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दि लेदर पोस्ट
The Leather Post

सीएसआईआर–केन्द्रीय चर्म अनुसंधान संस्थान
CSIR-Central Leather Research Institute

RISE CONCLAVE 2026

Director's Message

Greetings and Namaskar to the Stakeholders of the leather sector

Dr P Thanikaivelan
Director, CSIR-CLRI

लेदर पोस्ट के प्रिय पाठको,

"द लेदर पोस्ट" के फरवरी के इस एक्शन से भरे अंक के जरिए सीएसआईआर–सीएलआरआई की हाल की गतिविधियों और उपलब्धियों की मुख्य बातें साझा करना हमारे लिए गर्व की बात है। हमने कई बड़े कार्यक्रमों की सफलतापूर्वक मेजबानी की और उनमें हिस्सा लिया, जिनमें लेरिग कान्क्लैव 2026, राइज कान्क्लैव 2026, द लेदर फैशन शो 2026, और इंडिया इंटरनेशनल लेदर फेयर 2026 शामिल हैं; इन कार्यक्रमों ने उद्योग जगत के साथ हमारे मजबूत जुड़ाव को और भी पुख्ता किया है। इनमें से एक मुख्य आकर्षण था राइज कान्क्लैव 2026, जिसका आयोजन सीएसआईआर–एसईआरसी और सीएसआईआर–सीईसीआरसी के साथ मिलकर किया गया था।

इस कार्यक्रम की शोभा हमारे माननीय विज्ञान एवं प्रौद्योगिकी मंत्री डॉ. जितेंद्र सिंह जी और सीएसआईआर की महानिदेशक डॉ. एन. कलैसेल्वी ने बढ़ाई। यह कार्यक्रम नवाचार, संधारणीयता और उद्यमशीलता में सहयोग के लिए एक गतिशील मंच साबित हुआ, जिसने चर्म और अन्य क्षेत्रों के भविष्य को संवारने के लिए विभिन्न हितधारकों को एक साथ लाने का काम किया। इसके अलावा, हमने राष्ट्रीय विज्ञान दिवस मनाया, राष्ट्रीय तमिल विज्ञान कांग्रेस 2026 में हिस्सा लिया, और अंतरराष्ट्रीय मातृभाषा दिवस 2026 को भी विशेष रूप से मनायाय इन सभी आयोजनों के माध्यम से हमने विज्ञान के प्रचार–प्रसार और सांस्कृतिक समावेशिता के प्रति अपनी प्रतिबद्धता को दोहराया। ये सभी पहलें मिलकर अनुसंधान, नवाचार और सामाजिक जुड़ाव के क्षेत्र में सीएसआईआर–सीएलआरआई के निरंतर नेतृत्व को रेखांकित करती हैं।

Greetings!

It is a privilege to share key highlights of CSIR-CLRI's recent engagements and achievements through the action-packed February issue of The Leather Post. We successfully hosted and participated in major events, including LERIG Conclave 2026, RISE Conclave 2026, The Leather Fashion Show 2026, and the India International Leather Fair (IILF) 2026, reinforcing our strong industry connect. A major highlight was the RISE Conclave 2026, jointly organized with CSIR-SERC and CSIR-CECRI and graced by the presence of our Hon'ble Minister for S&T, Dr. Jitendra Singh, and Dr. N. Kalaiselvi, Director General, CSIR, which served as a dynamic platform for innovation, sustainability, and entrepreneurial collaboration, bringing together diverse stakeholders to shape the future of the leather and other sectors. We also celebrated National Science Day, participated in the National Tamil Science Congress 2026, and marked International Mother Language Day 2026, emphasizing our commitment to science outreach and cultural inclusivity. Together, these initiatives underline CSIR-CLRI's continued leadership in research, innovation, and societal engagement.

Happy Reading!

Aniline & Leather – Déjà vu? Scientists at CSIR-CLRI say "Jamais vu"

"*Aniline leather*" is a far more common parlance in the leather world. Classically sourced from high-quality full-grain hide leathers, aniline leathers are the connoisseurs' choice! They are also mentioned as '*dipped leathers*' or simply '*anilines*' since they are immersion-dyed in aniline dyes. Aniline dyes are the first ever artificial colorants derived in 1856 from Aniline (C6H5NH2), a colourless, oily amine obtained from coal tar. Aniline is either oxidized or diazotized & coupled to get aniline dyes. Aniline leather radiates the true character of leather with its defects, unlike the semi-aniline leathers, where camouflaging the defects is the motto! Perhaps, this naturality sets aniline leather apart from the rest, simultaneously explaining its nomenclature.

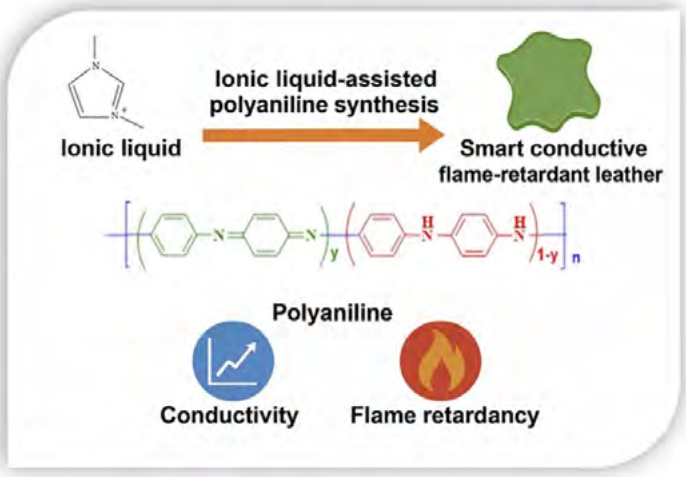
Extending the above chemical and commercial prior art on aniline, scientists at CSIR-CLRI attempt a smart twinning of electrical conductivity and flame retardance in leathers! They use aniline as a precursor in this pursuit! Déjà vu? Yes, aniline once again, but in a different form – as polyaniline this time! The scientists have traversed from the known to the unknown in this pitstop of the smart leather series from CSIR-CLRI! From Déjà vu to Jamais vu! From "*already seen*" to "*never seen*"! Polyaniline turns out to be that acrobatic candidate bending two contrasting properties: electrical conductivity and flame retardance, from the characteristics-point of view of leathers. Whereas it is only intuitive to enhance the fire retardance of leather, which is a naturally gifted fire retardant by itself, creating electrical conductivity on the surface of an innately superior insulator like leather is nearly impossible and stunningly counter-intuitive! Imidazolium-based ionic liquids are supported in this effort by modulating the size of polyaniline, in turn improving its penetration and distribution within the leather matrix. A 389.4 MΩ to 1.5 MΩ reduction in electrical resistance of leather was achieved after three cycles of in-situ polymerization of aniline. Owing to its high nitrogen content and organic core, poly-anilined leather achieved an 82.8 % reduction in flammability. Possibility of applications of the above "*usable, useful & responsible*" innovation in wearable electronics, strategic sectors, automotive interiors & protective gear is simply swashbuckling! Thus, the above work stamps the mantra: "Do more with less for more"!

Leather once again proved to be a gifted biopolymer that can cradle smart materials with ease, in this case, polyaniline, to get smarter and thus achieve higher order unit value realization, and polymeric harmony & leather justice can be in synchrony! As we recognize a complex path to leather justice, a quote by Ilya Prigogine, the 1977 Chemistry Nobel laureate, says: "*When a complex system is far from equilibrium, small islands of coherence in a sea of chaos have the capacity to shift the entire system to a higher order*"! Well, polyaniline is one such island of coherence in a sea of hurdles for leather justice!

Renganath Rao Ramesh, Narmatha Nataraj, Nishad Fathima Nishter, Raghava Rao Jonnalagadda

Fabrication of electrically conductive and flame-retardant leather through ionic liquid assisted in-situ polymerization of aniline

Synthetic Metals, Volume 316, January 2026, 118009; https://doi.org/10.1016/j.synthmet.2025.118009



Multifunctional Collagen-Like Protein: A Potential Gene Therapy Vehicle for Biomedical Applications

Gene therapy is a procedure of using a gene(s) to treat, prevent, or cure a disease or medical disorder. In most cases, gene therapy works by adding new copies of the gene by replacing the defective or missing gene. Gene therapy offers a promising scope for treating genetic diseases (e.g., hemophilia and sickle cell disease) and acquired disorders (e.g., leukemia).

Gene delivery, a critical step in gene therapy, involves transferring therapeutic genes into target cells to treat various diseases. Gene delivery methods can be mechanical (e.g., microinjection, electroporation), chemical (e.g., lipid or nanoparticle carriers), or biological (e.g., viral or bacterial vectors). Collagen, a key component of the extracellular matrix (ECM), plays an important role in cellular adhesion and signaling processes underlying development, tissue repair/ regeneration. Collagen is both a bioactive, structural scaffold and a reservoir for retention and delivery of signaling molecules or genes.

Researchers at CSIR-CLRI have investigated the potential of collagen as a gene delivery vehicle. While natural collagens play a crucial role in tissue regeneration, their high molecular weight limits their efficient cellular uptake. To overcome this, researchers have engineered a collagen-like protein (CLP) containing Glycine-X-Y repeats that mimic type I collagen and retain its functional properties. Furthermore, mussel adhesive protein (MAP), which exhibits histone-like characteristics, can deliver foreign genetic material into mammalian cells. The fusion of CLP with MAP synergizes the ECM-binding of collagen with the cationic property of MAP, thereby enhancing gene delivery efficiency. Further, the recombinant fusion protein was successfully expressed in E. coli and was also purified.

The study's findings showed that the fusion protein exhibited strong DNA-binding ability, similar to MAP. It was also observed that the protein-DNA complex remained stable even in the presence of serum and DNase enzyme. The in vitro transfection studies carried out by researchers further substantiated the potential of CLP-MAP to deliver plasmid DNA in NIH-3T3 cells. These promising results indicate that the CLP-MAP fusion protein is effective at DNA binding and is biocompatible, making it a promising novel gene delivery system.

Gopalan Akilandeswari I Niraikulam Ayyadurai
Division of Biochemistry and Biotechnology,

Multifunctional Collagen-Like Protein as a Gene Therapy Vehicle for Biomedical Applications

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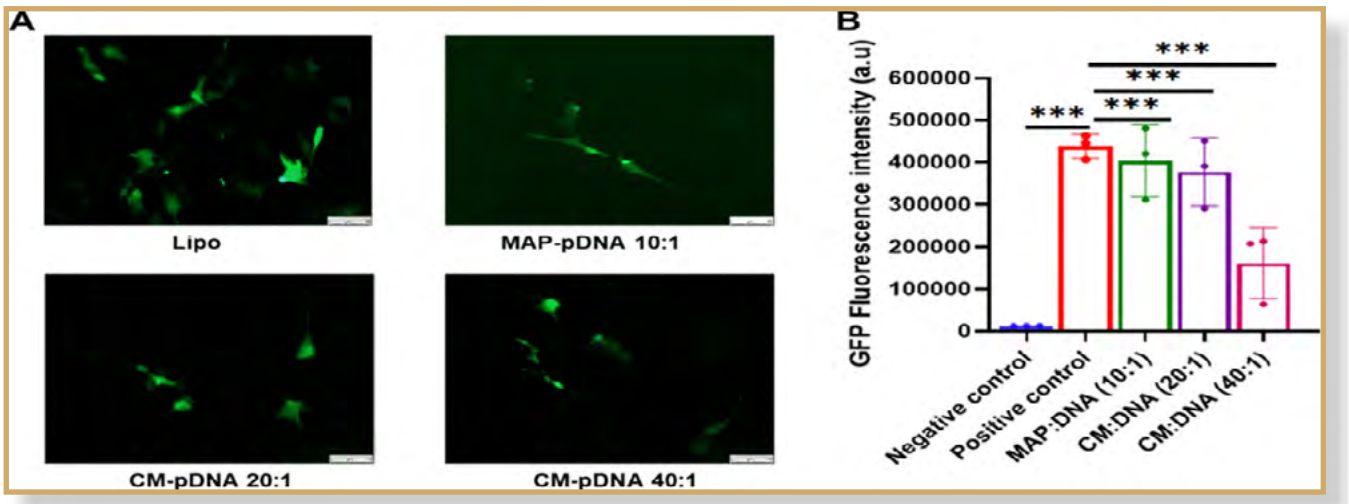


Publications from CSIR-CLRI

February 2026

1	Narayanan, K; Murugan, KS; Natarajan, TS, Silver nanoparticles integrated SnO2/g-C3N4 nanocomposite as highly sensitive electrochemical sensor for ascorbic acid, Journal of Industrial and Engineering Chemistry, FEB 25, 2026k 154, 643-656, 10.1016/j.jiec.2025.07.029
2	Rahaman, SN; Pranathy, K; Anandasadagopan, SK, Intra-Articular Injectable Chitosan-PVA Hydrogel Ingrained With Gallic Acid Loaded Mesoporous Silica Nanoparticles for Pain Relief and Cartilage Regeneration in Obese Osteoarthritic Rats, Advanced Therapeutics, FEB 15, 2026, 9 (2), 10.1002/adtp.202500293
3	Gunalan, S; Somarathinam, K; Kanagaraj, S; Jaimohan, SM; Kothandan, G, Intriguing the significance of hydrophobic groove by the inhibitory mechanism of mineralocorticoid receptor bound with spironolactone through mutations using long-range molecular dynamics simulations in conjunction with statistical analysis, Journal of Molecular Modeling, FEB 10, 2026, 32 (3), 10.1007/s00894-026-06639-1
4	Ilangovan, A; Kanchinadham, SBK, Valorization of banana leaf waste for cellulose nanofiber extraction: a sustainable approach for leather applications, Biomass Conversion and Biorefinery, FEB, 2026, 16 (3), 10.1007/s13399-026-07069-y
5	Natarajan, P; Nadimuthu, V; Prabhakaran, A; Somasundaram, S, Liquid-phase catalytic oxidation of volatile organic compounds using molybdenum incorporated cobalt-cerium mixed metal oxide catalysts, Journal of Water Process Engineering, FEB, 2026, 82, 10.1016/j.jwpe.2026.109505

64th Meeting of the Management Council of CSIR-CLRI

The reconstituted Management Council (MC) of CSIR-CLRI held its 64th MC meeting 26 February 2025 at the Director's Annexe, CSIR-CLRI, Chennai. Dr P Thanikaivelan, Chairman and Director CSIR-CLRI welcomed Dr Srinivasa Reddy, Director CSIR-IICT, and all other members.

During the meeting, Dr Srinivasa Reddy shared his insights on various activities such as evaluation and licensing of the knowledge base, testing charges, Engineering Services, and other activities of the institute.

Shri KM Sridhar, Sr.CoA & Member Convenor, presented the agenda of the meeting recorded the proceedings.

LERIG CONCLAVE 2026

SCALE

Sustainability and Circular Approaches for the Leather Economy

The 59th Edition of the Leather Research Industry Government (LERIG) Conclave was organised by CSIR-CLRI in association with LERIG Trust and stakeholders of the Leather Sector on 2 February 2026 at the Chennai Trade Centre, Nandambakkam, Chennai. The Conclave brought together policymakers, industry leaders, exporters, MSMEs, certification bodies, international experts, designers, technologists, researchers, and academicians. During the event, informative technical sessions were held on the theme – ***"Sustainability and Circular Approaches for the Leather Economy (SCALE)".***

The objective of organising this annual Conclave was to deliberate on practical, scalable, and commercially viable strategies to strengthen the sustainability, circularity, and global competitiveness of the Indian leather industry. The theme "*SCALE*" was conceptualized in response to growing industry concerns regarding:

- waste management,
- environmental compliance,
- traceability requirements,
- carbon footprint reduction, and
- evolving global trade expectations.

Director, CSIR–CLRI spoke about the significance of organising the annual LERIG Conclave. This year's theme emphasizes the indispensability of sustainability

and circularity in the leather and leather chemicals & products industries. He also stressed that sustainability in the leather sector must move beyond compliance-driven approaches and evolve into innovation-driven transformation. He highlighted CSIR–CLRI's continued efforts to develop technologies for converting solid waste into value-added products, promote water-efficient processing systems, strengthen environmental management practices, and enable circular economy models across the leather value chain.

In his presidential address, Padma Shri M Rafeeque Ahmed, President, All India Skin & Hide Tanners & Merchants Association (AISHTMA) and Chairperson, Farida Group stressed the need for transparency in processing methods, effluent treatment standards, carbon emissions management, and full value-chain traceability. He urged the industry to adopt the guiding philosophy: "*Make it last; keep it longer; and waste less*," especially in view of expanding trade with the European Union, where sustainability documentation and proof-based claims are becoming mandatory.

Shri Aqeel Panaruna, Chairman, Florence Shoe Company Pvt Ltd, in his address, emphasized that Product sustainability practices and global credibility are crucial for global acceptance. He stated that CSIR-CLRI is an asset for the leather sector, playing a pivotal role in translating laboratory research into pilot-scale and industry-ready technologies. He stressed that MSME's role is very critical in strengthening India's leather economy, and the support of CSIR-CLRI is required to nurture MSMEs through technology adoption and innovation-driven growth.

Shri M Addul Wahab, Regional Chairman, South - CLE and Managing Director, KH Exports India Pvt Ltd, expressed that transparency across the product value chain has been considered a defining element of product sustainability emphasizing traceability from farm to finished product. He appreciated CSIR-CLRI's technology on the development of blended yarns using leather waste combined with natural and man-made fibres. He noted that the technology license was secured by M/s. K H Exports India Private Limited and found it to be a significant technological advancement, promoting the circular economy by repurposing solid leather waste into value-added textile products.

As part of the inaugural proceedings, CSIR–CLRI transferred a process technology for the manufacture of leather for musical instruments to M/s Infinite – Art to Heart, Chennai, reinforcing its commitment to translational research. The latest edition of CSIR-CLRI Technology Compendium was released by Padma Shri M Rafeeque Ahmed, and the first copy was received by Shri Aqeel Panaruna. Dr P Shanmugam, Scientist G, CSIR-CLRI proposed the vote of thanks.

Technology Talks Session I:

The Technology Talks session focused on translating sustainability into operational reality. Shri Rafiq, CEO and Managing Director of KKSK International, presented an industry perspective on clean technology pathways. He traced the transformation of the Tamil Nadu leather sector from pollution-intensive operations to globally recognized environmental compliance, particularly through early adoption of Zero Liquid Discharge (ZLD) systems. He shared practical data demonstrating significant reductions in water consumption—down to nearly two litres per square foot of leather processed—thereby countering common misconceptions about excessive water usage in leather production. He also elaborated on the long-standing implementation of the "*Lysotec*" lime-liquor recycling system, which has been operational for nearly three decades, contributing to reduced pollution loads and improved process efficiency. Emphasizing worker safety, he urged strict adherence to sulfide oxidation protocols to prevent hazardous hydrogen sulfide emissions.

Dr. T. Shakila Shobana, Scientist E, CSIR–CLRI, presented a comprehensive overview of solid waste utilization technologies under "*Waste to Wealth*". She detailed viable technological pathways for converting raw trimmings into collagen hydrolysate, hair waste into keratin-based biofertilizers, chrome shavings into regenerated biomaterials with chromium recovery, and buffing dust into reconstituted leather composites.

Prof. S S Dutta Memorial Lecture

The 7th Prof. S S Dutta Memorial Lecture, organized by the Southern Regional Committee of the Indian Leather Technologists Association (ILTA), was delivered by Shri Aqeel Panaruna, Chairman, Florence Shoe Company Pvt. Ltd. In his talk, he spoke about the implications of emerging global tariff measures on Indian leather exports. The lecture analysed reciprocal tariff structures, global trade disruptions, and the need for market diversification toward Europe, the United Kingdom, Japan, and Australia. He highlighted the importance of Free Trade Agreements and adaptive business strategies in navigating volatile global trade conditions.

Design Workshop:

A Design Workshop on *"India's Design Capabilities: Present and Future - A Vital Growth Engine*" was organized as part of the "*Development of Design Studio for Footwear and Leather Sector*" under the sub-scheme of Indian Footwear and Leather Development Program (IFLDP). Shri Md Sadiq, Scientist (Retd.), CSIR-CLRI, Dr. Kaustav Sengupta, Associate Professor, NIFT Chennai, Mr. Walter Bettini, Designer - Footwear, Bettini & Penazzato SNC., Italy, Ms. Elissa Bloom, Designer - Goods, USA and Shri Suresh J, Head, Product Development, Calsea Footwear Pvt Ltd spoke on the theme. In this workshop, color cognition, consumer psychology, indigenous design intellectual property, and the growing importance of storytelling in product branding were discussed. The integration of creativity with manufacturing practicality, supported by AI-driven sampling and forecasting tools, was highlighted as essential for future competitiveness.

During the workshop, the book titled "Footwear Quality Manual" authored by Shri Ramesh Subramaniam and co-authored by Dr. R. Mohan, Dr. Swarna V. Kanth, Shri R. Sathiyaraj, with contributions from Dr. D. Suresh Kumar, was released by Dr. P. Thanikaivelan, Director, CSIR–CLRI. The book, provides a structured framework for strengthening quality assurance practices in footwear manufacturing. The panel discussion on "*Roadmap for Sustainable Development of Leather Sector"* was moderated by Dr. P Saravanan, Scientist G, CSIR-CLRI. The panellists for the session were Shri P Rajasekaran, Business Head- Finished Leather, TATA International Ltd, Shri C Anbu Malar, Vice-Chairman and Director, P A Footwear Pvt. Ltd, Ms Vanessa Podmore, Executive Director, Leather Working Group (LWG), Mr. Jon Loxston, Managing Director, LWG Assurance Services, Mr Ato Wondu Legesse Gizaw, Former National Project Coordinator, UNIDO, Ethiopia and Ms. Sonia Zapata, Head of Technology, Innovation and Product Management Leather Finishing, STAHL.

It was emphasized that sustainability must be viewed as a strategic enabler rather than a compliance obligation. Key themes included renewable energy adoption, chrome and protein recovery, cluster-level environmental infrastructure, digital product passports, continuous monitoring systems, safer chemical formulations, and collaborative action across the value chain. The panel reached a consensus that waste streams should be repositioned as resource streams and that circular economy implementation demands coordinated engagement among research institutions, industry stakeholders, policymakers, and global partners for achieving meaningful and lasting transformation.

Showcased CSIR-CLRI latest innovations

A vibrant start at IILF2026, CSIR-Central Leather Research Institute showcased its latest innovations with great enthusiasm from industry leaders and visitors on 4th Feb 2026.

Leather Fashion Show 2026

CSIR-CLRI, under the aegis of the Department for Promotion of Industry and Internal Trade (DPIIT) is upgrading its Design and Fashion Studio and setting-up a ***Centre of Excellence for Leather, Footwear & Accessories*** , to augment fashion forecasting and gain design intelligence in the country. As part of this project, CSIR-CLRI has presented a sequence on the theme "*Neo-Hybrid Realities*" at the Leather Fashion Show held on 1 February 2026 during the LEATHER WEEK 2026, exhibiting a world where sustainability, time, culture, and emotion merge.

Inspired by the Spring Summer 2027 trend forecasting, this collection transforms fashion into an experience that blends technology with nature, memory with innovation, and emotion with motion. The theme explores how the digital world reshapes human expression, turning glitches into patterns, data into textures, and sustainability into beauty. This collection is a visual metaphor for how we exist between screens and skin, heritage and holograms. The show highlighted seasonal colours, alchemy of tradition and science, where ancient techniques are softened into a flexible, futuristic and sustainable translucent skin.

India International Leather Fair (IILF2026)

CSIR-CLRI participated in the India International Leather Fair (IILF) 2026 organized during 1 – 3 February 2026 with a well-curated, and visually engaging stall, showcasing its diverse research capabilities and industry-oriented innovations. Amb. Jawed Ashraf, IFS (Retd.) Chairman, Indian Trade Promotion Organisation and Shri. R.Selvam, IAS, Executive Director, Council of Leather Exporters visited the Stall.

The exhibit featured a wide range of technologies and prototypes, including sustainable tanning agents, specialty chemicals for upholstery and automotive leathers, eco-friendly finishing formulations, and solid waste management solutions such as recovery of value-added materials from tannery waste streams, highlighting CLRI's commitment to environmental stewardship and resource efficiency.

A key highlight was the Indian Footwear Sizing System (BHA), developed through a nationwide survey of foot dimensions. This initiative drew significant interest from footwear manufacturers and designers, as it provides an indigenous, scientifically validated sizing standard tailored for the Indian population.

The fashion and product development section showcased innovative leather garments, accessories, colour cards, and trend forecasts, demonstrating the seamless integration of science with design and

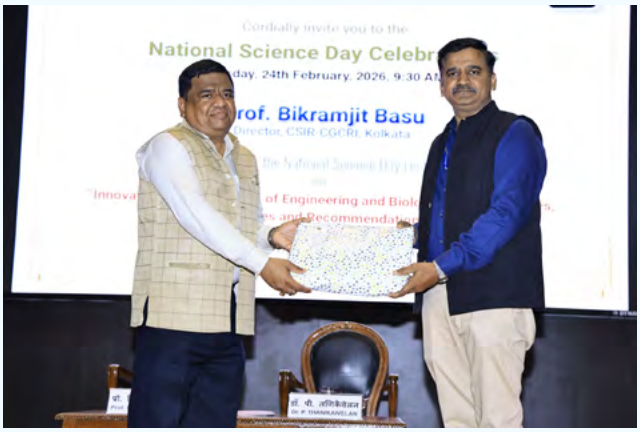
market relevance. A standout feature was the display of transparent leathers developed by CSIR-CLRI, which were creatively employed in making unique garments and leather goods, captivating visitors with their aesthetic appeal and technical innovation.

Another major attraction was the CSIR-CLRI ECOMARK, a proposed eco-label for finished leather and leather products. The ECOMARK initiative, with its three-tier recognition system (Platinum, Gold, and Silver), aims to benchmark Indian leather against stringent environmental, physical, and chemical compliance standards, helping manufacturers demonstrate credible sustainability credentials to global buyers. The display attracted significant attention from exporters, tanneries, and brand representatives keen on adopting eco-friendly practices.

The stall witnessed active engagement from industry representatives, entrepreneurs, researchers, and visitors, facilitating meaningful discussions on technology transfer, consultancy, collaborative research, and start-up support. The CSIR–CLRI stall at IILF 2026 effectively highlighted the institute's multifaceted contributions to innovation, sustainability, skill development, and industrial growth in the leather ecosystem a wide range of technologies and prototypes, including sustainable tanning agents, specialty chemicals for upholstery and automotive leathers, eco-friendly finishing formulations, and solid waste management solutions such as recovery of value-added materials from tannery waste streams, highlighting CLRI's commitment to environmental stewardship and resource efficiency.

National SCIENCE Day 2026

CSIR-CLRI celebrated National Science Day on 24 February, 2026. On the occasion, Prof. Bikramjit Basu, Director of CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata, delivered National Science Day Lecture on the topic *"Innovation at the Interface of Engineering and Biology: Success Stories, Challenges and Recommendations*." Scientists, staff and students participated in the program.



CSIR-CLRI at National Tamil Science Congress 2026

CSIR-CLRI participated in the National Tamil Science Conference (NTSC 2026) organized during 20 - 21 February 2026 at CSIR-Structural Engineering Research Centre (CSIR-SERC), Chennai. The event was jointly organised by Arivial Sangam, Tamil Nadu, and CSIR-SERC, Chennai. The theme of the conference is "*Sustainable Development in Science and Technology, and it is a unique platform dedicated to promoting science, technology, and innovation through the Tamil language*".

The objective of this event was to bring together eminent scientists, academicians, industrial leaders, policymakers, and students to deliberate on the latest advancements in various scientific domains.

Further, it aims to bridge traditional knowledge systems with modern scientific thought, highlighting the importance of Tamil as a medium for communicating science. Dr. P. Thanikaivelan, Director, CSIR-CLRI, Dr. N. Anandavalli, Director, CSIR-SERC, and Dr. B.Chandrasekaran, Distinguished Scientist at CSIR-CLRI visited the CSIR-CLRI stall at the event

International Mother Language Day 2026 celebrated in CSIR-CLRI

The International Mother Language Day was celebrated at CSIR-CLRI on 20 February 2026. Shri K. M. Sridhar, Sr. CoA, CSIR-CLRI welcome the gathering. Dr. P. Thanikaivelan, Director, CSIR-CLRI inspired the audience with insights on the importance of preserving and promoting our mother tongues. Dr. P. Saravanan delivered a special address, emphasizing the role of language in shaping identity and knowledge. The event featured engaging presentations by research scholars, showcasing diverse linguistic perspectives and talents.

RISE Conclave 2026

Research, Industry, Startup and Entrepreneurship Conclave

A two-day Research – Industry – Startup – Entrepreneurship (RISE) Conclave 2026 organized by CSIR-SERC, CSIR-CLRI and CSIR-CECRI, was held during 14–15 February 2026 at the Chennai Trade Centre. The Conclave objective was to advance the ‘*‘Government’ and ‘Society*’ vision for grassroots innovation. Further, it seeks to integrate laboratory research with market needs, industry partnerships, and grassroots entrepreneurship. It also envisages powering India’s innovation future by bringing research institutions, industry leaders, academia, and young entrepreneurs on a common platform.

Addressing the Conclave, Dr Jitendra Singh, Union Minister of State (Independent Charge) for Science & Technology, Earth Sciences, emphasised that government employment alone cannot be the sole avenue of aspiration for India’s youth. He called for an Industry-driven StartUp model and a decisive shift in mindset towards innovation-led entrepreneurship and job creation.

The Minister described the city as a historic seat of learning and innovation, and mentioned that institutions like CSIR-CLRI have been icons of national pride since Independence. He said that CLRI products now enjoy a strong export presence and that CSIR laboratories have increasingly expanded beyond silos to integrate with national growth priorities. On startups, the Minister informed that while India had only about 350 recognized startups in 2014, the number has now crossed two lakhs, generating over 21 lakh jobs. Nearly 69 percent of beneficiaries under the Mudra scheme are women, and tens of thousands of startups are women-led. He further asserted that India’s Global Innovation Index ranking has risen from 81 to 38, and the country now ranks sixth globally in patent filings, with a majority of patents being filed by Indian residents working from within the country.

Delivering the Presidential Address, N. Kalaiselvi, Director General of Council of Scientific and Industrial Research (CSIR) and Secretary, DSIR, emphasized the importance of building integrated innovation ecosystems. She highlighted that collaborative research and cross-sector partnerships are vital to strengthening India's scientific leadership and technological self-reliance.

In his welcome address, Dr. P. Thanikaivelan, Director of CSIR-CLRI, underscored the transformative potential of stronger academia–industry linkages. He reiterated that national progress depends on seamless collaboration between knowledge creators and technology adopters. Dr P Thanikaivelan, also stated that many of the over 100 exhibitors participating in the event are the beneficiaries of technologies from CSIR, DST, DBT and MoES.

Providing an overview of the conclave, Dr.(Smt.) N. Anandavalli, Director of CSIR-Structural Engineering Research Centre (CSIR-SERC) and Coordinating Director, CSIR Madras Complex, highlighted the event's focused mission: to build enduring partnerships that convert laboratory research into industry-ready solutions.

Dr K Ramesha, Director, CSIR-CECRI, outlined a proposed model wherein CSIR will serve as a technology provider, while universities handle incubation and mentoring, strengthening the innovation-to-market pipeline.

A major highlight of the conclave was the vibrant Startup Expo, which witnessed participation from over 140 startups and MSMEs built around technologies developed at CSIR-SERC, CSIR-CLRI and CSIR-CECRI. The expo showcased cutting-edge solutions spanning multiple sectors, reflecting the growing strength of India's deep-tech startup ecosystem.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VIT
CHENNAI
UG ENGINEERING PROGRAMMES


RISE
Conclave 2026
Research, Industry, Startup and Entrepreneurship Conclave 2026
14-15 February | Chennai Trade Centre
Inauguration by


Conclave 2026
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CSIR-CLRI at National Quality Conclave

CSIR-CLRI participated in the first National Quality Conclave Series 1, organized by Quality Council of India at Bharat Mandapam, New Delhi during 22 -23 February, 2026. and the team CSIR-CLRI provided valuable inputs towards developing a quality roadmap for the Indian leather and Footwear sector focusing on Viksit_Bharat_2047.

In the Conclave Dr P Thanikaivelan, Director, CSIR-CLRI delivered a thematic lecture focused on "*Interventions for helping industry move to advanced quality from source to shop*" emphasizing the need for quality in leather industry. The conclave facilitated networking with the industries, councils, and associations relevant to the Leather and Footwear sector.

CSIR-CLRI at SSBMT (Indoor) Final Tournament

CSIR-CLRI participated at the Shanti Swarup Bhatnagar Memorial Tournament (SSBMT) (Indoor) Final Tournament held at CSIR-NEIST, Jorhat, Assam, during 09–13 February 2026. Mr. Chandran, PTO (CLRI staff member) and Mr. Hussain Kotawala (student) represented CSIR-at this sports event. The CLRI team secured the Runner-up position in the Table Tennis Team event.

Director, Staff members, and CLRI Staff Club extend their heartfelt congratulations to the team for this remarkable achievement.

National Training Program on Women in Leadership and Technology Advancement

The Entrepreneurship Development Institute of India (EDII), Ahmedabad, organized a DST-sponsored National Training Programme on Women in Leadership and Technology Advancement from 2 – 6 February, 2026. About 26 women from across India participated in the traing programme. Dr. Bindia Sahu, Scientist E, and Dr. Punitha V, Scientist D, from CSIR-CLRI participated. The program aimed to empower women scientists and technologists in government departments and PSUs by enhancing leadership skills, building confidence, and enabling impactful change. The training emphasized gender sensitivity, budgeting, and equality in leadership within national and international programs, fostering inclusive governance. Promoting leadership equality drives major initiatives and exemplifies strategic leadership, enabling transformative change and personal growth, contributing to a more equitable global leadership landscape.

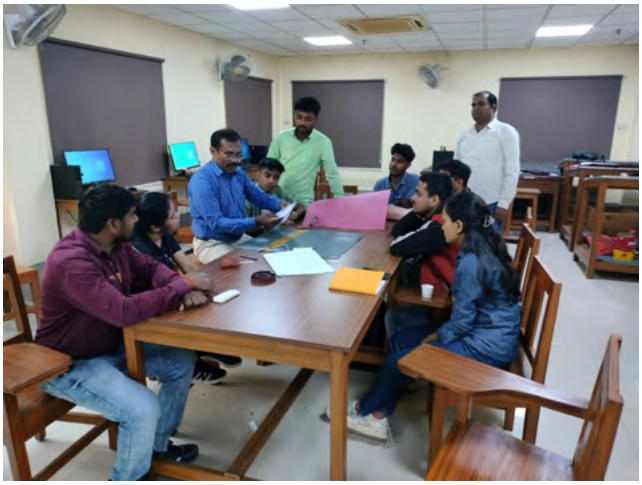
Training program on "CAD for Leather Products"

at the Skill Development Centre, Calcutta Leather Complex

The CLRI Regional Centre, Kolkata has successfully launched a 5 day training program on "*CAD for Leather Products*" at the Skill Development Centre, Calcutta Leather Complex during 23 - 27 February 2026. This program was designed to empower participants with advanced skills in computer aided design, enabling innovation and precision in leather product development. The program is sponsored by the MSME&T Department, Government of West Bengal. Over 13 trainees participated in the training program and gained hands on knowledge.

The following topics were covered in the training program:

- Introduction to CAD systems
- Manual Pattern Design
- Pattern Digitization / Creation / Nesting
- Consumption Calculation & Reports
- Pattern Conversion Tools



National Science Day

celebrations at CLRI Regional Centre, Kolkata

To mark the occasion of National Science Day, a student interaction activity was organized on 26 February 2026 at the CLRI Regional Centre, Kolkata

The program was organised to promote scientific awareness and to encourage the spirit of innovation among students. B. Tech students of the Institute of management participated in the event. Scientists and research scholars from the Regional Centre, Kolkata, interacted with the participants and shared insights into recent developments in leather technology, sustainable practices, and research opportunities in the field. The session emphasized the vital role of science and technology in industrial growth and environmental sustainability.

Students actively participated in discussions, raised queries regarding research careers, and explored opportunities for internships and higher studies. The interaction effectively bridged the gap between academic learning and practical research applications.

Workshop on "Leather Handbag Design"

at CLRI Regional Centre, Kanpur

CSIR-CLRI conducted a workshop on Leather '*Handbag Design'* on 25 February 2026 at Kanpur for working professionals of the leather goods industry in Kanpur-Unnao leather cluster. The design workshop was conducted by Shri.K.Karthikeyan, Scientist – E, CSIR-CLRI.

The key highlights of the Design Workshop 2026 are:

- Trends Forecasting for global markets
- AI applications in design innovation
- Digital prototyping for faster sample development
- Sustainable approaches with digital intelligence

At the workshop a total 28 working professionals from the industry participated. Faculty from various institutes also participated in the workshop.

Kunthavai Naacchiyaar Government Arts College for Women Visit CSIR-CLRI

About 25 postgraduate Chemistry students from the Department of Chemistry, Kunthavai Naacchiyaar Government Arts College for Women, Thanjavur District, Tamil Nadu, along with three faculty members, visited CSIR–CLRI, Chennai on 3 February 2026. During the visit, scientists and staff explained various research areas, including leather processing, biochemical and bioinformatics applications, and collagen-related sciences. They also demonstrated the available instruments and discussed skill development and training opportunities. The students found the visit highly informative and felt that it would significantly enhance their academic and professional development.

Khalsa College of Veterinary and Animal Sciences, Amritsar Visit CLRI Regional Centre, Jalandhar

About 105 Students and along with faculty members from Khalsa College of Veterinary and Animal Sciences, Amritsar visited the CSIR-CLRI Regional Centre, Jalandhar on 19 February 2026. Scientists and technical staff delivered lectures on leather processing and products, followed by demonstrations of the Centre's facilities, including chemical and physical testing laboratories, the pilot tannery, and goods and garment training units. The students have also been arranged an industry visit to understand leather processing from raw material to finished products.

Kamban College of Arts and Science for Women, Tiruvannamalai Visit CSIR-CLRI

On 20 February 2026, 53 final-year UG students and 12 PG Microbiology students, accompanied by four staff members from the Department of Microbiology, Kamban College of Arts and Science for Women, Tiruvannamalai, Tamil Nadu, visited CSIR- CLRI, Chennai.
During the visit, scientists and technical staff provided detailed insights into the Institute's key research areas, including leather processing technologies, microbiology applications, healthcare-related research, environmental microbiology, wastewater treatment methods, and pyrolysis plant operations. They also highlighted various skill development, training, and career opportunities available for students.

Sri Sai Ram Institute of Technology, Kanchipuram District, Visit CSIR-CLRI

As part of the National Science Day celebration,28 students from the B.E. Mechanical Engineering program, and two faculty members from Sri Sai Ram Institute of Technology, Kanchipuram District, visited CSIR–CLRI on 24 February 2026. During the visit, the scientists provided detailed explanations of the leather processing steps and demonstrated the various instruments and facilities involved. The participants also explored the pilot plant facilities, gaining valuable insights into practical research and technological applications.

Virendra Swaroop Group of Institutions (VSGoI), Kanpur Visit CLRI Regional Centre, Kanpur

On the occasion of National Science Day 2026, the CSIR-CLRI Regional Centre, Kanpur organized an educational visit for students from the Virendra Swaroop Group of Institutions (VSGoI), Kanpur, on 24 February 2026. A group of 50 B.Tech students, accompanied by their faculty members, visited the CLRI CATERS Testing Laboratory located at the KLC Complex, Banthar, Unnao. The visit was aimed at fostering scientific curiosity and providing practical exposure to industrial processes in the leather sector. During the program, the Scientific and Technical staff of CSIR-CLRI briefed the participants on leather processing techniques/ workflows, machinery employed in leather processing operations and the various mechanical and chemical testing protocols for leather, leather products, wastewater etc.,

Loyola College, Vettavalam, Tiruvannamalai District, Visit CSIR-CLRI

On 26 February 2026, the Department of Commerce & CA, Loyola College, Vettavalam, Tiruvannamalai District, visited CSIR–Central Leather Research Institute (CSIR-CLRI) for an educational tour, where around 30 B.Com students, along with two faculty members, participated. During the visit, the scientists explained various skill development and training opportunities in the leather sector, computer applications related to leather and allied career prospects, and demonstrated the pyrolysis plant to show how waste is converted into useful products

AWARDS & RECOGNITION

Mrs. B Kanimozhi, Wins Award at Quality Management Conference

Mrs. B Kanimozhi, Senior Technical Officer, PPME Department, CSIR-CLRI participated in Q-Quest 2026, an annual conference organized by AU TVS Centre for Quality Management, Anna University, on 10 February 2026. She won prizes in the following events: Quality Improvement Practice Competition - Gold Award and 5 'S' Competition Gold Award.

AU TVS CENTRE FOR QUALITY MANAGEMENT
ANNA UNIVERSITY

Q'QUEST 2026

CERTIFICATE OF APPRECIATION

This is to certify that Mr./Ms. B. KANIMOZHI from CSIR - CLRI is the PLATINUM / GOLD / SILVER / BRONZE AWARD WINNER of the 5 'S' COMPETITION held on 10th February 2026 in the 27th Annual Conference on Quality Management, Q'Quest 2026.

Dr. S. Meenakumari, Director, AU TVS CQM
Dr. Hariharan P, DEAN, CEG

AU TVS CENTRE FOR QUALITY MANAGEMENT
ANNA UNIVERSITY

Q'QUEST 2026

CERTIFICATE OF APPRECIATION

This is to certify that Mr./Ms. B. Kanimozhi from CSIR - CLRI is the PLATINUM / GOLD / SILVER / BRONZE AWARD WINNER of the QUALITY IMPROVEMENT PRACTICE COMPETITION held on 10th February 2026 in the 27th Annual Conference on Quality Management, Q'Quest 2026.

Dr. S. Meenakumari, Director, AU TVS CQM
Dr. Hariharan P, DEAN, CEG

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CSIR-Central Leather Research Institute

(CSIR Integrated Skill Initiative Training Programme)

CSIR-CLRI announces the commencement of the following placement oriented courses

Leather Processing

- Post Graduate Diploma Programme in Leather Technology
- Diploma in Leather Processing
- Short Term Executive Skill Development Programme in Leather Processing
- Integrated Skill Development on Quality Control Methods in Leather Manufacture
- Computerized colour Matching for Leather manufacturing

Leather and Leather products

- Post Graduate Diploma Programme in Leather Products Technology
- Quality and Visual Inspection of Leather and Leather Products
- Skill Training Programme in Leather and Leather-like materials for Emerging Entrepreneurs
- Short Term Executive Skill Development Programme in Leather Upholstery Manufacture
- Course in Fashion Design and Development for Leather Lifestyle Products

Leather Goods and Garments

- Diploma in Leather Goods Manufacture
- Short Term Executive Skill Development Programme in Leather Goods Manufacture
- Training Programme in Leather Goods Design (Manual and CAD)
- Diploma in Leather Garment Manufacture
- Short Term Executive Skill Development Programme in Leather Garments manufacture
- CAD for Garments

Allied Science courses

- Bioinformatics Associate/ Analyst
- Quality Control Chemist – Microbiology
- QA Chemist Equipment Validation - Life Sciences
- Nuclear Magnetic Resonance (NMR) Spectroscopy Analyst
- Quality Assurance Chemist
- Leather Biotechnologist
- Enzyme Technologist
- Structural Analytical Technologist
- rDNA Technologist

Leather Allied Sectors

- Short Term Executive Training Programme on Occupational Health and Safety for Leather and Allied (Product) Industries
- Short Term Executive Training Programme on Testing and Calibration for Leather Sector
- Repair, restore and maintenance of leather products
- Short Term Executive Training Programme on Waste Management for

Footwear

- Diploma in Footwear Manufacture
- Short Term Executive Skill Development Programme in Footwear manufacture
- Training programme in GAIT Analysis
- CAD for Footwear

Please visit https://clri.org/training.aspx for online / offline submission of duly filled in application

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For more info:

Website : https://clri.org/training.aspx

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Striving for Excellence and
Global Leadership in Leather Technology

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