (IICT), Hyderabad in 1996. On successful completion of this tenure, he was appointed as the Chairman of Recruitment and Assessment Centre of DRDO, Ministry of Defense, Government of India in May 2004. Dr. Raghavan was also a INAE Distinguished Professor since 2008 at IICT, Hyderabad. He also served in many prestigious committees. He was a recipient of several awards and recognitions including the NRDC Invention Promotion Award, Nayudamma Gold Medal of AP Akademi of Sciences, Fellow of the National Academy of Engineering, Indian Institute of Chemical Engineers (IIChE) and A.P. Akademi of Sciences and a Distinguished Fellow of University of Grants Commission (UGC).

“Santappa-Raghavan Memorial Lecture”
by
Dr. R. A. Mashelkar
10:30 am, Wednesday, 3rd October 2018,
Triple Helix Auditorium CSIR-CLRI, Chennai

From Incremental to Disruptive Game Changing Innovation

Dr. Raghunath Anant Mashelkar
Incremental innovation is the norm but disruptive innovation is an exception. Disruptive innovation has invariably arisen due to out of the box and lateral thinking, appetite for risk taking, trust and tolerance. The lecture will lay out a path forward for building an innovation ecosystem in India that fosters the movement from incremental to disruptive game changing innovation, bringing in exponential inclusive growth with sustainable transformation.
In plant technologies demonstrated to Indian tanners
GREENING THE LEATHER
Bringing A Paradigm Shift from “Don’t to Do-Ecology”

Achieving environmental stipulations in a cost effective manner is easier through coupling of end-of-pipe treatment and in plant process control has been demonstrated to the Indian leather industry. An approach involving do-how was adopted. The concept involved the development and demonstration of a basket of technologies that were:

a) easy to apply
b) could bring in quantifiable reduction in pollution load at lesser cost of treatment
c) reduction in material cost owing to reduced usage and d) reduction in cost per litre of waste water treatment.

In plant technologies demonstrated to Indian tanners
Reduction of Pollutants at Source: Through In-Process Changes

Technologies for reduction of total dissolved solids: The contribution of neutral salts to tannery wastewater originates from the salts used in short term preservation of raw hides/skins by the abattoirs and primary sources, processing inputs by tanners and those formed during processing on account of the pH alterations employed in leather manufacture. Ambient preservation of hides and skins at room temperature at 60-65% moisture content has been developed. These methods employ either bio-preservation or use of natural products in place of common salts. Silicates in the form of silica gels have been employed in the preservation of hides and skins without the use of common salt. In-house efforts on alternative curing strategies have led to standardization of methods for neem oil formulations, salts of organic acids, magnesium oxide and chilling methodology.
Although there are several technological alternatives to the conventionally employed preservation methods based on sodium chloride for raw hides/skins, the utilization of such alternatives under field conditions is low due to several techno- and socio-economic factors. However, desalting of raw hides/skins stock in tanneries has led to a reduction of 15% load of TDS at the solar pans.

This solution is being adopted in number of tanneries in Tamil Nadu. Enzyme assisted de-haring and use of better quality lime in tanneries have led to significant reduction in TDS, (~15%) loads. Segregation and recycle technologies for pickle and chrome tanning liquors offer a possibility to reduce about 10% of TDS load in composite tannery wastewaters.

Technologies for the reduction of biological and chemical oxygen demand: It has been possible to reduce the emission of BOD and COD loads per ton of leather processed by 30-40% by the implementation of cleaner technologies in a group of 258 tanneries in Tamil Nadu. Critical technologies required to achieve such a reduction have involved the implementation of mechanical desalting, enzyme assisted sulfide-reduced de-haring and cleaner chrome tanning.

Optimization of inputs of lime, sulfide, sulfates and common salt and chrome tanning salt enable the reduction of BOD and COD loads through in-process changes.

Technologies for reduction of sulfide load in tannery wastewaters: It has been possible to employ the commercially available enzymes to replace 50-60% of sodium sulfide loads required for loosening hair from the hide/skin. This leads to significant economic and environmental advantages. A net gain of 2% increase in area of leather has been demonstrated in several cases. Such an increase in area could well compensate for increased cost of enzyme assisted de-haring technology. Reduction of sulfide concentration in tannery wastewaters by about 50% enjoys a potential opportunity to save the cost of end-of-pipe treatment of tannery wastewater by about 8-10%. This has now been achieved by a number of tanneries in Tamil Nadu. Enzyme based lime-free de-haring and fiber opening has been successfully demonstrated on various substrates like goat, sheep, cow and buff calf. The commercial viability of the technology for vegetable and chrome tanning has been demonstrated successfully. Bio-based leather processing may revolutionize leather processing and consequent non-traditional biotechnological method will ensure clean and green environmental status. The methodology ensures reduction in chemicals, process time, water, power, solid and liquid wastes, too. A cocktail enzyme formulation that can completely eliminate lime in fiber opening and also reduce the time for process
has been developed. The technology received the CSIR Technology Award in 2015. Industrial scale demonstration of this technology has been successful.

Technologies for zero discharge leather processing: CLRI has played a pivotal role in the secured water management in leather processing through recycling methodologies in soaking, liming, pickling and tanning. Direct pickle liquor recycling and direct chrome liquor recycling systems have been implemented in commercial tanneries. It has been demonstrated in a commercial tannery the use of water can be reduced to less than 6 litres per kg of raw material processed through these technologies. Water recycle and reuse method based on zero wastewater discharge from beam house has been developed and standardized at semi-technical scales. In the new methodology, water consumption is reduced from 17 to 1.7 L for one kilogram of hide in raw to wet blue processing. This approach can, in principle, lead to water renovation and recycle in individual tanneries through applications of membrane and other advanced technologies. By coupling appropriate in plant control with reuse methodologies a zero liquid discharge methodology for leather industry has been developed.

Technologies for reduction or elimination of chrome discharge in tannery wastewater: Chromium(III) salts are extensively used as potential tanning material globally. The commercially available salts and methods lead to an uptake of about 40-70% of the material employed for tanning. Poor utilization of chromium leads to environmental problems. Although chromium is an essential trace element, it has been included among toxic substances when the concentrations are large. An integrated chrome management approach has been developed and implemented. This approach has gained significant importance in combating pollution problems emanating from chromium in tannery wastewaters. It is now technologically feasible and economically viable to increase the uptake of chromium during tanning to nearly 98-99%. Chrome recovery/reuse technologies suited for various levels of investment potentials have already been implemented with high success. Chrome recovery/reuse methods are now in commercial use as mitigation method. It has become a financially attractive method for tanners due to pay back periods of 1-2 years. More than 100 such plants have been installed all over the country.

Cleaner chrome tanning methods based on high exhaustion principle have now been evolved. Closed pickle-tan loop methods have emerged based on ethanolamine as well as aluminum based tanning salts. Exhaust aids for chrome tanning based on polyamides, protein hydrolysates, poly carboxylic acids and other organic additives have been introduced in cleaner chrome tanning as a mitigation methodology. Economic benefits of such methods are now established. Saving
in post tanning chemicals has been demonstrated in many tanneries in the country. Closed pickle-tan loop method affords a net saving of Rs.2000/- per ton of leather processed. These technologies offer a secure means to practically eliminate the problem of pollution due to chromium based tanning methods while avoiding also the discharge of neutral salts. 11 such chrome management systems have been established under Leather Technology Mission project.

A salt free, zero chrome tanning technology developed at CLRI introduced the process of chrome tanning at high pH with masking. Suitable for all substrates and product mix, this technology found acceptance in various leather clusters. A UNIDO-CLRI centre for salt free tanning was established to propagate the technology.

A concept of dry tanning, wherein chrome tanning is carried out in the absence of water has been developed and demonstrated at industrial scales. This process not only avoids use of water but also eliminates the preceding step of pH reduction through acid in the presence of salt added to prevent swelling. A parallel strategy effectively uses the water inherent of skin. It has been found that the quality of the leathers processed without process water (0% water) was similar to the conventionally processed leathers. All the process parameters have been standardized. Further, the present technology provides near zero waste in chrome tanning and avoids pickling and basification operations thereby enabling reduction in TDS from identified streams. In addition, there is a significant savings in water, time, energy and thereby processing cost. This technology has been demonstrated at commercial scale both at Erode and Kanpur.

Chrome less tanning technologies such as plant oil mediated vegetable tanning, chrome free/mineral free tanning for upholstery leathers have all been developed in recent years and demonstrated to the industry.

**Treatability audit:** Post tanning operations involve the use of performance chemicals namely re-tanning agents, fat liquors, dyes and finishing auxiliaries. Exhaustion levels of many of these materials have now been quantitatively assessed. Treatability of post tanning chemicals as well as neutral salt content form two important criteria which need closer scrutiny. Contributions to COD from many re-tanning agents and fat liquors are now being assessed and eco-benign rating of post tanning auxiliaries is made. Optimization of such chemical inputs as well as choice of inputs based on treatability data form the most practical mitigation strategy. Aqueous finishing formulations, formaldehyde-free finishing, audit of azo dyes for environmental acceptability, and biodegradable biocides have attracted interest. Benefits of the use of environmentally benign post tanning chemicals for leather processing have been demonstrated in many tanneries in Tamil Nadu.
Through better process control and improved devices: Conventional leather processing involves manual wet operations. This leads to a) excessive use of chemicals and water; b) improper utilization of man power; c) inaccurate measurement of process variables; d) non-uniformity of quality of leathers and e) generation of large scale effluents. The concept of modernization has emerged to meet the increased international competitiveness to gain cost competition through increased productivity and consistency of product quality as well as environmental security. The micro-process controlled systems that have been reported are computer assisted chemical addition system (CACAS); computer assisted water addition system (CAWAS) and computer assisted pH monitoring and drums control. The computer assisted processing provides saving of chemicals and water inputs by 25 and 10%, respectively. Consequently, the overall pollution load can be reduced by 10-15%. An online method for determination of pH and temperature of the process vessel has also been developed.

Demonstration of Do-Ecology Solutions in Leather Sector in Tamil Nadu: In the wake of the order of the Supreme Courts of India, nearly 400 tanneries in the state faced closure. CLRI and NEERI have been able to work with the entire tanning industry in Tamil Nadu and enable the sector to gain environmental security through application of technologies. Although further improvements are required, there has been a significant impact due to adoption of cleaner technologies in the leather sector in Tamil Nadu. It has also been demonstrated that a tannery with a production capacity of 2000 kg of hide/skin per day might potentially save Rs.1.4 million per month by adoption of cleaner technologies. The implementation of such cleaner production systems has led to saving of vital economic activity in the state of Tamil Nadu. There is now need for a National Movement on cleaner production in the Indian leather sector. A sector specific action plan for pollution prevention and control in the leather industry has been prepared at the behest of Ministry of Environment and Forests, Government of India. The implementation of the action plan will pave the way for further drastically minimizing environmental risks from tanning sector to near-zero values.

Eco-testing: Empowering the Nation to Meet Global Eco-bans

With the support of Ministry of Commerce, Government of India, a specialized centre for testing of eco-sensitive chemicals was established at CSIR-CLRI. The centre provided support to the leather industry for screening eco-sensitive chemicals, such as banned aryl amines, formaldehyde, Cr(VI) and PCP as per international eco criteria. Sophisticated instrumentation for isolation, separation and estimation was procured. With growing stipulations through European commission regulations such as REACH, the facilities are kept updated for enabling the industry as well for developing protocols and carrying out analysis of extent of compliance by Indian industry. The CSIR-CLRI provides for the industry solutions to commonly found non-compliance issues, thus ensuring their commitment to sustainability.

Facilities for analysis of restricted substances in leather have been setup at CSIR-CLRI and elsewhere to ensure industrial compliance.

**Waterless Chrome Tanning Technology**

Chromium is known as the king of tanning as it is widely used for leather making world over. The average uptake of chromium by the pelt during tanning is only about 65% out of the chrome tanning agent offered. Therefore, huge quantities of chromium tanning agent is discharged along with the wastewater. Apart from the economic loss, the environmental impact associated with this emission is very significant. The known methods of chrome management such as chromium recovery and reuse, direct chromium liquor recycling and use of high exhaust chrome tanning agent are associated with certain disadvantages. CSIR-CLRI has developed a ‘Waterless Chrome Tanning Technology’ (WCTT) under the 12th Five-year plan project namely ‘Research Initiative for Waterless Tanning’ (RIWT).

According to the waterless chrome tanning process, which has been patented by CSIR-CLRI in India and abroad in 2016, chrome tanning is carried out without water and addition of any new chemicals/products. And, pickling and basification are averted. Apart from addressing the issue of chromium discharge, this technology also brings about the benefits of reduction in total dissolved solids load. The quality of leathers thus produced is also found to be better than the leather produced in the conventional manner. A tannery producing wet blue leathers from 10 tons of skin/hide per day will be able to save about USD 100,000 per year by means of reduced BCS offer, eliminating rechroming process and also through dispensing with chromium recovery. In India, nearly 60 leather manufacturers have obtained the license to adopt this technology. CSIR-CLRI has taken the initiative of marketing this technology in abroad also (Ethiopia, Sri Lanka, Rwanda and Vietnam) through demonstrations and workshop.
CSIR-CLRI traces the growth of unique trinity partnership between academy, research and industry. By serving as the department of leather technology for the University of Madras and now the Anna University, the CSIR through its laboratory the Central Leather Research Institute (CLRI) develops the skilled manpower required for the sustainable development of the leather industry. That the leather industry has grown from exporting about Rs. 800 lakhs worth of raw hides/skins and semi-finished leather in 1944-45 to USD 5854 million in 2015-16 has to be attributed to the technologies imbibed by this industry. The transition to an industry manufacturing high quality leather and customer desired products has not been easy. Several paradigm changes had to be adopted, a process that has brought in sustainability and value addition. In this process, the role of CSIR-CLRI as a technology innovator and developer, demonstrator and translator, policy framework advisor has been phenomenal. In bringing out this publication, CSIR-CLRI also looks forward to a much greater role – one of transforming itself into a worldwide hub for leather research and education, a process through which it would bring in global leadership for Indian leather.

Bringing in Paradigm Shift from Chemical to Bioprocessing

The making of leather is an age-old process. World over leather is made employing technologies which involve processing of skin or hide using large amounts of industrial chemicals and a wide variety of specialty chemical formulations. A large number of the processes involve ‘do-undo’ operations resulting in severe environmental pollution. The world is compelled to follow this highly polluting ‘Chemical Route’ in absence of any alternative. This was a great challenge before the scientific community.
Under the NMITLI programme, a paradigm shift has been brought about in beam house operations in leather manufacture through bioprocessing as opposed to the currently used chemical processes. World-class leads have been obtained for an environmentally friendly bioprocessing route for ambient preservation of skin/hide, enzyme only de-haring and de-fleshing.

In the first phase credible technology leads have been obtained for lime/sulfide free removal of hair and salt-less preservation of hides/skins. During the Phase 2 of the project, commercialization of the leads gained has been targeted. Three chemical houses have expressed interest in technology licensing of the lead products. In order to enable commercial level trials, bulk production of enzymes has been found essential. CLRI has initiated a new model of operational leasing of upscaling facilities for bulk production of enzymes from vendors.

Specific technology packages for the above are being developed with the user industry for commercialization. The development is poised to change globally, the face of a highly polluting industry forever.

A true PAN India network of research institutions and industries the output of this project is likely to translate into industrial outcome in the years to come.

**Namami Gange**

National Ganga River Basin Authority has started a Mission Clean Ganga with comprehensive approach towards wastewater management, solid waste management, industrial pollution and river front development. In this CSIR-CLRI would be working with the leather industries in Jajmau area, where the CETP in Jajmau would be upgraded along with technology support for the industries in setting up primary treatment facilities.

**Down Sized Technologies for Grassroots**

Leather links rural farmer with global fashion market in India. About 2.5 million people are employed and >60% of leather produced is exported. Leather is a case of rural production for global consumption. CLRI is the global leader in leather research. Leather Technology mission and Human Resource Development Mission implemented by CLRI have played a key role in rural development through technologies. Down sizing of technologies for viable collection of fallen animals for a capacity of 3-4 animal/day and with tools for making the process of flaying clean and defect free, Increasing the productivity of village tanning process through saving in time (from 35 days to 15 days), increasing yield from 30% to 40%.

Innovating 250 new designs for ethnic (Kolhapuri) footwear and process standardization for product consistency are some of the important contributions of CLRI which have had a societal impact.

Empowering the SME sector in leather compliant to environmental regulations and requirements and restoring operations in closed tanneries in semi-urban and rural populations in Tamil Nadu has led to the saving of 2.5 lakh jobs.

**Leather Products: Ensuring Customer Satisfaction**

India foresees a need for growth of leather sector as it generates employment, has high domestic value addition and a large rural population devoted to ethnic product manufacture and is historically an area of strength in the export market. Industry requires an additional 2 billion square feet of leather in the next five years, which can only be met either through import of raw material or value enhancement to the available material through application of appropriate technologies. There is a need to address the technology challenges to sustainable development, such as fluctuations arising out of need for compliance to eco-norms, customer preferences to hi-tech materials & designs proactively. Institutional support from CLRI for the development of Indian leather industry is an advantage for India. In partnership with the footwear industry, the CSIR-CLRI has been able to capture the foot dimensions of children and based on statistical analysis identify 5 distinct size groups for children’s feet dimensions. Last parameters have been arrived and modelled. Using special eco-friendly leathers and designs suited for school children, the shoes have been designed to accommodate for natural foot growth and allow for natural foot function of the children. Fit and comfort analysis were studied using GAIT analysis system where the walking pattern/Gait of children wearing the shoe was carried out and pressure patterns studied to establish efficacy.

Footwear suitable for low risk diabetic patients based on aspects such as a specially derived angle of slant in the sole to give rocker effect essential for offloading pressure from the plantar surface of feet has been developed and is now commercially available as Diastep.

Specialized footwear such as Diastep have moved the Indian leather industry from developing footwear to providing footcare solutions.
India in International trade on footwear, leather and accessories

- Global exports of the sector have increased from US$ 149.2 billion in 2010 to approx. US$ 170 billion
- The industry focuses on earning foreign exchange as well as domestic market through trade expansion, leading to substantial employment, skill building, entrepreneurship and other socio-economic benefits
- The sector has set ambitious target based on past performances

A Vision for footwear, leather & accessories sector

- To understand the trend in various aspects connected to Leather, footwear, products, and leather chemicals;
- To analyze the trend and prognosticate the future trend
- The aspects to be studied and forecasted include
  - Raw material utilization level and pattern
  - Product mix and production pattern
  - Trend in process resources
  - Human resources
  - Automation and mechanization
  - Marketing, trade and policies
  - Environmental management
  - Technology trend and R&D directions
  - Socio-economic aspects

Institutional competence to spearhead the vision 2035 group

Raw material utilization level and scheme
- Breeding for goat and sheep
- Better carcass management
- Underutilization of raw materials and the possible trend in better utilization
- Product mix from raw hides and skins – the possible trend

Product mix and production pattern
- Trend in the product mix (leather, footwear, goods, and chemicals) and production schemes

Material resources
- New polymeric composites
- Synthetic leather
- Accessories
- Specialty chemicals
- Machines and tools

Automation and Mechanization
- Mechanization and automation for leather and product sectors
- Tools
- Control systems
The Indian Leather 2010 was a Roadmap for the Sector. The current status and international stature of the sector is largely due to the roadmap

Marketing, trade and Government policies
- Consortium approach to meeting volume demands and marketing through international agencies
- Design development linked to marketing
- De-licensing for product sector

Environmental Management
- Options for managing wastes
- C2C philosophy
- Sustainability

Human resources
- Relevance of training
- Requirement of manpower for 2010 predicted
- Restructuring of training setup

Socio-economic aspects
- Improvement in socio-economic conditions of workforce
- Non-impairment of environment
- Ergonomics in product segments

Institutional competence in large surveys
- Capacity utilization and type of processing of raw material by tanning industry
- Standardization / demonstration of technologies for footwear artisans in Kolhapur region (2007-2012)
- Survey of livestock feed intake, milk production and estimation of methane production (2008-2009)
- Nationwide survey of leather product units (1996-97)
- Capacity building for industrial pollution management in West Bengal (2012-13)
- 10th and 11th Plan base document for the leather sector
- Technology and empowerment – sociological study of women in Indian leather, footwear industry
- Fashion forecasting – season wise

Linkages in National and Global platforms
- Organized the International Union of Leather Technologists and Chemists Societies (IULTCS) congresses in 1999 and 2017 with over 18 countries participation
- Have carried out benchmarking and capacity upgradation programs in Ethiopia
- Has enabled leather education, skilling and technology transfer in over 15 countries
- Has working relationships with all the institutions and trade bodies associated with leather
- Leather Research Industry Get-together organized by the institute is a joint activity by more than 18 stakeholder organizations/associations
- Carries out skill development activities through organizations such as NSFDC, LIDCAP etc. and NGOs

FORECASTING

Methodology for forecasting – prerequisite survey
- Through its economic and statistical research group under the Planning Division CSIR-CLRI by employing state of art scientific tools and techniques would carry out field surveys, data collection, data analysis and forecasting in the areas of
  - Raw material and leather availability
  - Industry cluster, export and domestic product units
  - Artisanal clusters and capacity building
  - Domestic and international market for Indian leather
  - HR Needs
  - State of art ICT tools would be employed with a target of 90% accuracy level

Areas of forecasting
- Structure of industry
- Marketing
- Materials
- Human Resources
- Socio-economics
- Technology
  - For environmental management
  - For sustainability – Economic, Energy, Societal
  - Productivity improvement

Approach to forecasting
- Chosen group of individuals, industry leaders, policy makers, scientists and relevant global players who responded to the survey would form the think tank for the forecasting
- The think tank for each area would comprise of 5 members, a chairman and a convener
- Participating members while discussing amongst themselves would also derive appropriate conclusions from the survey and suggest policies, strategies and action plans
- Through a series of country level workshops, interaction with peer groups from India and abroad the Export and Domestic Market Targets for the sector in 2035 would be set

The committee would also lay down its recommendations for achieving these targets
FORECAST TRENDS WINTER 19 | 20

COURTESY: Mrs Marga Indra Heide, FASHION TREND POOL, Germany
www.fashion-trend-pool.com

FREE STYLE

COLOURS | MATERIALS
FORMAL LOUNGE
FANCY CULTURE

COLOURS  |  MATERIALS
Applications for India Design Mark 2019 are now open

As designers if you have self-initiated products that are manufactured in small quantities or limited editions, then you can apply for I-Mark 2019 at a token fee of Rs. 500 for Stage 1 and Rs. 1000 for Stage 2. Independent designers, design studios, handicraft designers, makers, design publishers and digital designers, can all apply.

India Design Mark is a design standard, a symbol, which recognizes good design. India Design Mark symbolizes excellence in form, function, quality, safety, sustainability and innovation and communicates that the product is usable, durable, aesthetically appealing & socially responsible. Detailed categories, application process, judging criteria and other details are available on www.indiadesignmark.in.

Since inception in 2012, 380 products have received this prestigious mark. The mark is being used by the recipients in a wide range of ways, such as advertisements, catalogs, product packaging, digital campaigns, annual reports and other mediums.

The I Mark winning products are eligible to apply directly at the second stage of G Mark (Good Design Award), Japan at reduced fees. This opens up a new avenue for I Mark recipients to get an international design certification.

India Design Council has initiated India Design Mark in cooperation with Japan Institute of Design Promotion (JDP). The cooperation is in the form of learning from the well-established Good Design Award system in Japan functioning since 1957. This award system was originally born in 1957. Approximately 37,000 Good Design Awards have been given in continuing in the last 50 years.

Last Date of Registration is 26th October 2018.
Students and staff members from Fashion Design Division of the University of Moratuwa have visited CSIR-CLRI and interacted with the Scientists from SPDC-CLAD on 19.09.2018.

Dr. Nirmali De Silva, Course Director, Fashion Design Degree, University of Moratuwa, Sri Lanka with a delegation of Fashion Design Students and staff members have visited as part of a 20-members delegation to Visit India


Shri. S. Dinesh from Kalam Institute of Health Technology (KIHT), Visakhapatnam, Andhra Pradesh has visited on 19.09.2018 and had discussion with respect to technology transfer of healthcare innovations.


Dr. B.S. Jambagi, Managing Director, Karnataka Sheep and Wool Development Corporation Ltd, Bengaluru has visited on 19.09.2018 and had discussion with respect to establishment of Sheep and Goat Skin Processing Unit at Tumkur District.
INDIAN SHOE FEDERATION celebrated its 26th Anniversary on 14th September 2018

From being a mere resourcing partner to being able to cater to niche brands with the right kind of shoes, for the right market and the right season; members of the Indian Shoe Industry have travelled a long way!

Just like the saying goes “as comfortable as an old shoe”, we have chosen to remain in our comfort zone, said Mr KR Vijayan, President, ISF. However, we have many challenges ahead, particularly in meeting the changing demands of the market amidst intense competition. Branding and Design Marks become important in this context, he said.

Visit www.indianshoefederation.in for more details please.

INDIA DESIGN MARK & BRANDING were the two topics discussed at length on the occasion of the 26th Annual General Meeting of the Indian Shoe Federation held on 14th August 2018 at Hotel Radisson Blu, Chennai.

While Mr Hriddysh Deshpande, Consultant Advisor, India Design Council spoke on INDIA DESIGN MARK, Ms Vidya Venugopalan spoke on HOW TO BUILD BRANDS & EFFECTIVE COMMUNICATION.

Mr PR Aqeel Ahmed, Vice Chairman, Council for Leather Exports; Mr Habib Hussain, Chairman, Leather Sector Skill Council and Mr R Selvam, IAS, Executive Director, Council for Leather Exports were the other eminent speakers who dwelled upon the ‘FUTURE GROWTH OF THE INDIAN LEATHER INDUSTRY.’ Mr KR Vijayan, President, Indian Shoe Federation presented the Annual Report for the Year 2017-18. This day also marked the birthday of Mr Hriddysh Deshpande and ISF organized a beautiful cake.

CSIR-CLRI gearing up for the “Spring Summer 2020 season”

Ninteen Tanners have readied 528 leather/colour proposals for presentation at the forthcoming MODEUROP & FASHION TREND POOL Colour Meetings.

In picture: Dr P Saravanan, Cluster Chairman, Shoe & Product Design Centre examines the collection with his Team Members Mr D Suresh Kumar, Mr K Dayalan and Mr P Vinoth Kumar.
Conducting Assessment for Skill development course under NSFDC in RCED-Kanpur

‘Drawing and Painting’ competition for school children

As part of the 76th Foundation Day celebrations, CLRI organized a ‘Drawing and Painting’ competition on campus. Many young talents were being nurtured. 76th CSIR Foundation Day will be celebrated in CLRI on 27th September 2018.
An agreement was signed by CSIR-CLRI with Thanjavur Municipal Corporation, Govt. of Tamil Nadu on 07.09.2018 in connection with the project “Preparation of Prefeasibility report for erecting Bio-gas Bottling plant with special focus on bio-methane recovery from Municipality Solid waste”

Indo German project review meeting of RESERVES project and kickoff meeting of Pyrosol project were held at CLRI with German partners during 20th to 22nd Sep 2018.
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