TOTES GO COLOURS!
“carry-all” bag

from CSIR-CLRI Shoe & Product Design Centre
Dear Doyens and Members of the Indian Leather Fraternity; Colleagues from CSIR, Colleagues and Friends! It gives us great pleasure in sending you our June 2019 edition of The LEATHER POST.

This edition of the LEATHER POST provides insights on CSIR-CLRI Nurturing Secondary Level Human Resource through Vocational Education. It is that time of the year when parents and children are looking for career guidance. An ideal place for Education and Training, CSIR-CLRI provides opportunities for learning with courses like B.Tech in Leather Technology and for those opting for Diplomas, CSIR-CLRI offers various levels of training programmes in leather tanning as well as in design and manufacture of leather products covering footwear, leather goods and leather garments.

CSIR-CLRI congratulates Dr Vijay Viswanathan Head and Chief Diabetologist of the MV Hospital for Diabetes Royapuram Chennai for being elected unanimously as the First Asian President Elect of the D Foot International. Dr Vijay Viswanathan and CSIR-CLRI had worked together to make a patented Diabetic Footwear called DIASTEP.

We at CSIR-CLRI will strive to make this magazine informative and interesting and welcome your feedback for improvement.
The wavelength range of visible spectrum seen by naked eye is scientifically known as the light and this light based on its absorption or emitting wavelength are classified as colours. The colours are classified as primary colour, secondary colour and tertiary colour. The primary colours, Red, Yellow and Blue are considered mostly in the colour system. The secondary colours are the combination of the two primary colours whereas the territory colours are the combination of primary and secondary colour. The colours can be further classified as Cool as well as Warm colours.

Colours play an important role in product development and it is influenced by seasons. The fashion industry follows two seasons namely Spring Summer and Autumn Winter.

The psychological impact of the colour presents the mood of a person. Based on these factors, colours are chosen for their application in the products for particular seasons. The like of colour varies based on individuals, gender, ethnic and demographic. There is a need to understand the demographic and the season in which colour is to be used and various studies are being carried out for this analysis.

A research based survey was conducted by SPDC team to understand the various parameters and the likes of colour in Indian consumers.

The Leather Post
...and SLING BAGS
Nurturing Secondary Level Human Resource through Vocational Education

Diploma/PG Diploma Programmes at CSIR-CLRI

Dr (Smt) A Tamil Selvi,
Principal Scientist, CHORD, CSIR-CLRI

The Central Leather Research Institute (CLRI), a constituent laboratory of the Council of Scientific and Industrial Research, occupies a pivotal role in Human Resource Development for the leather sector. Established in 1948, CSIR-CLRI has supported the leather industry's growth over the decades through design, development and delivery of knowledge. Sixty percent of the Indian leather industry is being manned and managed by the alumni of CSIR-CLRI. CSIR-CLRI hosts training modules that impart the much needed technical as well professional skills to nurture quality manpower at all skill levels.

Vocational education for the leather sector began as early as 1914 with the establishment of tanning schools. But the introduction of professional courses in Leather Technology saw more of tertiary level resources. The tertiary level resources supply their intellectual inputs through Research and Development (R&D) planning and this level of manpower need to be backed by adequate primary and secondary level manpower. These resources are the ones who form the crux of R&D implementation. In the late 1980’s the industry felt the need for adequate
manpower resources at the secondary level and CSIR-CLRI championed the cause by introducing industry-specific modular programs in leather tanning/leather goods/ garments/ footwear for a period of six months. These programmes were autonomous programmes of CSIR-CLRI. The entire courses were designed and run solely by the Institute. CSIR-CLRI was able to study the societal alignment and prevailing market conditions in different leather centers pan India through its Regional Centers for Extension and Development (RCEDs) and offer courses that would cater to the manpower requirements at the respective regions. Aiming to develop higher learning vocational courses, CSIR-CLRI upgraded the modular courses to Diploma/ PG Diploma programmes to be in line with the industry’s manpower requirements.

Thus the modular programmes were upgraded to Diploma courses where the candidates will acquire high level of professional skills in specific unit operations of leather and leather product construction along with being awarded a degree. These are practical/skill intensive courses including know-how and hands on practice. Awareness about real field conditions is essential for a primary/secondary level resource to operate effectively. Hence field visits and industrial training are also a part of curriculum. The students are trained to function as master technicians/trainers/shop-floor supervisors in the leather sector. These programmes are worked out and continuously updated to assure that graduates are professionally competent and competitive in the field of leather processing and leather products.

Currently, Diploma and PG Diploma programmes in Leather and Diploma in Leather Products are organized by CSIR-CLRI. Diploma course pertains to level 5 and PG Diploma course pertains to level 8 of the National Skill Qualification Framework (NSQF). The prime feature of the programme lies in the fact that few of these trainees are also entrepreneurs in leather and leather product industries. CSIR-CLRI was able to harness this entrepreneurial skill in the course of the study that still remains unique.

The largest proportion of time in these Diploma courses is allocated to the acquisition of knowledge and skills via practical sessions - by hands on application and experience. Comprehension and understanding of the technical sessions is achieved when the trainees are presented with an opportunity to reinforce the knowledge/skill acquired through experiential learning in the form of industrial internship. Curriculum is designed with judicious inclusion of topics on the basis of the contemporary skill requirements of the leather/ leather products industry. Periodical review of the curriculum to suit the needs of the industrial society is an integral part of the training approach adopted.

More than 2000 candidates have completed their vocational education at CSIR-CLRI since 1993. The number of candidates who have completed their Diploma/ PG Diploma courses at CSIR-CLRI for the past 10 years are as follows:
Number of candidates who have completed Diploma/PG Diploma in Leather/Leather Products at CSIR-CLRI for the past 10 years

P.G. Diploma/Diploma Programme in Leather Processing
Entry requirement: 50% in Bachelor’s Degree in Science with Chemistry as one of the subjects for PG Diploma/50% in 10+2 or Equivalent Examination for Diploma
Duration / Month of Commencement: 52 weeks/July 2019
Place of training / Intake: Chennai / 20 candidates
Aspects Covered:
(Includes theory / practical sessions with project work and industrial visit)
Histology of hides and skins, Preservation/ Curing Techniques, Machines required for performing different operations in Leather Processing, Pre-Tanning Operations, Theory and Practice of Tanning Operations, Theory and Practice of Post-Tanning Processes, Theory and Practice of Finishing Processes, Different Types of Finished Leather, Cleaner Leather Processing, Tannery Waste Management

Diploma Programme in Leather Goods
Entry requirement: 50% in 10+2 or Equivalent Examination
Duration / Month of Commencement: 52 weeks/September 2019
Place of training / Intake: Chennai/ 10 candidates, Kolkata/ 10 candidates
Aspects Covered: (Includes theory / practical sessions with project work and industrial visit)
Orientation and Introduction to Leather Goods Manufacturing, Cutting and Clicking, Assembling and Stitching, Pattern Designing (Manual), Leather Product Making, Computer Aided Pattern Designing

Diploma Programme in Leather Garments
Entry requirement: 50% in 10+2 or Equivalent Examination
Duration / Month of Commencement: 52 weeks/September 2019
Place of training / Intake: Chennai / 10 candidates, Kolkata / 10 candidates
Aspects Covered: (Includes theory/ practical sessions with project work and industrial visit)
Orientation and Introduction to Leather Garments Manufacturing, Cutting, Assembling and Stitching, Garment Design and Pattern Making, Fabrication of Garments, Pattern Grading, CAD for Garments
Diploma Programme in Footwear
Entry requirement: 50% in 10+2 or Equivalent Examination
Duration / Month of Commencement: 52 weeks/September 2019
Place of training / Intake: Chennai / 10 candidates
Aspects Covered: (Includes theory / practical sessions with project work and industrial visit)
Orientation and Introduction to Footwear Manufacturing, Designing and Pattern Making, Cutting and Clicking, Pre-closing and Closing, Lasting and Finishing, CAD for Footwear
IMPORTANT NOTES

COURSE STRUCTURE
The vocational courses are practical intensive with 30-35 hours of hands on experience per week. Enough theoretical basis to understand the physical principles in leather processing/product-making is provided through 3-4 contact lectures per week.

MANAGEMENT AND FACULTY
Faculty for the courses is drawn from a vast body of experts from CSIR-CLRI, industry and international bodies. CSIR-CLRI has a well-knit management structure on the lines of CSIR laboratories.

SELECTION PROCEDURE
Depending on the number of applicants’ selection mode will have entrance test and/or Interview. Entrance exam is intended to judge the general aptitude of the candidate.

METHODS OF INSTRUCTION
Instruction methods involve show-how and hands on practice. Field visits and industrial training to provide an awareness of real field conditions will be part of curriculum. Medium of instruction will be in English.

SPONSORSHIP
Established industrial houses are welcome to sponsor candidates of their interest. In the selection modality, a special weightage will be provided to the candidates sponsored by established industries and non-profit making social organizations. However, these candidates will have to pass the threshold in the entrance tests.

COURSE FEE
Rs. 40,000 to be paid at the time of admission as single installment. The course fee should be paid online through “SBI Collect”.

CERTIFICATION
Certificates will be issued to the successful candidates for the respective course taken by the candidates.

GENERAL CONDITIONS
The selected candidates will have to abide by the rules and regulations of the training programmes of CSIR-CLRI. The terms and conditions will be listed with the provisional admission letter.

CONTACT FOR FURTHER INFORMATION
Head, Centre for Human and Organizational Resource Development (CHORD), CSIR-Central Leather Research Institute (CSIR-CLRI), Adyar, Chennai - 600 020. Ph.: 044-24437217, Email: chord@clri.res.in

WHY IN-HOUSE TESTING LABORATORY IS IMPORTANT

Testing is a systematic method to examine the quality of a product. The accompanying basic regular strategies are utilized to test the quality of the products - Visual examination, Feel through skin contact, Smell, Taste and Sound. These tests are additionally named as Non Destructive Tests (NDT) which are subjective and cannot be quantified. Simple to sophisticated tools like magnifier, microscope, sensors, magnets, pH papers and simple chemicals are also employed to improve the quality of these types of tests. These types of tests are used in leather tanning process to examine the materials, leather products and process while manufacturing and after finishing.

Visual inspections are to check the color of the sample, Shade, wrinkles, defects, dye penetration etc., For leather feeling through skin contact to feel grain smoothness, fullness, break and pipiness.

In any case, these tests have limitations and are subjective. Therefore, test results cannot be shared with other customers as a confirmatory report. Therefore, more reliable test methods using specially designed testing machines, tools and accessories are developed to ensure the quality of leather & leather products. These test methods are Physical Testing, Chemical Analysis and Fastness Properties of leather & leather products.

Many organization and institutes are working to make standards for those tests. Notably International Union of Leather Technologists and Chemists Society (IULTCS) have created test methods for leathers &
Testing plays a vital role in all industries. It is used to verify the quality of incoming materials, to control and validate critical processes during manufacture and to predict the performance of the finished product. In-house laboratory gives a clear indication on the management’s regards to high quality.

The role of in-house laboratory also includes testing of new products in research and development. Here the raw materials used can be checked for compliance with the requirement of the product. And the Lab can be used also to monitor the quality of outgoing final products and to analyze returns and rejects of a defective product.

Based on customer’s requirement options can be selected for test. In quality control choice of the test method can be based on rejects and reworks. Therefore, the development of in-house testing laboratory plays an important role in satisfying the customer’s requirement on product.

Five steps to quality assured testing:
Step 1
Primary requirement to set up laboratory, is a suitable space, power supply and water. The space requirement can be predicted from the volume of test equipment planned along with sample storage capacity. And also to maintain the necessary humidity condition inside the testing lab, air conditioning systems with parameter monitoring facility needed. The uninterrupted electrical power supply for the equipments plays an important role as the equipment comes with sensitive parts. This also affects the correctness of the report generated by the equipment. Adequate and clean water supply is essential for experiments; also if it comes with clamping device, compressed air becomes vital.

Step 2
Laboratory control system with a written document ‘manual’ should be prepared showing the day to day work in the laboratory. This control manual defines the following aspects,
- Responsibilities of all personnel involved in the system
- Laboratory required environment
- Upto date test methods to be followed
- All test equipments registered and labeled.
- Periodic maintenance and calibration of the test equipments.
- Staff training in technical aspects of testing methods.
- Details of consumable & reference materials
- Testing – initiation, selection, recording of results
- How a report generated after conclusion of the test results,
- About the authorization to signatory.
- Procedure to store the tested samples
- How staff are trained on health & safety precautions in the laboratory.

Step 3
Calibration is a comparison between a known measurement and the measurement shown in the test equipment. The testing equipment should be calibrated to ascertain the accuracy of the results for the given sample. Not only for the test equipment, calibration should be done for other tools like test specimen cutting dies, measuring instruments, weighing machine, magnifying glass etc., and this calibration should be done periodically. If it is found that the test equipment result not within the standards, immediate corrective measures needs to be taken.

Step 4
The personnel who have to take care of testing process should take sufficient training in specific test methods before involving in testing of materials from the clients. They also have to undergo refresher training whenever test methods are updated. All the personnel involved in testing should be trained by internal or external trainers and also needs to be certified as competent to evaluate the test results.

They should have the knowledge to understand the significance of items, materials and product concerned. Also the testing personnel should have sufficient knowledge about the intended use of the materials and products they test, diagnosis of defects, degradation nature of the materials while testing as well as while handling.

Step 5
Laboratory accreditation is the formal recognition of an organization’s competency to perform certain specific tests as per the customer requirements. In-house testing Laboratories have to follow ISO/IEC
17025 to implement a quality system aimed to improve the ability to consistently produce valid results. This standard is also the basis for accreditation from an accreditation body. Since the standard is about competence, accreditation is formal recognition of a demonstration of that competence.

Selection criteria for the testing machines / equipment's:
1. Buy required test methods which will identify the equipment required.
2. Check the manuals to satisfy the specification and parameter given in the test method.
3. Give importance on the accuracy of the test equipment rather than the cost.

**Conclusion**
For leather and leather allied manufacturers periodic testing of input materials and end products is necessary. Now materials and processes in the industry have changed with new technology and machines. Realizing the growing needs on quality control to meet the global market standards of leather and leather allied products, In house testing laboratory is a must and has to operate with high standards of accuracy, reliability and consistency, to suit to the today's quality conscious world. It can provide a definite advantage to the manufacturer, have minimal risk, better cost

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<thead>
<tr>
<th>No</th>
<th>Material</th>
<th>Test Name</th>
<th>Test Equipment Name</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Tear Strength (Test Method ISO 3377/ SATRA TM 162)</td>
<td>Universal Testing Machine</td>
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<td>Lasting Stimulation test (Upper) (Test method ISO 3379 / SATRA TM 24)</td>
<td>Digital Lastometer Machine</td>
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<td>Flexing endurance of leather (Test Method ISO 5402-1, /SATRA TM 55)</td>
<td>Bally Flexometer Machine</td>
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<td></td>
<td>Colour fastness to circular rubbing (Test method SATRA TM 8 / ISO 17700)</td>
<td>Circular Rubbing Machine</td>
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<td></td>
<td>Colour fastness to Water &amp; Perspiration fastness (Test method ISO 11641 / SATRA TM 335-1)</td>
<td>Colour Fastness Device</td>
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<tr>
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<td></td>
<td>Break pipiness (Test method SATRA TM 36)</td>
<td>Break Pipiness Scale Device</td>
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<td>2.</td>
<td>Sole Material</td>
<td>Density (Test method SATRA TM 134 &amp; 68 /BS 903)</td>
<td>Weight Balance with Water Displacement Attachment</td>
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<tr>
<td></td>
<td></td>
<td>Hardness (Test method SATRA TM 205 / ISO 868)</td>
<td>Sole Hardness Device</td>
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<td>Abrasion resistance (Test method SATRA TM 174 / ISO 4649)</td>
<td>Drum Abrasion Tester</td>
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<td>Attachment strength (Test method SATRA TM 181)</td>
<td>Universal Testing Machine</td>
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<tr>
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<td>Handle attachment strength (Test method SATRA TM 181)</td>
<td>Universal Testing Machine</td>
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<td></td>
<td></td>
<td>Watch strap fastness (Test method SATRA TM 335)</td>
<td>Colour Fastness Device</td>
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<td></td>
<td></td>
<td>Corrosion resistance of metallic components (Test method SATRA TM 310)</td>
<td>Chemical Solution And Cotton Fabric</td>
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<td>4.</td>
<td>Full Shoe</td>
<td>Whole Shoe Flexing (Test method SATRA TM 92)</td>
<td>Full Shoe Flexing Machine</td>
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<tr>
<td></td>
<td></td>
<td>Bond strength (Test method SATRA TM 411)</td>
<td>Universal Testing Machine</td>
</tr>
</tbody>
</table>

CSIR-CLRI offers Technical Consultancy for setting-up In-house Laboratories for Physical Testing and includes training of manpower as well. Please contact: Head, CLRI-CATERS, CLRI, Adyar, Chennai 600 020, Email Id : clricaters@clri.res.in; Phone:+91-44-2443 7216 for further information.
Eleventh Edition of Kanpur Buyer Seller Meet branded as SHOETECH-KANPUR was organized by Indian Footwear Components Manufacturers Association (IFCOMA) on 15th & 16th April 2019 at a newly constructed CLE Multipurpose Hall, KLC Complex, Banthar, Unnao, with the strong support of Council for Leather Exports, Kanpur Leather Complex & Indian Industries Association, Kanpur.

More than 60 Exhibitors participated in the Shoetech Kanpur and displayed various footwear components, accessories & machinery. The above included specialized Soles (TPR/TPU/PU) of the latest design, Plastic shoe lasts, Insoles, Toe-puff & Counters, Linings & Interlinings, Threads, Finishes & Chemicals, Packaging Boxes, Shoe Machinery etc.

The Fair was inaugurated on 15th April 2019 by Shri Mukhtarul Amin, Former Chairman of CLE in the august presence of Guest of Honours Shri Javed Iqbal, Regional Chairman, CLE, Shri Rakesh Suri, Shri Vikas Verma, ED, FDDI; Shri Raju Jalan, Shri Alok Agarwal, Chairman, Indian Industries Association, Kanpur, Shri O.P. Pandey, COA member, CLE & Shri Rishi Jalan by lighting of Lamp & Cutting of Ribbon. Smt. Pallavi Dubey, Regional Director and major component manufacturers were present during the ceremony.

The Chief Guest applauded the efforts of IFCOMA to bring the Industry together under one roof and help the exporters & Manufacturers to see the latest developments in the components sector.

As per the tradition, IFCOMA recognized and facilitated the special talent and achiever of the Industry. The Doyen of the Industry Mr. M.K.Jalan was honoured with IFCOMA Excellence Award and his son, Mr Rishi Jalan received the Award from Shri Mani Almal, Founder member & Former President of IFCOMA.

Innovative Product Awards for specialized products were presented to M/s Versatile Enterprises-Delhi, M/s Rupmaya Shoe Last Industries Agra & M/s Ess Aar Universal, Noida for their valuable contribution for the Industry.

Mr Balasubramaniam, Jt. General Manager, Ordinance Factory visited the fair for an interaction with the member Exhibitors.

Shri Pankaj Gupta, MLA (Unnao) visited the fair on second day to witness the developments and growth achieved by the Industry.

M/s Intercom - Skicorp Manufacturing was facilitated with the best stall award during the trade networking dinner in the evening by Shri Javed Iqbal Regional Chairman CLE & Shri Mani Almal, Founder Member and former President of IFCOMA.

Over 70 exhibitors from Kanpur, Agra, Noida, Delhi, Gurgaon, Chennai, Ludhiana and other places participated in this Grand Fair. The fair was appreciated by the Footwear & Leather Industry. Majority of the Exhibitors shared their satisfaction on the interactions and outcome of the fair.

IFCOMA with support of FDDI, organized a seminar cum interaction on the IDLS (Integrated leather development Scheme) for the Industry on the 16th April-2019.

The same was appreciated by the members of the Industry. Queries related to IDLS were addressed by Shri Aritra Das, Project Co-ordinator, FDDI and he also explained on how the application on the above has to be filed. The fair received stupendous response from the Industry in Jajmau, Banthar, Unnao and Kanpur. There were over 1000 visitors during the two-day fair organised by IFCOMA.
Shri Rishi Jalan receiving the IFCOMA Excellence Award on behalf of Shri MK Jalan from Shri Mani Almal, Founder-President of IFCOMA

Shri Pankaj Gupta, MLA, Unnao visiting SHOETECH 2019

Shri Mukhtarul Amin, Chief Guest being welcomed by Shri Sanjay Gupta, President, IFCOMA

Shri Ravi Agarwal, Rupmaya Shoelast Industries, Agra receiving the Innovative Product Award from Shri Mukhtarul Amin

Mr Manuj Seth, Versatile Enterprises receiving the Innovative Product Award from Shri Mukhtarul Amin

Shri Sudhir Rustagi, Director, Ess Aar Universal receiving Innovative Product Award from Shri Mukhtarul Amin
ABSTRACT
Sustainability is a significant factor for industries in developing countries like India, where the business units face the challenge of Quality, Cost and Delivery on one side, and factors like Environment, Social Accountability and so forth on the other. International Customers insist on both these facets. So the balance of Profit, Planet, and People is important for the sustainability of both the supply chain and Original Equipment Manufacturers and Brands.

Stringent Environmental requirements enforced by customers on supply chain have necessitated adaptive manufacturing strategies at business unit level, industry level and national level. Common Effluent Treatment Plants (CETPs) – where a group of companies join together and operate effluent treatment plant - is a cost effective solution that helps companies manage their trade effluents mitigating their impact on the environment. CETPs in order to be viable – have to be operated efficiently and effectively ensuring the cost of treating the effluent is sustainable in the long run.

This paper discusses about a Business analytics model that enables the operation excellence of the CETP. A cloud based software system that supports the model is also presented.

Introduction: Common Effluent Treatment Plants CETPs are usually shared effluent treatment facilities, which are co-owned and jointly managed by a group of companies. The member companies discharge their trade effluents to the CETPs where the effluent is treated through various processes making the effluent dischargeable, according to the prescribed environmental standards. In ideal situation a CETP works in ZLD scheme – Zero Liquid Discharge -where the member companies reuse the treated effluent (Water). The structure of a ZLDCETP is shown in Figure 1.

Operation Excellence of a CETP
The typical processes of a CETP are as follows:
- Operations - Effluent Conveyance, Pre Treatment, RO, Evaporator
- Maintenance
- Procurement
- HR
- Finance

Operation excellence of CETP will be achieved by the efficiency and effectiveness of the core functions namely Operations and Maintenance (O&M) and also by the support functions such as procurement and HR.
EPITOME – Environmental Performance Improvement Through O&M Excellence – is a business analytics model that enables performance monitoring in a structured way in a CETP context.

A typical CETP, where the core function is operation and maintenance has the task of processing the effluent through various stages and has to monitor a large multiplicity of parameters across several equipment categories. In this situation the data collection and data analysis are not structured and performance monitoring process is not always optimum.

EPITOME model provides a unified data architecture for monitoring parameters in the CETP context, enabling business analytics and decision support.

The EPITOME Model

**Figure 2: EPITOME Model**

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**Figure 1: Structure of a ZLD CETP**
The EPITOME model structures the CETP process as follows:

- Define Major Stages (Such as Pre Treatment, Reverse Osmosis, Evaporator)
- Define performance objectives for each major stage and performance metrics
- Define Sub Process Stages for each major stage
- Define the Quality Parameters and Process parameters to be monitored
- Define monitoring plan at the level sub process stages - giving the parameter to be monitored, the frequency of monitoring and the impact on performance objectives
- Capture, acquire data as per monitoring plan
- Perform gap analysis
- Perform corrective action and track.
- The framework of EPITOME model is given in Figure 2.
- The superimposing of CETP functions in EPTOPME model is given in Figure 3. (With Indicative sub process stages)

**Figure 3: Process Structuring of CETP**

Cloud Based Software for supporting EPITOME Model

Cloud-based application software has been developed to support the EPITOME model, which has a data base architecture to unify the monitoring data and a model base to support business analytics. The summary features of the software are given below.

- Aiding in business Control Systems: Enables sound business plan and control mechanism for operation efficiency, Maintenance Efficiency, capacity utilization, operation cost control and risk prevention.
- Better Financial Control: Accurate information on procurement, good receipts and expenses tracking will seal the gap of any financial leakages.
- Improved Customer Satisfaction: Online visibility on quantity of effluent treated and water recycled, and billing to direct customers improves client satisfaction rating.
- Reduced downtime: Control on on-time completion of Preventive Maintenance and Breakdown Maintenance ensures availability of equipment and optimum cost of maintenance.
5. Conclusion

- The EPITOME model has been successfully implemented in two CETPs in India and data definition and capturing has been highly structured.
- The cloud based software founded on EPITOME model has been put to use.
- Business analytics and decision support pointing to performance improvement has been enabled.
- Cost of operation in terms INR / CUM of treated effluent is expected to come down.

The architecture of the software is given in Figure 4.

**Figure 4: EPITOME ARCHITECTURE**

1. **Web Server:**
   - Remote Web Server – Either managed by Client or URS – Hosts application components

2. **Database Server:**
   - Remote DB Server – Either managed by Client or URS – stores application and business data centrally

3. **Business User connecting via Laptop Remotely:**
   - Business user connecting remotely to the system using Internet

4. **Business User connecting from Plant:**
   - Business user connecting to the system from plant using Internet

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Threshold and Penalty Management, treated water recycled.
- Procurement and Inventory: Store and Material configuration – Purchase requisition – Purchase order – Material Receipts and Inspection – Inventory control – Stock Value – Material Yield
- Operation Management: Process stage and control configuration - operational control and compliance – Stage wise quality and deviation handling, Shift-Log – Inspection Reports
- Equipment Interface Services
CFTI conducts a training program for ladies belonging to SC/ST communities through NGO. The NGO recruits a trainer of knowledge in cutting and closing skills of footwear/leather goods.

These trainers are trained at CFTI under Training of Trainers (TOT) program. CFTI engages CSIR-CLRI as the Evaluation Organization to assess the candidates at the end of the training program. The assessment method of CSIR-CLRI is written paper questionnaire, practical test and viva voce to evaluate the candidates.

The center at Mayiladuthurai was well equipped to handle such programs. Sufficient sewing machines in working condition were present. Enough tables were present that could be used for cutting practices by providing cutting mats. The 60 trainees were educated and well mannered. They were trained in two batches. Their performance was also equally good. All the trainees participated in the Assessment done by CSIR-CLRI and passed.

The Kumbakonam center had an intake of 30 candidates. There were 30 sewing machines and theory classroom for equal number of trainees. Many of them were educated although some of the candidates had completed only schooling who joined the course out of need to support their families. Out of the 30 candidates 26 of them underwent the assessment and all of them passed.

CSIR-CLRI Shoe & Product Design Centre (SPDC) assesses candidates under the SHG programme in cutting and closing skills of footwear/leather goods.

CSIR-CLRI supports CFTI in the Evaluation to assess the candidates at the end of the training program. In picture: Shri KG Prabhu and Shri L Murugan are seen evaluating candidates in Mayiladuthurai and Kumbakonnam during 6-8 June 2019.
CSIR-CLRI is conducting a customized training programme in BAG MAKING for M/s KH Exports India Pvt. Ltd. (Leather Goods Division) Chennai that covers the following areas: Concepts in Designing, Pattern Making by Hand, Cutting, Splitting, Skiving, Folding, Attaching, Edge – Inking, Final Stitching and Pattern Making using CAD. Training is in progress at the Shoe & Product Design Centre, CSIR-CLRI
Observance of Swachhta Pakhwada 2019 conducted in this Institute from 14.5.2019 to 28.5.2019. This program started with undertaking the “Swachhta Pledge” and planting the saplings on 14.5.2019. Following cleanliness programs were carried out in this institute and staff Quarters.
THEME AND ACTIVITIES DURING SWACHHTA PAKHWADA -2019

<table>
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<tr>
<th>Day</th>
<th>Date</th>
<th>Theme</th>
<th>Detail Activities</th>
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</thead>
<tbody>
<tr>
<td>Day-1</td>
<td>14.05.2019 (TUE)</td>
<td>Opening Ceremony &amp; Swachhta Pledge</td>
<td>Opening of Swachta Pakhwada &amp; Pledge Taking Ceremony and planting tree</td>
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<td>Day-2</td>
<td>15.05.2019 (WED)</td>
<td>Swachhta Awareness</td>
<td>Promotion of Swachhta message through digital display boards, banners, posters, hoardings, pamphlets, slogans etc.</td>
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<td>Day-3</td>
<td>16.05.2019 (THU)</td>
<td>Swachh Parisar (Clean work place)</td>
<td>General Cleaning of floor, removal of cob webs, cleaning of fans, furniture &amp; other electronic items,</td>
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<td>Day-4</td>
<td>17.05.2019 (FRI)</td>
<td>Swachh Parisar (clean residential premises)</td>
<td>Special Cleanliness drive in Residential Premises/Guest House etc.</td>
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<td>Day-5</td>
<td>18.05.2019 (SAT)</td>
<td>Swachh Paryavaran</td>
<td>Voluntary cleaning activities in and around office premises and installation of potted plants in corridors to create an eco-friendly environment</td>
</tr>
<tr>
<td>Day-6</td>
<td>19.05.2019 (SUN)</td>
<td>Swachh Anubhaag</td>
<td>Disposal of unused files/papers/ registers, old records and to weed out the same as per Record Retention Schedule.</td>
</tr>
<tr>
<td>Day-7</td>
<td>20.05.2019 (MON)</td>
<td>Swachh Neelaami</td>
<td>Auctioning of obsolete/unserviceable items of the office</td>
</tr>
<tr>
<td>Day-8</td>
<td>21.05.2019 (TUE)</td>
<td>Swachh Neer</td>
<td>Intensive inspection/checking and Upkeeping drive for all water installations including water filter plants, sources of water supply, water taps for drinking water at office, residential colonies, hostels, hospitals, schools etc.</td>
</tr>
<tr>
<td>Day-9</td>
<td>22.05.2019 (WED)</td>
<td>Swachh Samwad &amp; Swachh Pratispardha</td>
<td>Display of Exhibition &amp; Organising Quiz/ Debate competition on cleanliness and Hygiene.</td>
</tr>
<tr>
<td>Day-10</td>
<td>23.05.2019 (THU)</td>
<td>Swachh Ahar</td>
<td>Intensive cleaning of office canteens/ cafeteria etc.</td>
</tr>
<tr>
<td>Day-11</td>
<td>24.05.2019 (FRI)</td>
<td>Swachh Karyalaya</td>
<td>Cleanliness drive in office premises and adjoining areas near the premises.</td>
</tr>
<tr>
<td>Day-12</td>
<td>25.05.2019 (SAT)</td>
<td>Swachh Karyalaya</td>
<td>Cleaning of all doors, window glasses and curtains</td>
</tr>
<tr>
<td>Day-13</td>
<td>26.05.2019 (SUN)</td>
<td>Swachh Karyalaya</td>
<td>Dusting of chairs, conference table, plants and paintings of conference Hall/Buildings</td>
</tr>
<tr>
<td>Day-14</td>
<td>27.05.2019 (MON)</td>
<td>Swachh Prasadhan</td>
<td>Removal of seepages and need based construction/ renovation of broken pipelines/sanitary warers, toilets, washrooms &amp; drainage system</td>
</tr>
<tr>
<td>Day-15</td>
<td>28.05.2019 (TUE)</td>
<td>Review &amp; Closing Ceremony</td>
<td>The work carried out during the Pakhwada should be reviewed and a detailed report with photos &amp; videos should be uploaded on the website of respective CSIR Lab./ Instt. as well as CSIR website.</td>
</tr>
</tbody>
</table>

In connection with this commemoration, Quiz test was conducted for the Staff and Scholars/Students of CSIR-CLRI and distributed the prizes for the winners and runners during the Valedictory function.

Further, as an Awareness program, importance of Swachhta Pakhwada was explained to the students and scholars staying in CSIR-CLRI staff quarters and organised a program for undertaking a “Swachhta Pledge”.

Finally, a Valedictory function was organised on 16.6.2019. The Regional Deputy Commissioner, Dr.Alby John Varghese, IAS graced the program as Chief Guest. Dr. C.Muralidharan, Chief Scientist presided over the function and delivered the Presidential address. Dr.P.Shanmugam, Sr.Principal Scientist and Dr.K.Srinivasan, Principal Scientist welcomed the gathering and proposed vote of thanks, respectively. During the program, cash awards were provided to the Best Service Team from this Institute as well as from the Staff Quarters.

During the Chief Guest’s address, the Commissioner insisted on each individual’s immediate responsibility in keeping the cleanliness at workplace and surroundings areas. He also spoke about the need of segregation of the wastes before disposal.
"M/s. Al Dua Food Processing Pvt Ltd" which is into processing and Packing of Fresh and Frozen Boneless Buffalo Meat with an Integrated Abattoir and Meat Processing Plant is situated at Aligarh, U.P.

M/s Al Dua Food Processing has approached CSIR-CLRI for technical support to conduct the performance audit for their production plant. CSIR-CLRI made an agreement with M/s Al Dua for carrying out the audit work. RCED Kanpur is undertaking the project and conducting the activity at M/s Al Dua Food Processing Pvt Ltd, Aligarh, UP.
CSIR-CLRI congratulates ...

Dr Vijay Viswanathan Head and Chief Diabetologist of the MV Hospital for Diabetes Royapuram Chennai was elected unanimously as the First Asian President Elect of the D Foot International an organization based in Belgium and which represents the people working in Diabetic Foot in 193 countries. The main objective of D Foot is to reduce Diabetes related amputations all over the world especially in low and middle income countries.

Best Wishes on your Retirement

Shri KAMALAKANNAN M
Asst Section Officer (Gen)
ADMINISTRATION - EIII (BILLS SECTION)
(superannuated on 31st May 2019)

Shri EKAMBARAM P
MTS, ENGINEERING SERVICES - LAB MAINTENANCE
(superannuation on 30th June 2019)
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