ANNUAL REPORT 2022-23

EASTERN REGIONAL LABORATORY

BUREAU OF INDIAN STANDARDS

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C O N T E N T S

Message of Senior Director & Head

As we approach the end of another year, it is with great pride and enthusiasm that I present our Annual Report for the year 2022-23. This report not only reflects our accomplishments but also embodies the dedication and hard work put forth by each member of our ERL team. We are reminded of the steadfast commitment of our dedicated team and the pivotal role ERL plays in upholding the safety, integrity, and quality of products bearing the BIS Standard Mark or the Hallmark.

Throughout 2022-23, our laboratory has remained unwavering in its pursuit of excellence. Our primary goal continues to be the protection of health and safety, environmental preservation and the promotion of quality goods across the landscape. Through rigorous testing, precise & in-depth analysis of results we provide the scientific backbone that supports informed decision-making and ensures regulatory compliance.

Our lab has been a hub of activity, fostering modernisation, automation, creativity and ground breaking achievements. I am pleased to highlight some of our key achievements from the past year:

1. Our lab has made significant strides in advancing our understanding of testing of samples in the field of Steel, Cement & PDW.

2. We have expanded our facilities to support the QCOs being issued by Line Ministries and we have been able to test a number of products thereby fulfilling the Government dream of setting up a quality ecosphere. This has not only amplified the impact of our work but has also facilitated the aim of BIS to hand-hold the industry to produce Quality goods.

3. Our investment in state-of-the-art equipment and technologies has enabled us to enhance the accuracy and efficiency of our testing processes. The introduction of cutting-edge technologies into our lab has allowed us to conduct analysis with a level of precision and accuracy previously unattainable. This has opened up new avenues of testing and improvements in Indian Standards. This has not only elevated the credibility of our results but has also empowered us to adapt to emerging trends and challenges.We will continue to invest in our team's professional development, ensuring that they are equipped with the latest knowledge and skills to navigate the ever-changing scientific and regulatory landscape.

4. We have continued to foster strong relationships with industry, academia, and other regulatory bodies. By working together, we strengthen our collective ability to address complex issues, exchange knowledge, and promote harmonization of standards. Our commitment to transparency and open communication is integral to building trust and confidence among all stakeholders.

5. Our commitment to education and outreach has remained unwavering. Through Internship programs, workshops, seminars, and most importantly through public engagement initiatives like Exposure visits for Schools / Colleges / Industry, we have shared our passion for science with the broader community and inspired the next generation of researchers/analysts.

6. Our team has expanded with the addition of talented analysts, technicians, and support staff. This growth has brought fresh perspectives and skills, enriching our collaborative environment.

7. Recognizing our responsibility towards environmental stewardship, we have implemented sustainable practices within the lab. These efforts reflect our dedication to minimize our ecological footprint.

8. The contributions of our lab has been acknowledged through Award of Excellence for ERL by DG, BIS and invitation to speak at prestigious conferences for Steel Industry, Footwear Industry, etc. These accolades reflect the excellence that defines our lab.

As we reflect on the achievements of the past year, let us also look forward to the opportunities that lie ahead. The challenges we face only fuel our determination to continue pushing the boundaries of knowledge and innovation.

I would like to express my heartfelt gratitude to each and every member of ERL for their unwavering dedication, hard work, and passion. I extend my appreciation to our partners and stakeholders for their trust and collaboration. Our lab's success is a result of our collective efforts. I am privileged to lead such an exceptional team and I look forward to the exciting journey that awaits us in the coming year.

Subhadip Basu
Senior Director & Head

OUR TEAM

Manojit Mandol
OIC- SampleCell
Scientist D | Joint Director

Mr. Monojit Mondal completed his B. Tech in Metallurgy from the prestigious Indian Institute of Engineering Science and Technology (IIEST), Shibpur in 2011. Before joining BIS, Mr Mondal worked in Tata Metaliks as an engineer in the Blast Furnace division. He has multi-dimensional experience of working in the fields of Conformity Assessment (Product Certification), Management System Certification and laboratory activities of BIS for the past 11 years. Presently, he is heading the Sample Cell at Eastern Regional Laboratory. He plays a crucial role in efficient management of sample flow and optimisation of output of ERL.

Shantanaba Majumder
OIC- Quality Assurance &
Building Maintenance Section
Scientist C | Dy Director

Mr. Shantanaba Majumder completed B. Tech in Civil Engineering from West Bengal University of Technology and M. Tech from IIT Guwahati with specialization in the fields of Hydraulics, Water Resources and Environmental Engineering. Mr. Majumder has 7 years of experience in the fields of Conformity Assessment Scheme and Laboratory activities of BIS. He has played a crucial role in creation of LPG Cylinder testing facility in ERL. He is presently looking after the Quality Assurance section and building renovation projects. He is also an IS/ISO/IEC 17025 : 2017 and AHC Auditor.

K.S Rao
OIC- Sample Cell
Scientist C | Dy Director

Mr. K. S. Rao has done his B. Tech in 1993 from Jawaharlal Technical University. He has putup more than 33 years of service in BIS. Prior to join in BIS he was associated with the field of printing technology, oil extraction mills and other sectors. In BIS he has worked in Laboratories and certification departments. He has played a pivotal role in doubling the output of Electrical Section. He is having excellent organizing capability and a vast technical knowledge. Under his leadership electrical section touches new milestone in terms report generation, modernization and automation. Various projects are under execution at electrical laboratory out of which few are Automatic Cable Dimension measuring device which uses AI feature to measure thickness of insulation and sheath, digital micro ohm meter which will measure the resistance at a single go. He is also an IS/ISO/IEC 17025 : 2017 and AHC Auditor.

Abhijit Singh
OIC- Microbiology & RAL
Scientist B | Director Assistant

Mr. Abhijit Singh has completed his B.E. degree in Food Technology and Biochemical engineering from Jadavpur University. Before joining Bureau of Indian Standards he was persuing MS(Research) program from prestigious Indian Institute of Technology Delhi. During his 3 years stint in ERL he has worked as the Officer in Charge to Microbiology, Referral Assay Lab and Chemical sections. He has been instrumental in giving final shape to the creation of state of art instrumentation lab for testing of PDW. Under his leadership Referral Assay lab and microbiology sections has reached new heights in terms total output. He is also an IS/ISO/IEC 17025 : 2017 and AHC Auditor.

Tarique Sajjad
OIC- Mechanical Section

Mr. Tarique Sajjad is Mechanical Engineer of 2018 batch from B.I.T Sindri. He is a Scientist-B/Assistant Director & Officer-In Charge of Mechanical Section in Eastern Regional Laboratory, BIS. He has joined BIS in 2020 and since his joining he has worked in ERL. He has played a significant role in augmenting the testing output of Mechanical Section from 90 samples/month in Oct 2020 to 400 samples/month in March 2023. He has executed various projects for automation and modernization of Mechanical Lab. He is also the auditor for "Laboratory Quality Management System & Internal Audit as per IS/ISO/IEC 17025:2017" & Auditor for Assaying and Hallmarking centre.

H. Changloi
Assistant Director,
Accounts and Finance

Mr. H. Changloi completed B.Sc. (H) degre from Manipur University. He has put up more than 15 yrs of service in BIS. He has completed various courses in Administration and Accounts related training organised by NITS and NIFM. Presently he is posted as AD (A & F) of ERO with additional charges of ERL

Ankit Bhumla
OIC- Chemical Section

Mr. Ankit Bhumla is a post graduate in Chemistry from Tata Institute of Fundamental Research, Mumbai. He became a part of BIS in September 2021. He oversees the activities of the Chemical Section and has played a pivotal role in driving transformation within the section. His future objective is not solely centered on establishing the lab as a routine testing entity, but also on positioning it as a frontrunner in other endeavors through the promotion of standards sensitization and increased awareness of testing. He is also auditor for "Laboratory Quality Management System as per IS/ISO//IEC 17025:2017."

OUR TEAM

EMPLOYEE LIST OF ERL, KOLKATA

Sl. No.	Employee No.	Name of the Employee	Designation	Group
1.	062294	**Subhadip Basu**	Sc-F & Head	A
2.	065065	**Manojit Mondal**	Sc-D	A
3.	056030	**K. S. Rao**	Sc-C	A
4.	067491	**Shantanaba Majumder**	Sc-C	A
5.	069680	**Abhijit Singh**	Sc- B	A
6.	070386	**Tarique Sajjad**	Sc-B	A
7.	071074	**Ankit Bhumla**	Sc- B	A
8.	058483	**Sudhanshu Kr. Dey**	LO	B
9.	066711	**Bhabotosh Biswas**	LO	B
10.	066583	**T. K. Kundu**	LO	B
11.	066737	**S. S. Ghosal**	LO	B
12.	066753	**Avijit Paul**	LO	B
13.	066788	**Ranjan Das**	LO	B
14.	066745	**Shampa Ghosh**	LO	B
15.	066800	**Ranita Mukherjee**	LO	B
16.	066818	**Ankhi Chakraborty**	LO	B
17.	067300	**Devendra Prasad**	LO	B
18.	066761	**Ramesh Naidu Poluparthi**	TA (Lab)	B
19.	067326	**Shalinee**	TA (Lab)	B
20.	068730	**Biswajit Gope**	TA (Lab)	B
21.	068501	**Bigya Ranjan Pradhan**	TA (Lab)	B
22.	068560	**Ayub Alam**	TA (Lab)	B
23.	068543	**Binit Vinayak**	TA (Lab)	B
24.	067261	**Nirbhay Ranjan**	TA (Lab)	B
25.	071722	**Sanjeev Marandi**	TA (Lab)	B
26.	068535	**Rupesh Kumar Verma**	TA (Lab)	B
27.	068659	**Sonali Goswami**	TA (Lab)	B
28.	072061	**Soumilee Nandy**	TA (Lab)	B
29.	072099	**Mampee Mukherjee**	TA (Lab)	B
30.	072214	**Pronoy Biswas**	TA (Lab)	B
31.	071994	**Pritam Ghosh**	TA (Lab)	B
32.	068641	**Sweeti Kumari**	TA(Lab)	B
33	068446	**Aloka Kumar Sahoo**	Mr. Tech.	B
34.	068411	**Bishnujyoti Mishra**	Mr. Tech.	B
35.	061190	**Shyamal Isswar**	PS	B

Laboratory
AT A GLANCE

LABORATORY AT A GLANCE

The Beginning

The lab was established in 1968 at Chowringhee Approach to cater to the Tea-packaging and Steel Industry in the region. In 1971, it was shifted to lower Rowdon Street. With increased requirement for testing of various other products ERL alongwith ERO shifted to Kankurgachi in 1981 (where the present Main building is located). Buoyed by its success and increased load on Lab to create new facilities and augment the existing, ERL was given its own building (the now Annex building) where it started functioning with effect from 1992. The Eastern Regional Laboratory (ERL) is one of the 10 BIS labs, catering to the testing needs of samples being drawn under the various Conformity Assessment Schemes of BIS.

ERL Main building: Then

ERL Main building: Now

Accreditation

The Lab has been accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) in accordance with IS/ISO/IEC 17025:2017 in Chemical, Mechanical & Electrical fields. The current NABL accreditation cycle is valid up to Sep, 2023.

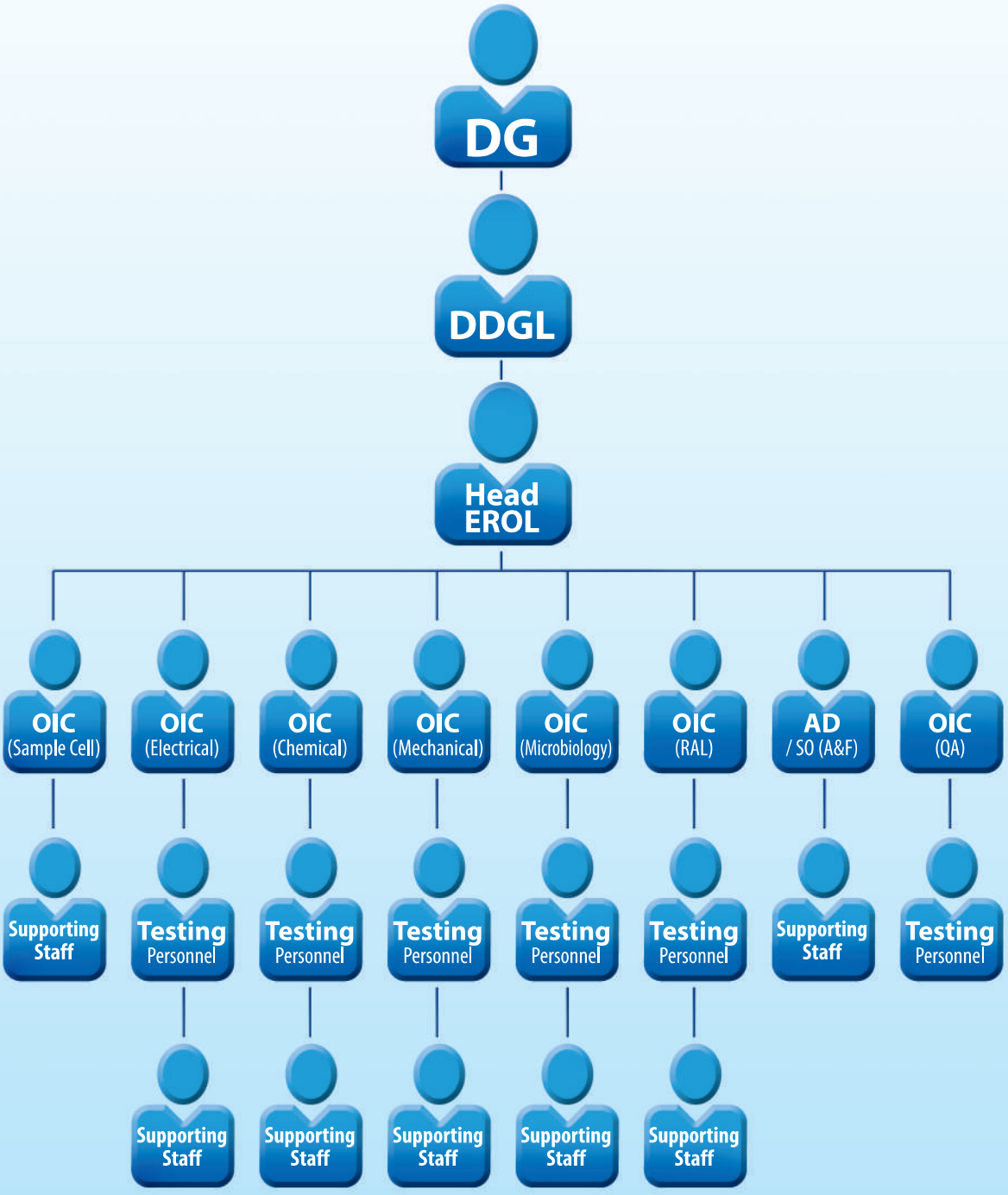
Extension of Scope

Initially there were 3 testing sections Chemical, Mechanical and Electrical, supported by sections like Sample Cell, Quality Assurance, Administration & Finance. The lab was spread in five floors of the Annex building. All the three Sections were accredited by NABL. With increasing demand to cater to the PDW industry & Jewellers, the Microbiology section and RAL Sections were added in the year 2019-20. With the emphasis of the present Management to automate its facilities, creation of new facilities for implementation of QCOs especially for Toy, Steel, Building Materials and upcoming new QCOs like those for Footwear, the expansion of lab was imminent. In 2021 it was agreed to operate lab from two premises of the (the ERO building) & (the original ERL building). The Chemical Section, A&F Section & QA Section were shifted & started operating from the Main building in 2021. Simultaneously, the Instrumentation Lab was setup in 2021 followed by a Calibration Lab in 2022. The Main building is undergoing renovation & once completed it is expected to house the new RAL & the new Microbiology Sections with enhanced capacities of sample analysis.

ERL Annex building: Then

ERL Annex building: Now

ORGANISATIONAL STRUCTURE



BUREAU OF INDIAN STANDARDS
QUALITY POLICY

BIS Laboratories provide dedicated testing services to facilitate smooth operation of Bureau's product conformity assessment schemes with high degree of credibility, integrity, competence, impartiality and consistent operation.

BIS laboratories are, therefore, committed to provide timely and efficient services to meet the following objectives:

(i) To become the national benchmark of excellence in laboratory quality management system in the country.

(ii) To follow the requirements of IS/ISO/IEC 17025, customers, regulatory authorities and organizations providing accreditation.

(iii) To maintain the highest degree of professional ethics and integrity among the laboratory staff.

(iv) To undertake laboratory activity in impartial manner and to maintain confidentiality for all information obtained or created during the performance of laboratory activities.

(v) To maintain effectiveness of laboratory activities by employee motivation, continuous monitoring, optimum utilization of available resources, transfer of knowledge through sustained training and continual up-gradation of facilities and resources with technological advancements.

(vi) To perform test activity in accordance with methods prescribed in relevant Indian Standard.

Director General

Place: New Delhi
Date: 10-06-2021

National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

BUREAU OF INDIAN STANDARDS, EASTERN REGIONAL LABORATORY (EROL)

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

P-230, CIT SCHEME, VII M, BLOCK W, KANKURGACHI, KOLKATA, WEST BENGAL, INDIA

in the field of

TESTING

Certificate Number: TC-4020

Issue Date: 15/09/2021 **Valid Until:** 14/09/2023

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : Bureau of Indian Standards

Signed for and on behalf of NABL

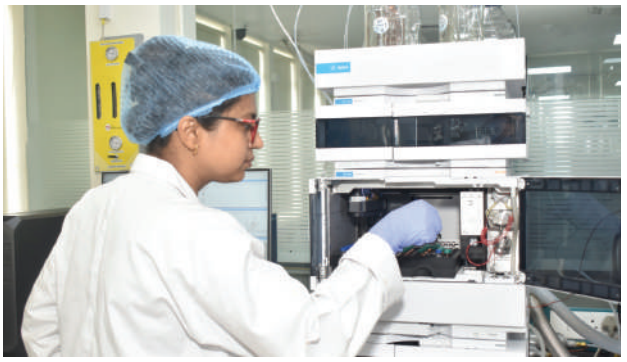
N. Venkateswaran
Chief Executive Officer

TRANSFORMATION

While BIS labs have traditionally been undertaking tests as per the conventional methods of analysis however a need was felt by BIS to modernise its testing facilities due to the following:

- Increased number of products being brought under Certification,
- Implementation of QCOs by various Ministries,
- Increase in surveillances by Branch Offices,
- Reducing manual intervention and chances of human error,
- Increased harmonization with International Standards,
- Optimisation of testing time to ensure ease of doing business.

As a result all labs had implemented major modernisation programs in 2019-20. With the successful implementation of phase-1 modernisation program, the Instrumentation lab of ERL started functioning in 2021. The lab is one of the most advanced Packaged Drinking Water laboratories in the region, equipped with cutting edge instruments like LCMSMS, GCMSMS, AAS, ICP-MS, FTIR, Ion-Chromatograph, etc. In addition a state of the art Metal analysis lab for Hardness testing has also been setup comprising of equipment like Computerised Micro-Vicker Hardness tester, Computerised Charpy Impact Tester etc. The two buildings are also undergoing renovation. Part modernisation has already been done and the rest of the renovation work is expected to be completed in 2023-24.



LCMSMS

Digital Charpy Impact Testing Machine

Digital Vicker Hardness Testing Machine

Ongoing renovation works

Renovation work is expected to be completed in 2023-24.

ACTIVITIES OTHER THAN TESTING

With the need to spread awareness about standardisation & its importance, since 2021 ERL has started engaging itself in Exposure visits for Students from Schools & Colleges, Certificate course for A&H personnel. ERL has also started engaging graduate & post-graduate students for Internship programs and in 2022-23 had engaged 11 students. We believe practical exposure to world class advanced instrumentation will help the students to abridge the gap between theoretical knowledge and practical application.

Quality Assurance

Quality Assurance Department identifies the need and updation, revision of the Quality Manual, Quality Procedures and Quality Formats. QAD also develops and implements improvement for monitoring of the Management systems. Further, responsibility of QAD includes ensuring the effectiveness of laboratory activities, Providing inputs, coordinating Internal and External audits, organizing exposure visits, training programmes etc.

Sample Cell

Sample Cell is responsible for monitoring and supervision of proper receipt of Sample (from BOs as well as those from potential applications for BIS license), handling of disputes related to samples and their timely resolution, Interaction with various BOs sections, Customers 9494 nos. of samples of product certification and 7007 nos. of RAL samples were successfully handled by sample cell in 2022-23. 6812 RAL remnant samples were returned to various BOs in the financial year.

A&F Section

Admin &Finance section of the lab is responsible for the section also records and manages the data for human resources (permanent & contractual), budget allocation and expenditure, purchase through GeM/CPP portal, general upkeep of all sections etc.

Student exposure visit

Intern working in chemical lab

Test facilities

AVAILABLE

FACILITIES AVAILABLE

The laboratory specializes in testing in the fields of Chemical (including Gold), Mechanical, Microbiological and Electrical. Eastern region has a high concentration of industries from Metal, Building Material & allied sectors and testing of these products has always been the strength of ERL.

The laboratory specializes in testing in the fields of Chemical (including Gold), Mechanical, Microbiological, & Electrical. Eastern region has a high concentration of industries from Metal, Building Material & allied sectors and testing of these products has always been the strength of ERL.

The Chemical lab houses the state-of-the-art Instrumentation Lab which was inaugurated by Sh Pramod Tiwari, DG on 22nd Sep 2021. The lab has some of the most modern equipment for sub-ppm & ppb level analysis such as GC-MS/MS, LC-MS/MS, ICP-MS, AAS, FTIR, IC to name a few. Chemical lab expertises in analysis of various parameters like Heavy Metals, Pesticide Residues, PCB, PAH, Pthalate, etc in a range of products like PDW, Containers, Footwear, etc. The lab has now the capability of testing 600 samples/month up from 100 samples per month in 2013-14.

The Microbiological lab was setup in 2019 to cater to the increased demand of PDW testing as more and more samples were getting drawn by BOs and were being sent to OSLs. With creation of the lab the number of samples being sent to OSLs had come down. The lab started with an initial capacity of 50 samples per month and now has the capability of testing 240 samples/month. It expertises in bacteriological analysis of PDW, PNMW, Drinking Water, Dairy products & Disinfectant fluid.

The Mechanical lab has the biggest setup in ERL and has the largest number of products in its scope. Mechanical lab became functional as soon as ERL was setup in 1968. Since its commencement it has undergone massive expansion in terms of product profile as well as no of reports being generated. The major products being tested are Steel, Cement, Plastics, Plywood, etc. ERL stands out as the exclusive BIS laboratory with a complete testing facility for Jute & allied products. In the recent years it has added Plastic Containers, Toys & LPG Cylinders in its scope.

Cement Lab, Mechanical Section

The Electrical lab was setup for testing Cables & Conductors. In the recent years it has added Electrical Toys in its scope. It plans to add Switch & Socket in coming years to support the BIS Conformity Assessment Scheme.

The Referral Assay Lab (RAL), aimed at supporting the Hallmarking Scheme, was inaugurated on 20th Aug 2019 by Smt Surina Rajan, DG BIS. It has assumed immense importance after implementation of mandatory hallmarking scheme by Government of India. Prior to 2019 gold testing was operational at SRL Chennai and CL, Sahibabad. Based on the concentration of jewelers in the eastern region the 3rd RAL of the country was established at ERL, Kolkata. The RAL Kolkata now tests around 800 samples per month and caters to the Branch offices of BIS in Eastern and North Eastern region of India.

Based on the expertise ERL has developed over the years, the Executive Committee (EC) of BIS in its 144th meeting held on 05th Dec 2019 decided to designate ERL as the Center of Excellence (COE) in the field of :

1. Cement & Cement related products (Building Material) and
2. Steel & Steel products.

In 2021, ERL (along with Central Lab) has been designated as the Nodal lab for testing of Footwear & allied products. QCOs have already been issued by the concerned Ministry for implementation. ERL has already created facilities for some footwear and creation of test facilitites for other ISS at ERL are in full swing.

B.O.D. Incubator, Micro Lab

NEW TEST FACILITIES

As on date ERL is having complete test facilities for 154 IS and Partial facilities for 357 IS and for samples being received through LIMS, ERL is having complete testing facilities for 21 IS and partial testing facilities for 357 IS. ERL is continuously making efforts to upgrade the testing facilities available for products covered under Mandatory Certification.

The lab has made efforts to automate the processing of regularly received test samples, enabling the handling of a substantial volume of samples while maintaining the accuracy of results.

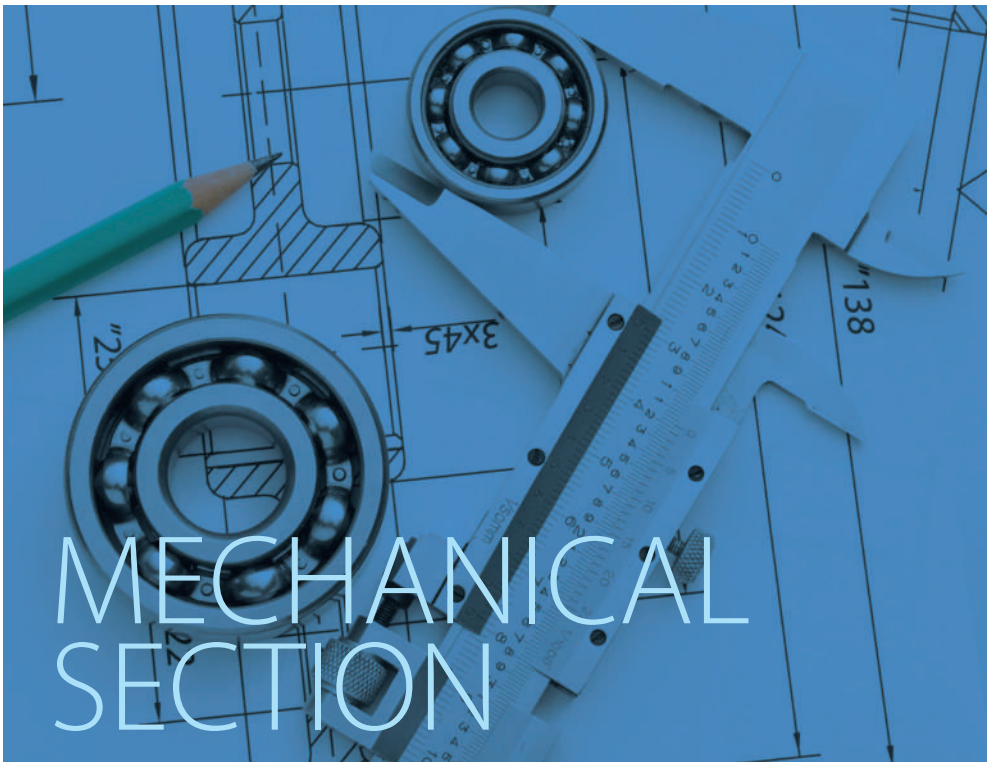
Creation of New Test Facilities

In 2022-23, ERL has developed test facilities for various products such as Footwear, LPG Cylinders, Dairy Products, Disinfectant fluid, White Portland Cement, etc.

Micro Lab

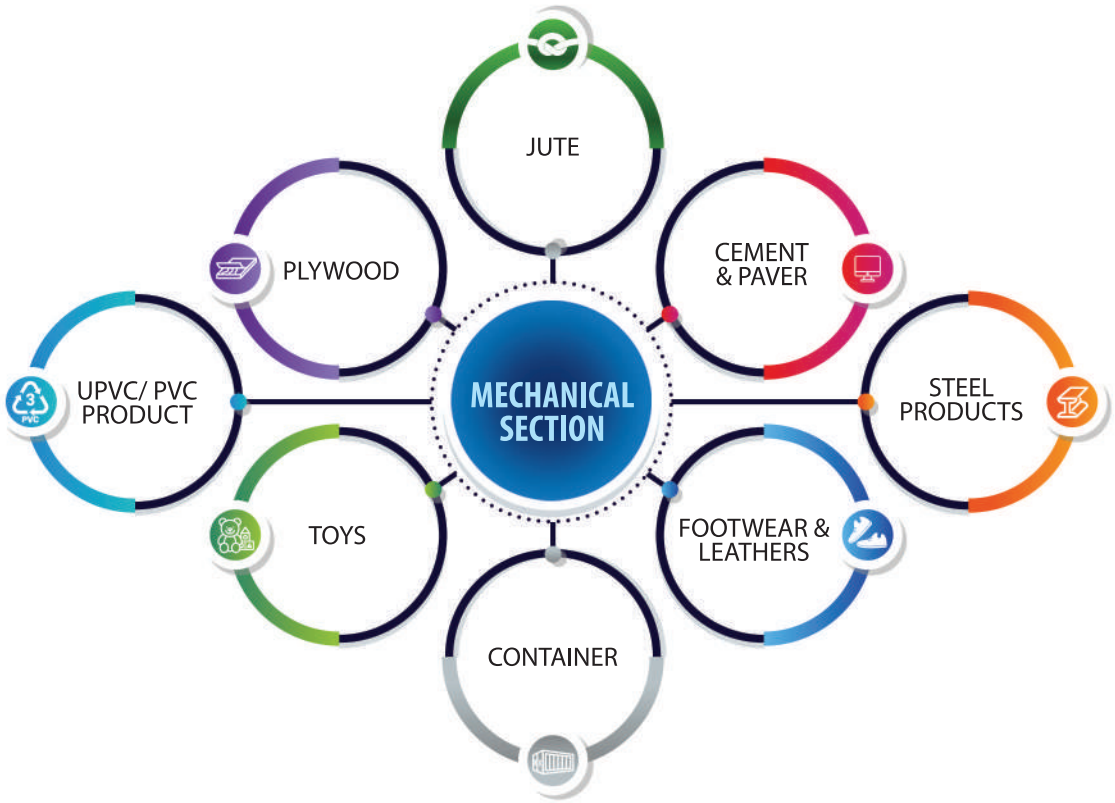
Footwear Testing Lab

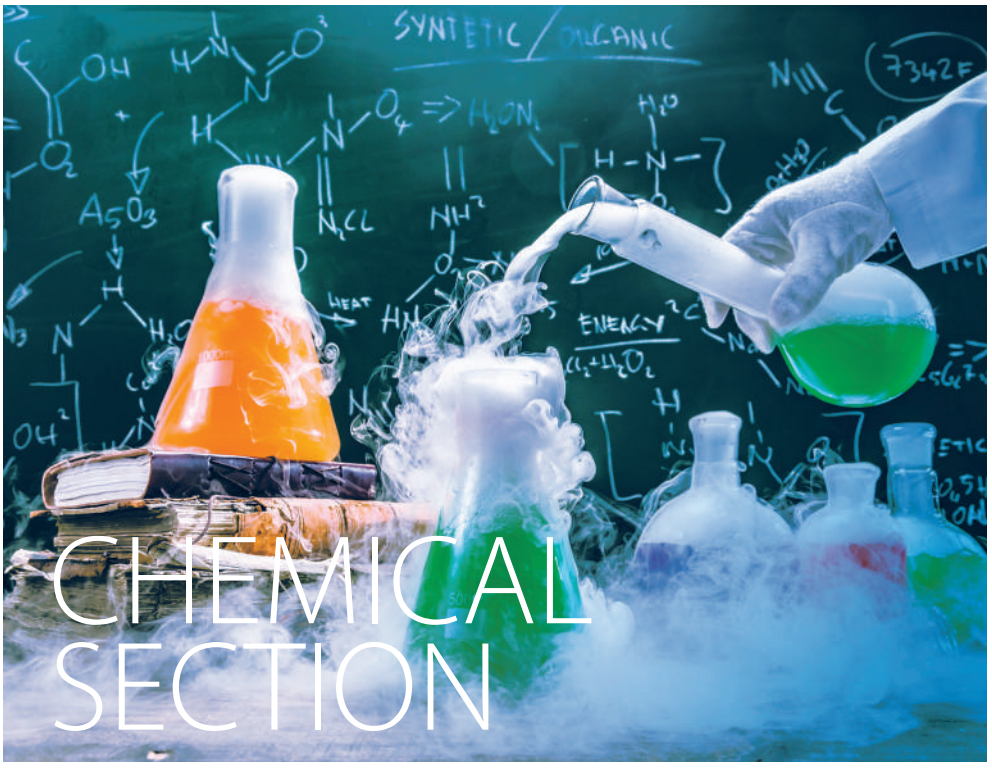
In view of the implementation of QCOs on Footwear creation of test facilities is in full swing in Mechanical & Chemical labs.



Facilities Available

ERL has been designated as Centre of Excellence (CoE) for steel and cement products. Mechanical section has complete test facilities for cement, plywood, toys, steel, jute and some of the footwear products.. ERL is the only BIS Lab having complete testing facility of Jute products. If we classify the facilities into product groups it will be majorly as follows:



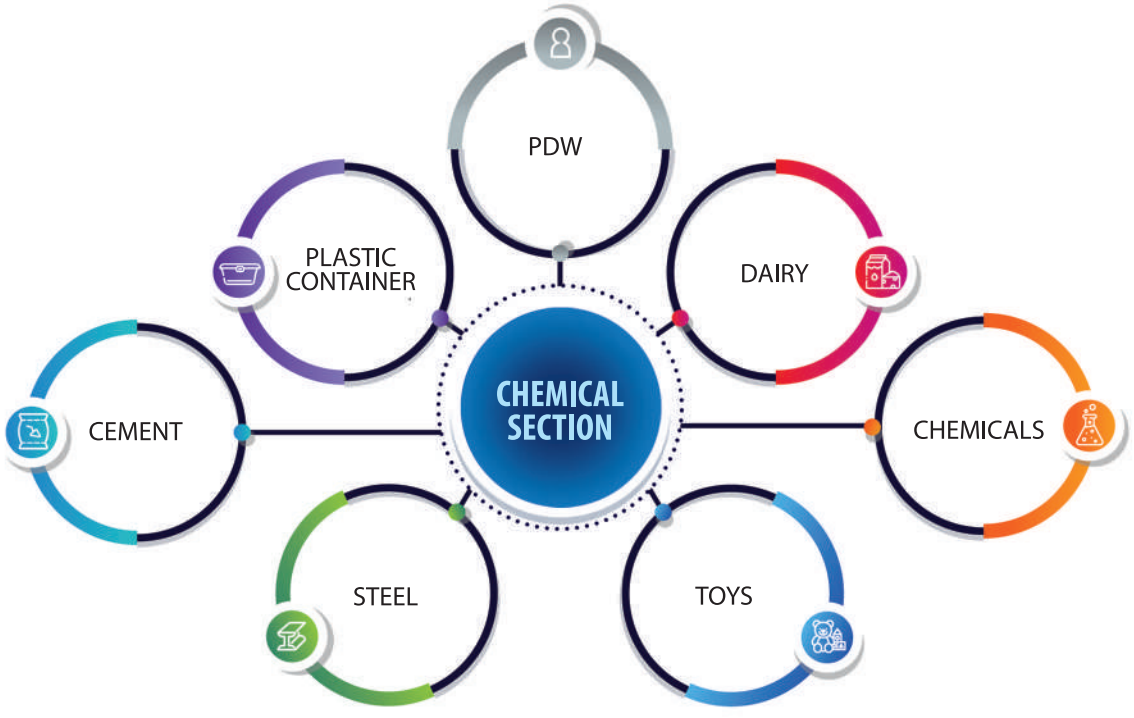


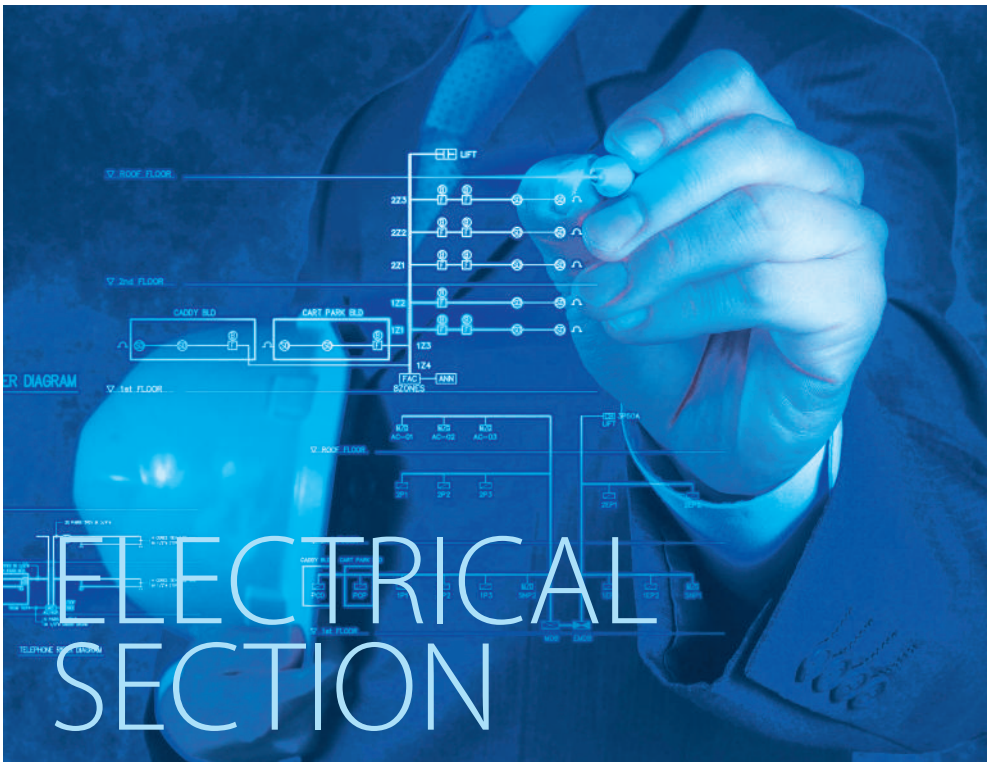
CHEMICAL SECTION

Facilities Available

The laboratory's scope is extensive, and it is continuously striving to expand its range of test facilities. The following is a list of products for which the lab provides available testing capabilities:

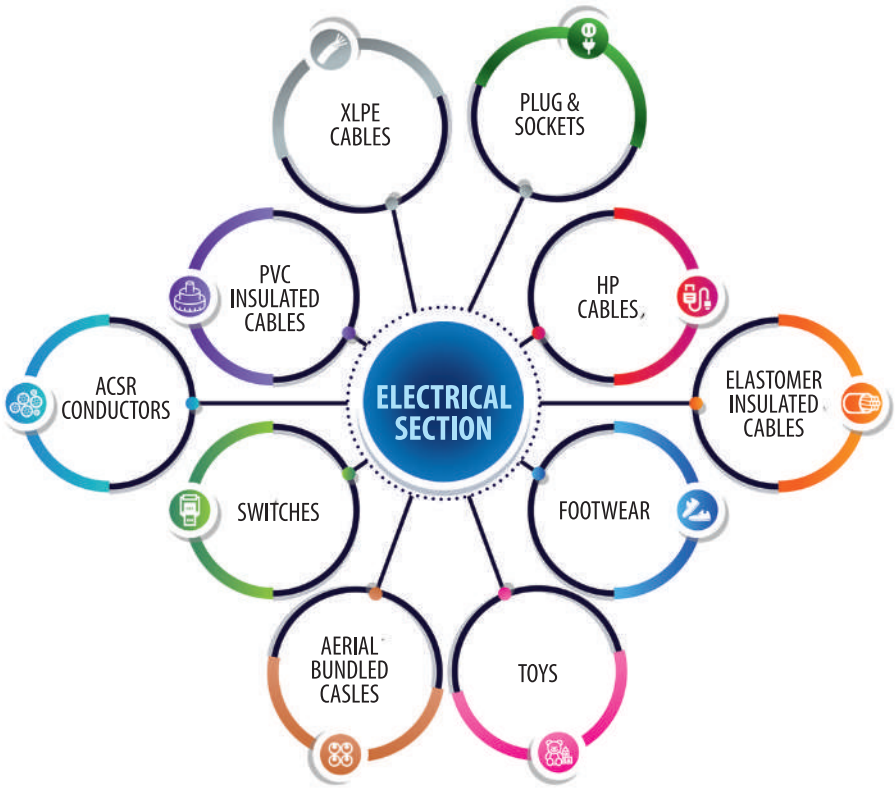
Packaged Drinking Water | Packaged Natural Mineral Water | Drinking water | Container for PDW (Specific migration, overall migration & Material Test) | Feeding Bottle | Skimmed Milk Powder | Rosogolla | Gulab Jamun | Plain carbon , Low alloy and high alloy steel | Cement (OPC, PPC, PSC, Fly ash, Cement Clinker, White Portland cement, Oil well cement etc.) | Aluminium alloy | Copper alloy (Brass, Bronze, copper conductor) | Toy (Migration of elements) | Bleaching Powder | Shoe Polish | Sulphuric Acid | Cotton Gauze | Crepe Bandage | PVC and PE Pipe | Woven sack | Caustic Soda | Gypsum | Food colour | Plywood | Disinfectant fluid | Biscuits | Alumino Ferric | Gland Packing-Jute Hemp





Facilities Available

PVC insulated cables upto 750V | PVC (Heavy Duty) Cable upto 1100/3300 V | XLPE insulated cables 1100V and 3.3 to 33kV | Aluminium conductors for overhead transmission purposes | Cables for motor vehicles | Low carbon galvanized steel wires|Formed wires and tapes for armouring of cables| EC Grade Aluminium Rods | Shot firing cable | Elastomer insulated cables | Aerial bunched cables | Galvanized strand for earthing | Footwear | Safety of electrical toys | Plugs & socket outlets | Switches for domestic purposes



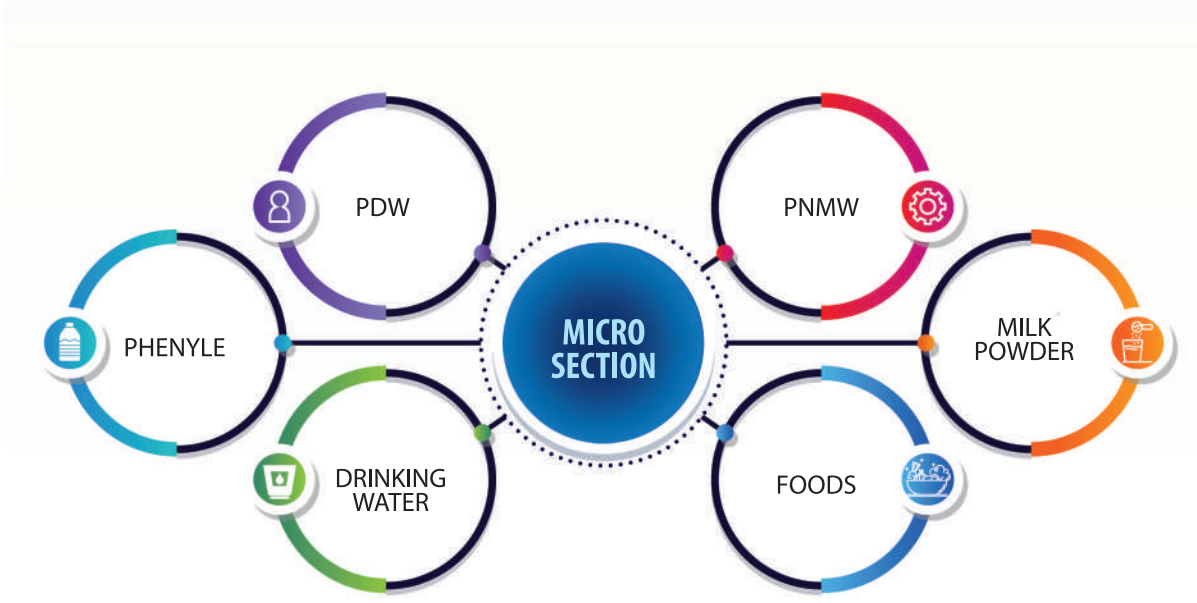
MICROBIOLOGY SECTION

Facilities Available

Initially the test section was created to test PDW samples against micro biological parameters, however with continuous efforts during recent times new products have been brought under the ambit of the test section so as to ensure that the products available are microbiologically safe.

Test ficility is available for the following product :

Packaged Drinking Water | Packaged Natural Mineral Water | Skimmed milk powder (standard grade) | Skimmed milk powder (extra grade) | Disinfectant fluids, phenolic type specification | Flavoured milk specification | Whole milk powder - specification | Packaged pasteurized milk specification | Sterilized and ultra-high temperature sterilized milk specification | Dahi specification | Paneer specification | Packed gulab jamun specification



Facilities Available

In 2000, the Indian government introduced the Hallmarking scheme for gold and extended it to silver articles in 2005. The Bureau of Indian Standards (BIS) established Referral Assay Laboratories to test samples under these schemes. BIS's Eastern Regional Laboratory also set up a Referral Assay Lab (RAL) in 2019 for hallmarked gold jewellery and artefacts following IS 1417:2016 standards.

Gold samples are tested using X-ray fluorescence spectroscopy and Fire Assay methods, involving stages like cupellation and parting to remove impurities and determine the gold content. In 2020, ERL RAL had a monthly testing capacity of 70-80 samples, but with additional resources and manpower, it increased to 700 samples per month (an 8-fold increase). In May 2022, ERL RAL became the first BIS lab to exceed 800 monthly test reports, issuing 804 in that month.

It was observed that the testing personnel are prone to a prolonged exposure to the lead fumes during the charging of samples in cupellation furnace. Since the testing of multiple samples (usually a batch of 10 samples) is carried out simultaneously and therefore, all the samples are charged into the furnace one by one. It increases the total charging time in the cupellation furnace. This results in a lead fume exposure time of approximately 5 mins. The Referral Assay Lab of ERL purchased an cupellation feeder for charging all the samples simultaneously into the cupellation furnace. After the use of this feeder, now the lead exposure time has been decreased drastically from 5 minutes to 10 seconds.

Use of Full-face Respirators and PPEs for enhanced safety of testing personnel: For ensuring better safety of testing staff, full face respirators were procured in RAL for each testing personnel. These full face respirators helps testing personnel in avoiding the direct exposure with hazardous chemical fumes.

Facilities Available

At the heart of the BIS Eastern Regional Laboratory's operations lies its Quality Assurance (QA) Department, committed to upholding the highest standards of accuracy, reliability, and customer satisfaction. Here's a concise overview highlighting its core functions:

1. **Ensuring Accuracy and Reliability**: The primary objective of the QA section is to safeguard the accuracy and reliability of test results issued by the Eastern Regional Laboratory (EROL). This is achieved through meticulous participation in various Internal QA, Inter-Lab Comparison, and Proficiency Testing programs, ensuring that testing processes meet stringent standards and yield dependable outcomes.

2. **Documentation and Compliance**: The QA department plays a crucial role in maintaining and updating the Quality Manual, Quality Procedures, and Quality Formats. These documents serve as the cornerstone of the laboratory's technical documentation, ensuring that all activities adhere to established quality protocols and regulatory requirements.

3. **Facilitating Skill Development**: Beyond internal processes, the QA department actively contributes to skill development and scientific advancement by organizing exposure visit programs for industry and academia. By fostering collaboration and knowledge exchange, these initiatives nurture a culture of continuous learning and professional development within the community.

4. **Complaint Redressal**: Addressing customer concerns and ensuring satisfaction is integral to the QA section's responsibilities. Whether it's resolving issues related to testing procedures or addressing feedback, the department handles complaint redressal with diligence and efficiency, further enhancing the laboratory's reputation for reliability and service excellence.

In essence, the Quality Assurance Department of BIS Eastern Regional Laboratory serves as the cornerstone of quality management, ensuring that every aspect of laboratory operations—from testing procedures to documentation and customer engagement—is meticulously monitored and optimized to deliver superior results and uphold the laboratory's commitment to excellence.

ILC / PT Details

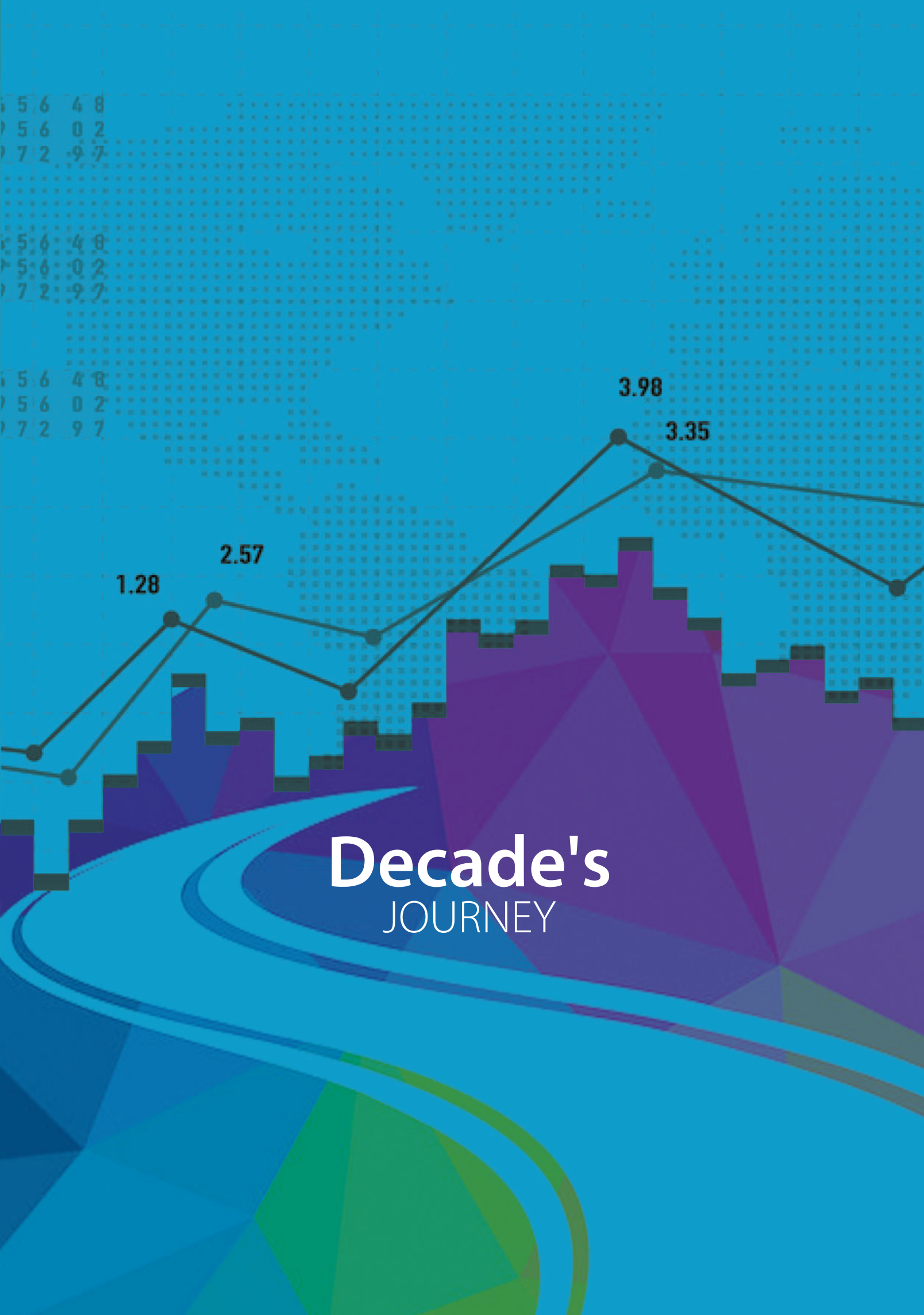
ERL has successfully participated in Inter Laboratory Comparison and Proficiency Testing Program for the following product groups in 2022-23:

ILC DETAILS

Discipline	Product Name	Number of Parameters Participated
Mechanical	Plywood, Steel, Cement & Plastics	7
Chemical	Plastic Containers, Food Products, Cement	10
Electrical	Aluminium Conductor, PVC Insulated Wire, Steel Wire	9
Microbiology	Packaged Drinking Water	3

PT DETAILS

Discipline	Product Name	Number of Parameters Participated
Chemical	Lather	1
Electrical	Solid Aluminium Conductor Cable	10



Decade's
JOURNEY

Since its establishment in 1968, ERL has consistently taken the lead in testing products falling under the purview of the BIS Conformity Assessment Scheme. ERL's prominence in testing products is attributed to the Eastern region's concentration of industries like Plywood, Steel, Cement, and Jute, which has resulted in a continuous influx of samples over the past three to four decades. The recent diversification of ERL's product portfolio includes the inclusion of items such as Packaged Drinking Water (PDW), Footwear, Plastics, Toys and Dairy Products. This expansion has been driven by the implementation of various Quality Control Orders (QCOs), prompting ERL to consistently develop new testing facilities aligned with its specialized areas. Notably, ERL holds the distinguished status of being the Centre of Excellence for testing Steel and Cement, and it serves as the Nodal laboratory (jointly with the Central Lab of BIS) for testing Footwear.

New Facilities

ERL has consistently taken the lead in expanding its testing capabilities and establishing new facilities. This commitment led to the setup and operationalization of the Referral Assay Lab (RAL) and the Microbiology Lab in 2019. The RAL was inaugurated on August 20th, 2019, by Smt. Surina Rajan, DG BIS.

Starting from 2019, there has been a concerted effort to modernize and automate ERL's facilities, resulting in the successful completion of Phase-1 of this modernization initiative. Notably, ERL has established a cutting-edge Instrumentation Lab and an advanced Metal Hardness testing Lab, both of which serve as significant attractions for exposure and educational visits by industries and students alike. The inauguration of the Instrumentation Lab in 2021 by Sh. Pramod Kumar Tiwari, DG, BIS, further propelled the laboratory's modernization endeavors.

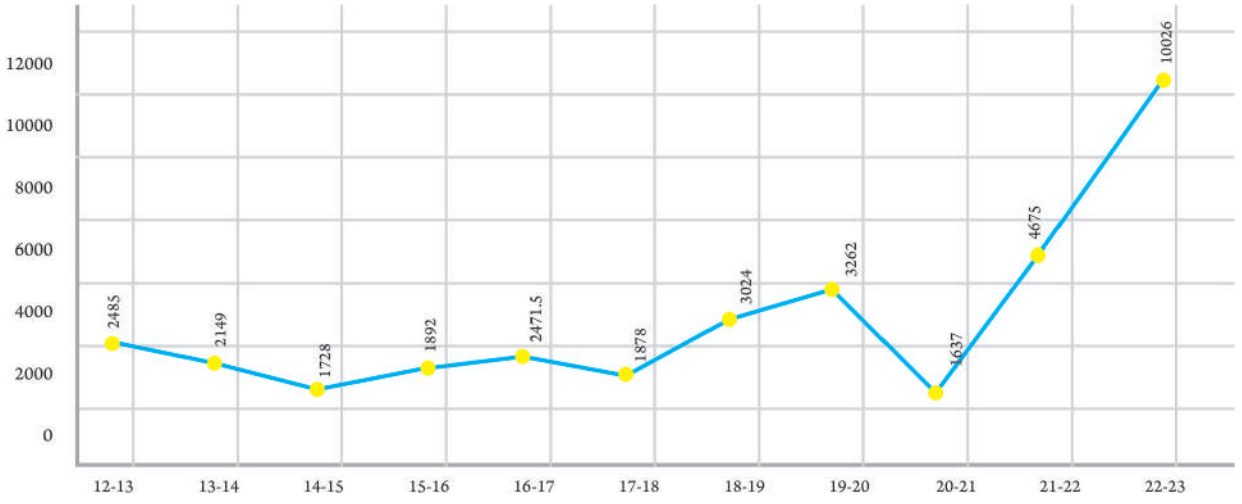
Testing of Samples

In the post-COVID era, ERL experienced a significant surge in sample flow, particularly in categories like Packaged Drinking Water (PDW), Steel, Cement, Plastics, Toys, and more. As a consequence, there has been a substantial growth in the output of test reports. This period also witnessed a notable shift from conventional testing methods to instrument-based methodologies, contributing to the increased output. The issuance of test reports has witnessed an exponential rise, with the count of issued reports soaring four-fold from 2,458 in the fiscal year 2012-13 to an impressive 10,026 in 2022-23. Notably, the Referral Assay Lab has experienced an even more substantial increase, with the issuance of test reports increasing by over seven times, escalating from fewer than 1,000 in 2019 to an impressive 7,199 in the fiscal year 2022-23.

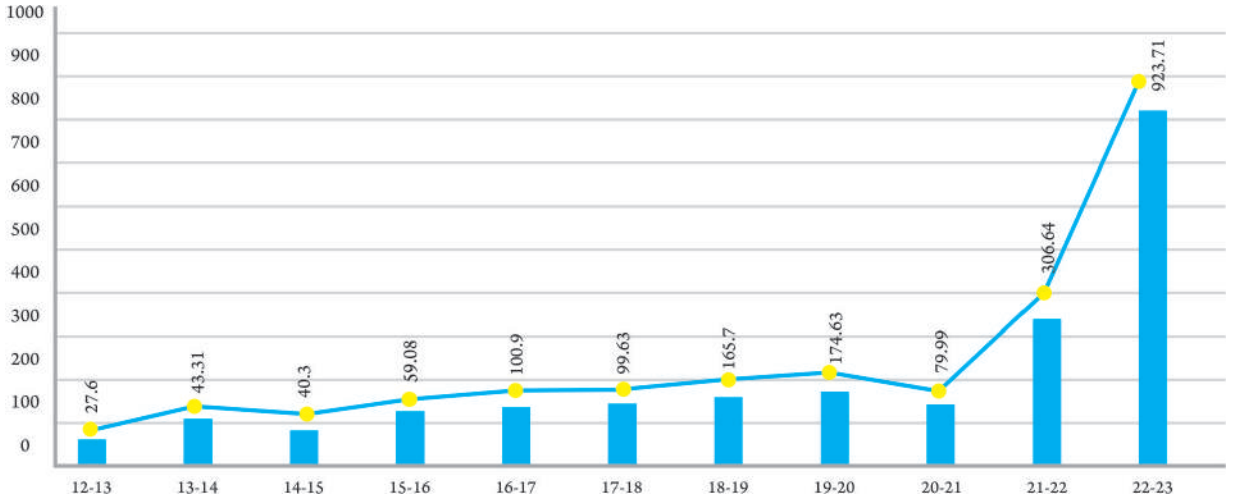
NOTIONAL INCOME

ERL does not engage in any form of commercial testing or calibration services. BIS laboratories generate a notional income value derived from the samples analyzed and the corresponding testing fees for each sample. In the fiscal year 2012-13, ERL generated a theoretical income of Rs 27.6 lakh, which has witnessed an impressive growth of nearly 20 times, reaching Rs 923.71 lakh in the fiscal year 2022-23.

SAMPLE TESTED



NOTIONAL INCOME (In Lakhs)

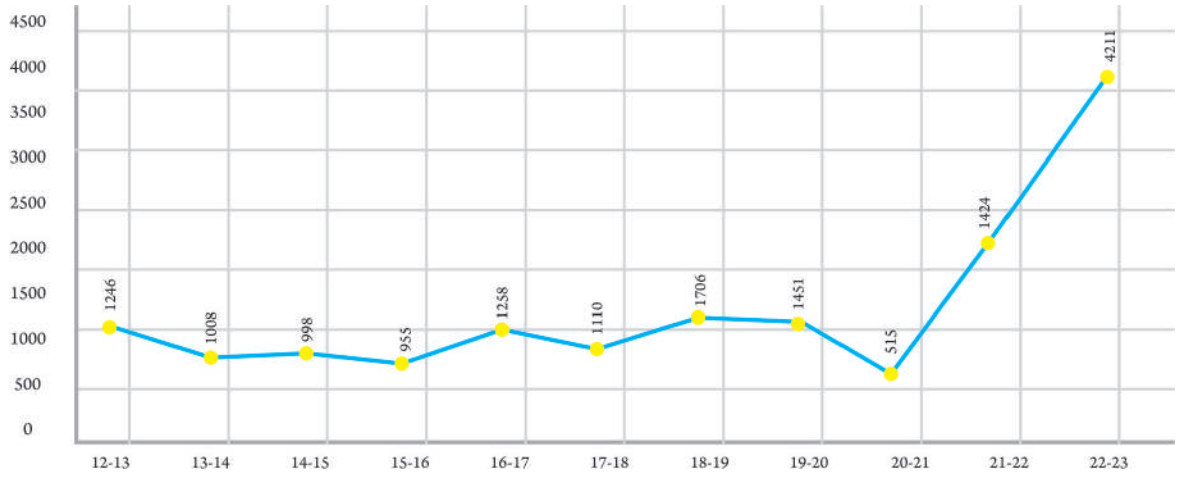


MECHANICAL SECTION

Within ERL, the Mechanical Section consistently stands out as the most prolific contributor in terms of output. Through bolstering its existing testing infrastructure, augmenting manpower, and establishing new testing facilities, this section has successfully amplified its output from 1246 reports in the fiscal year 2012-13 to an impressive 4211 reports in 2022-23. Alongside its primary focus on Steel, Plywood, and Cement, the Mechanical Section has expanded its scope to encompass new products such as Toys and LPG cylinders, aligning its services to meet the needs of both Industries and business establishments associated with BIS in the Eastern region.

The Notional Income generated by Mechanical Section has also achieved new heights due to increased testing and output due to automation.

SAMPLE TESTED



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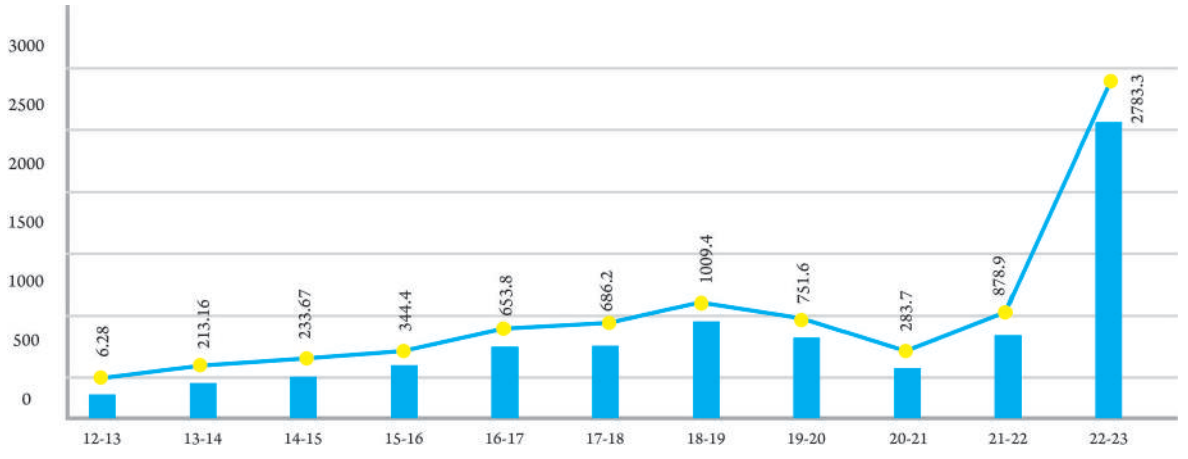

CHEMICAL SECTION

Historically, chemical analysis has predominantly relied on conventional methodologies. Despite this, the Chemical Section's output has consistently exceeded that of other BIS laboratories by a noteworthy margin. The integration of automated tools and instrument-based approaches has been a transformative step for the Chemical Section. This shift has resulted in impressive accomplishments, evidenced by the substantial increase in Test Report (TR) output and notional income. Consequently, the Chemical Section ranks among the top performers in terms of TR output and Notional income within the BIS laboratories.

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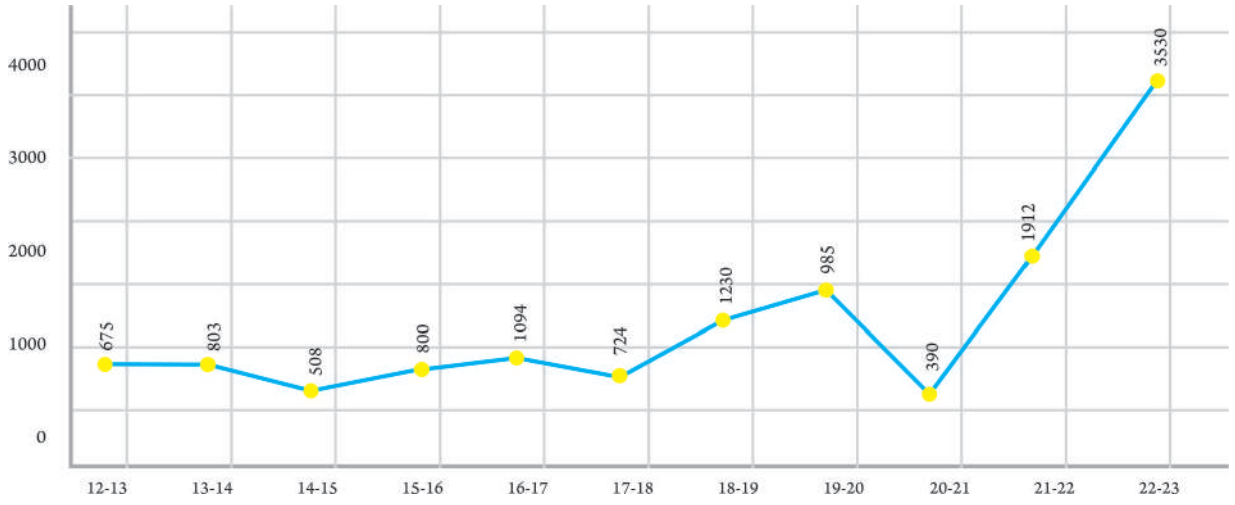
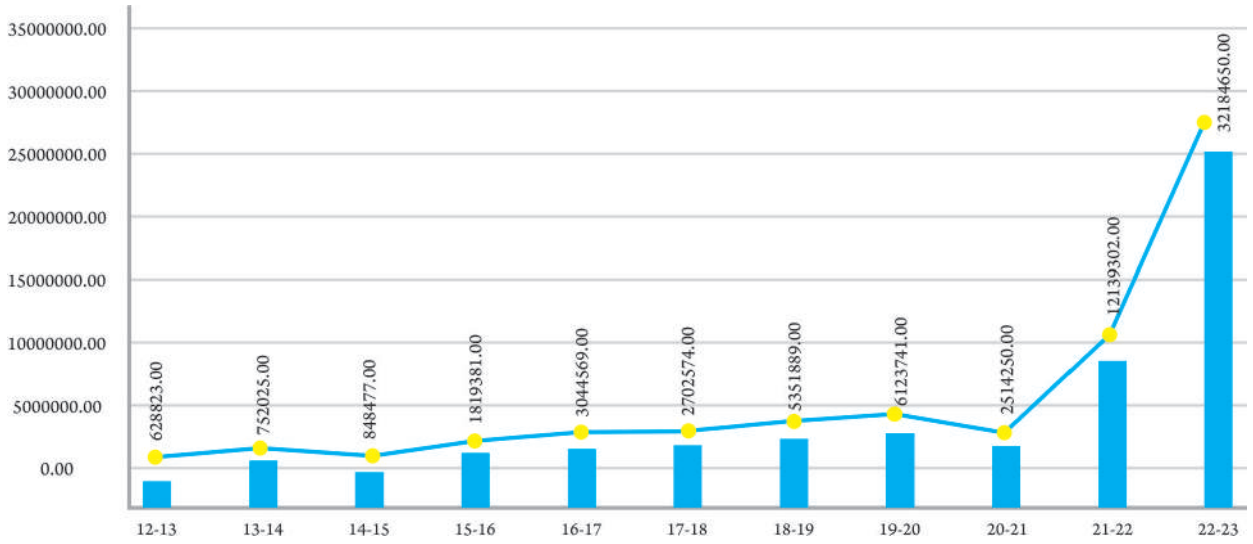


NOTIONAL INCOME (In Lakhs)



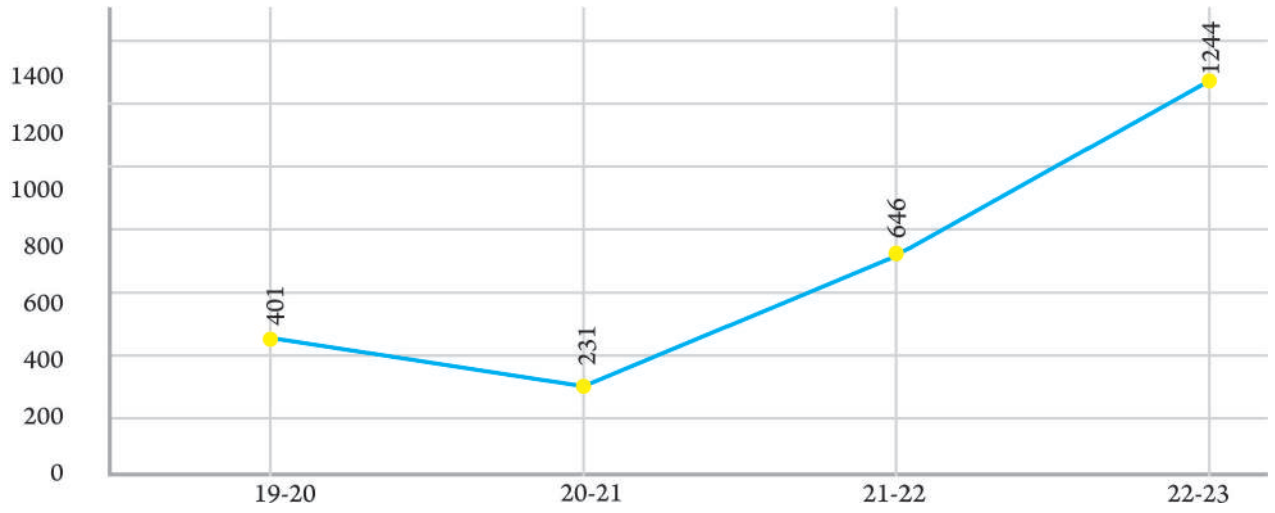
MICROBIOLOGY SECTION

Established in 2019, the Microbiology Section at the Eastern Regional Laboratory initially focused on testing Packaged Drinking Water (PDW) samples, particularly emphasizing microbiological parameters. However, over recent years, the section has expanded its purview to address public health concerns associated with food items, notably Dairy products, and Drinking Water. This expansion is aimed at meeting the demands of Industry and enhancing safety measures. As part of these efforts, additional testing facilities were introduced to accommodate Bio-pesticides and Disinfectant fluids.

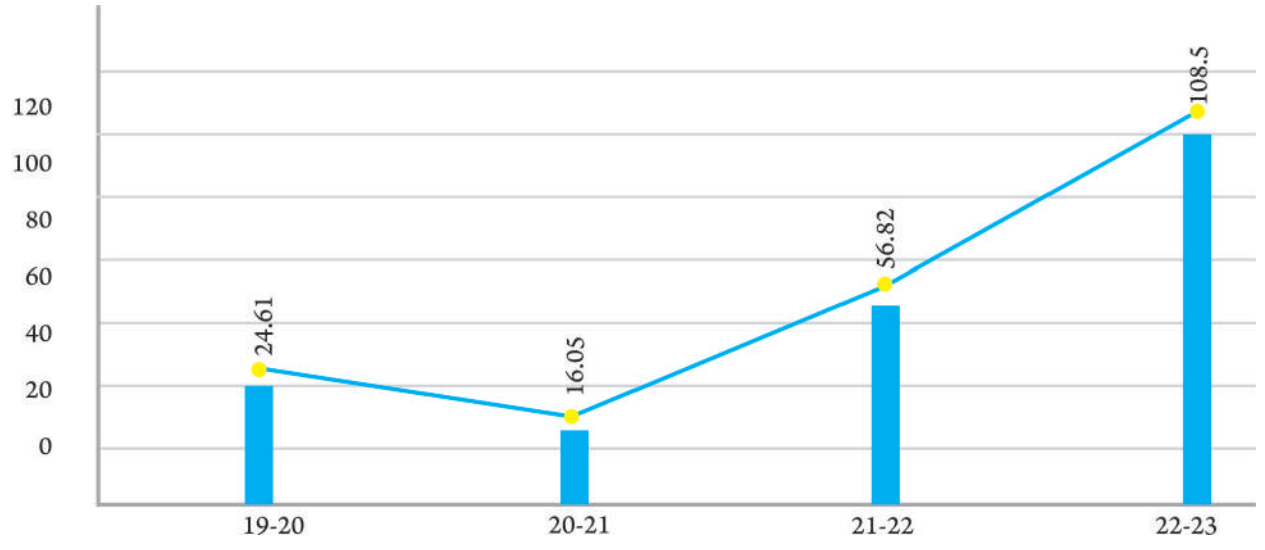
To date, the Microbiology Section has conducted tests on more than 2500 samples, amounting to a notional value exceeding Rs 2.05 crores. The revenue generated as notional income has effectively allowed BIS to recuperate the expenses incurred in its establishment within a mere four years of operation.

A detailed breakdown of the samples tested and the corresponding notional income generated is presented below on a yearly basis:

SAMPLE TESTED



NOTIONAL INCOME (In Lakhs)



REFERRAL ASSAY LAB

The primary intent behind establishing the Referral Assay Laboratory was to provide robust support to the Hallmarking scheme. Over time, this division has progressed beyond its initial role, acquiring expertise not only in evaluating yellow gold jewellery samples received from Branch Offices as part of Market surveillance initiatives, but also dedicating efforts towards continuous capacity enhancement and the automation of testing infrastructure.

To date, the Referral Assay Laboratory has analyzed more than 9400 samples, equating to a notional value surpassing Rs 1.60 crores. This cumulative notional income has proven instrumental in enabling BIS to recover the expenses incurred during the creation of the RAL within a span of four years since its inception.

Here's a detailed account, categorized by years, depicting the number of samples tested and the corresponding notional income generated, with the lab achieving highest figures since its inception in 2022-23:

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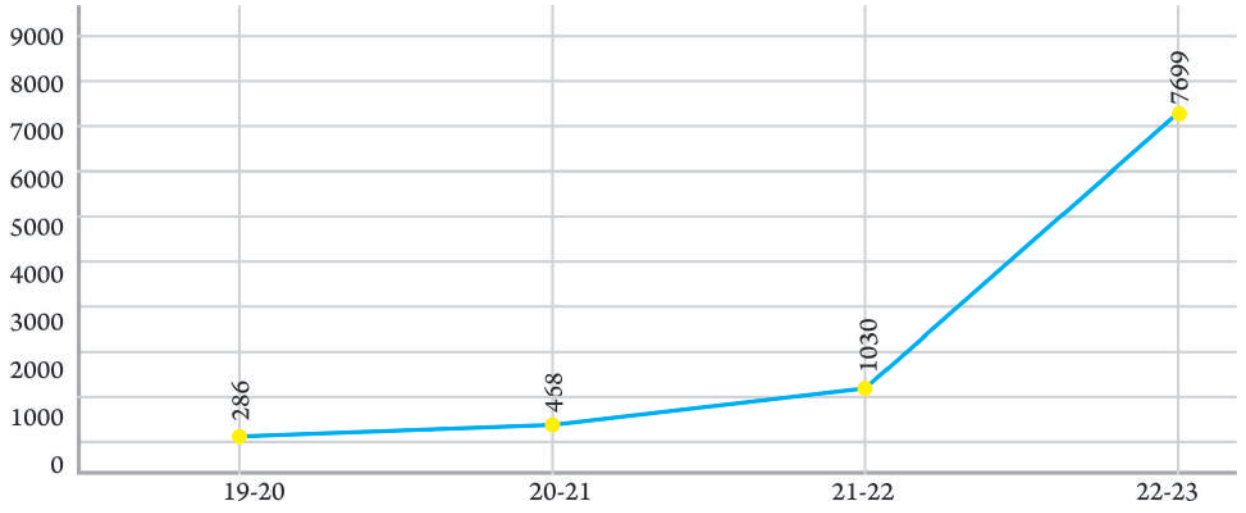
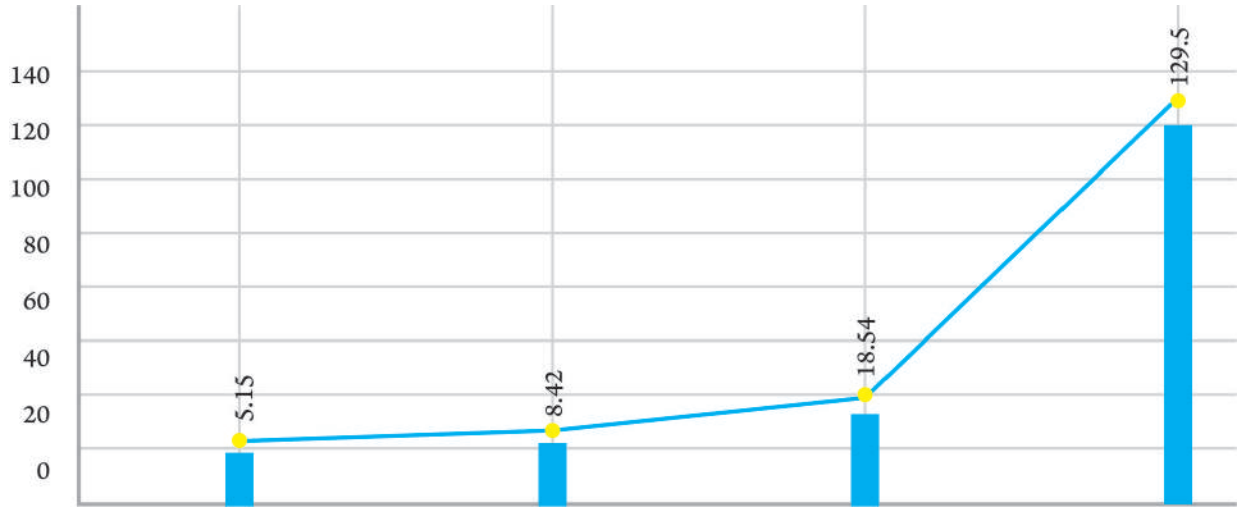


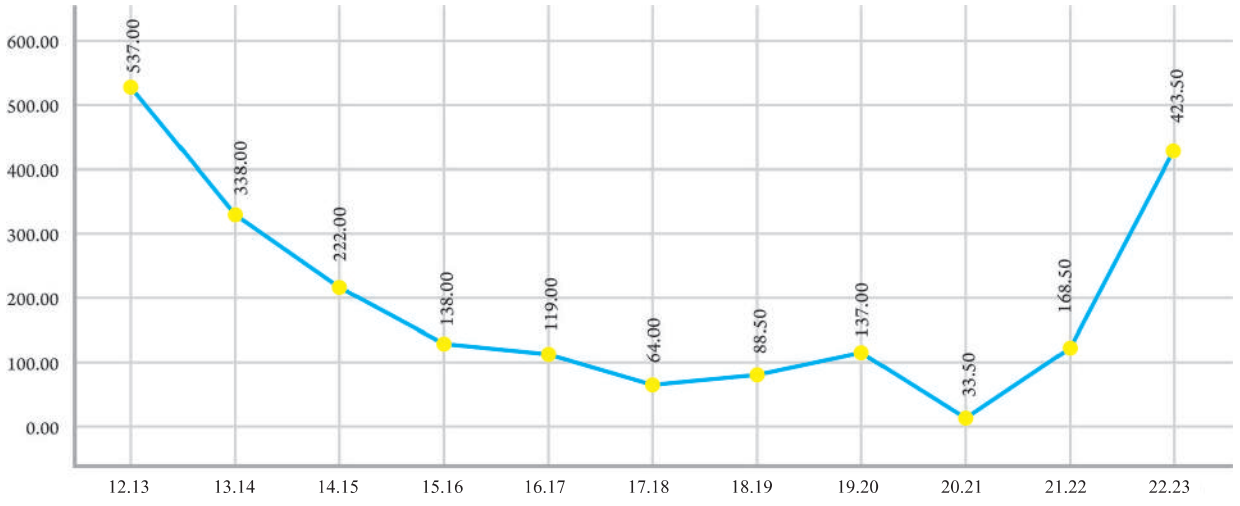
NOTIONAL INCOME (In Lakhs)



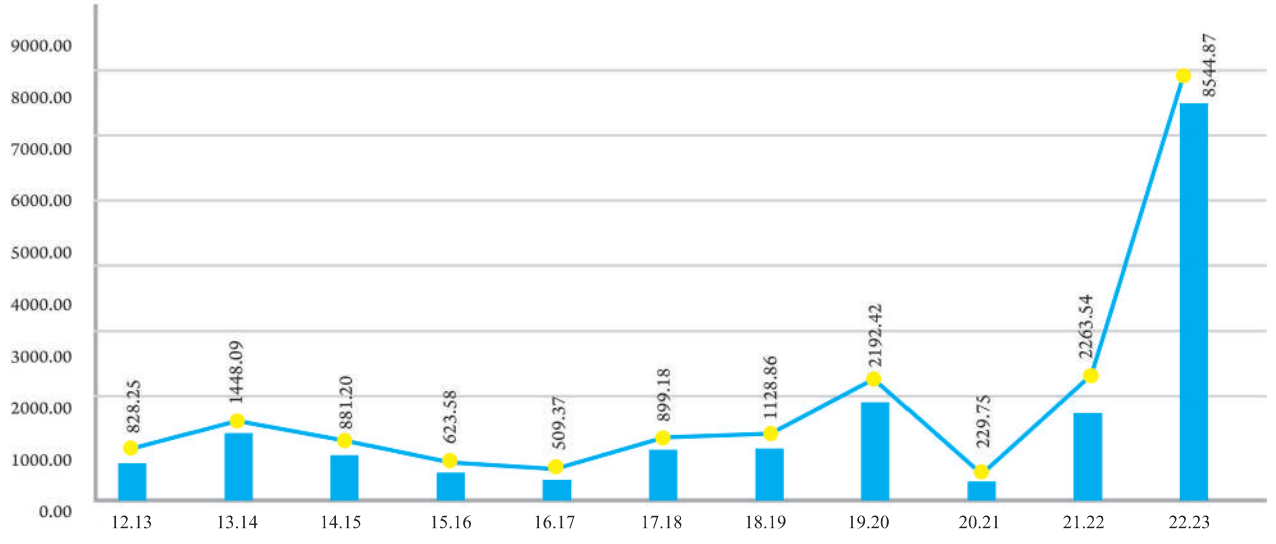
ELECTRICAL SECTION

The Section's role is noteworthy, particularly in its provision of support to the Electrical sector in the Eastern region. Moreover, the Section has consistently shouldered the added responsibility of assisting other Branch Offices & BIS laboratories as and when needed.

SAMPLE TESTED



NOTIONAL INCOME (In Lakhs)



MAJOR
Achievements

MAJOR ACHIEVEMENTS

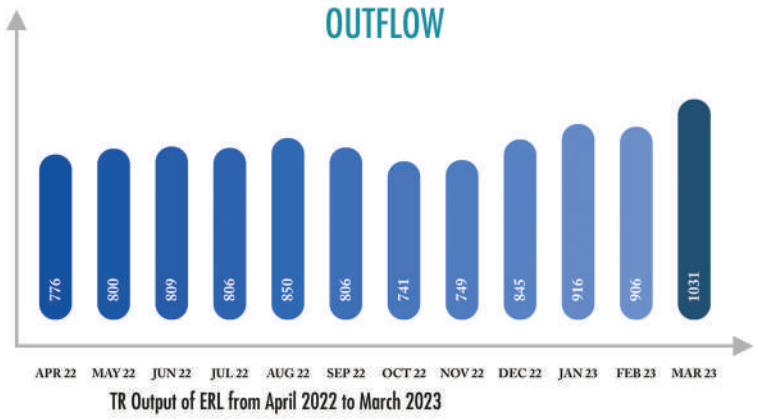
First Regional/branch Lab to issue 10000+ Test Reports In Year

ERL through its extensive modernisation program, planned approach towards creation of new test facilities and augmentation in manpower, has been able to achieve record number of Test Reports in 2022-23. The year saw ERL achieving 10026 TRs the first time any Regional or a Branch lab has been able to break the 10K barrier.

Head (ERL) receiving award from DG BIS

First Regional/branch Lab to Issue 1000+ Test Reports In a Month

ERL has been able to achieve 1000+ reports for the month of March 2023 the first by any Regional or a Branch lab and was given the Award of Excellence in Lab category for this achievement



TR Output of ERL from April 2022 to March 2023

The Notional Income generated by RAL & Micro lab since their inception in 2019 has enabled BIS to recover the cost of its creation in 2022-23 within its 4 years of operation.

INAUGURATION

DG BIS Inaugurating the Calibration Lab at ERL

The calibration laboratory of Eastern Regional Laboratory was inaugurated by Shri Pramod Kumar Tiwari, DG BIS on 16th Nov 2022. The primary objective of the calibration lab was to develop in-house expertise to calibrate the weighing balances in-house using master calibrators having direct traceability to NPL.

DG BIS inaugurating the Calibration lab at ERL

Special Campaign 2.0

As part of 'SWACHHTA SPECIAL CAMPAIGN 2.0 the Department of Consumer Affairs, Govt. of India, awarded the Second Prize to ERL under Laboratory category.

Internship Program

Eastern Regional Laboratory in 2022-23 launched the Internship programs for Under-graduate & post-graduate students. A total of 11 students from Mechanical, Electrical, Chemical and Microbiology disciplines have successfully completed their internship in the year 2022-23.

First batch of interns of ERL from Sudhir Chandra Sur Institute of Technology

In order to support the conformity Assessment Scheme, ERL has created new test facilities for many ISs being brought under mandatory certification through various Quality Control Orders issued from time to time. Some of the significant ones are:

a) Anions in PDW using Ion Chromatography.

b) Specific migration & Material test using ICP-MS & FTIR respectively for containers (IS 15410).

c) Test facilities for LPG cylinders

d) Test facilities for Footwear.

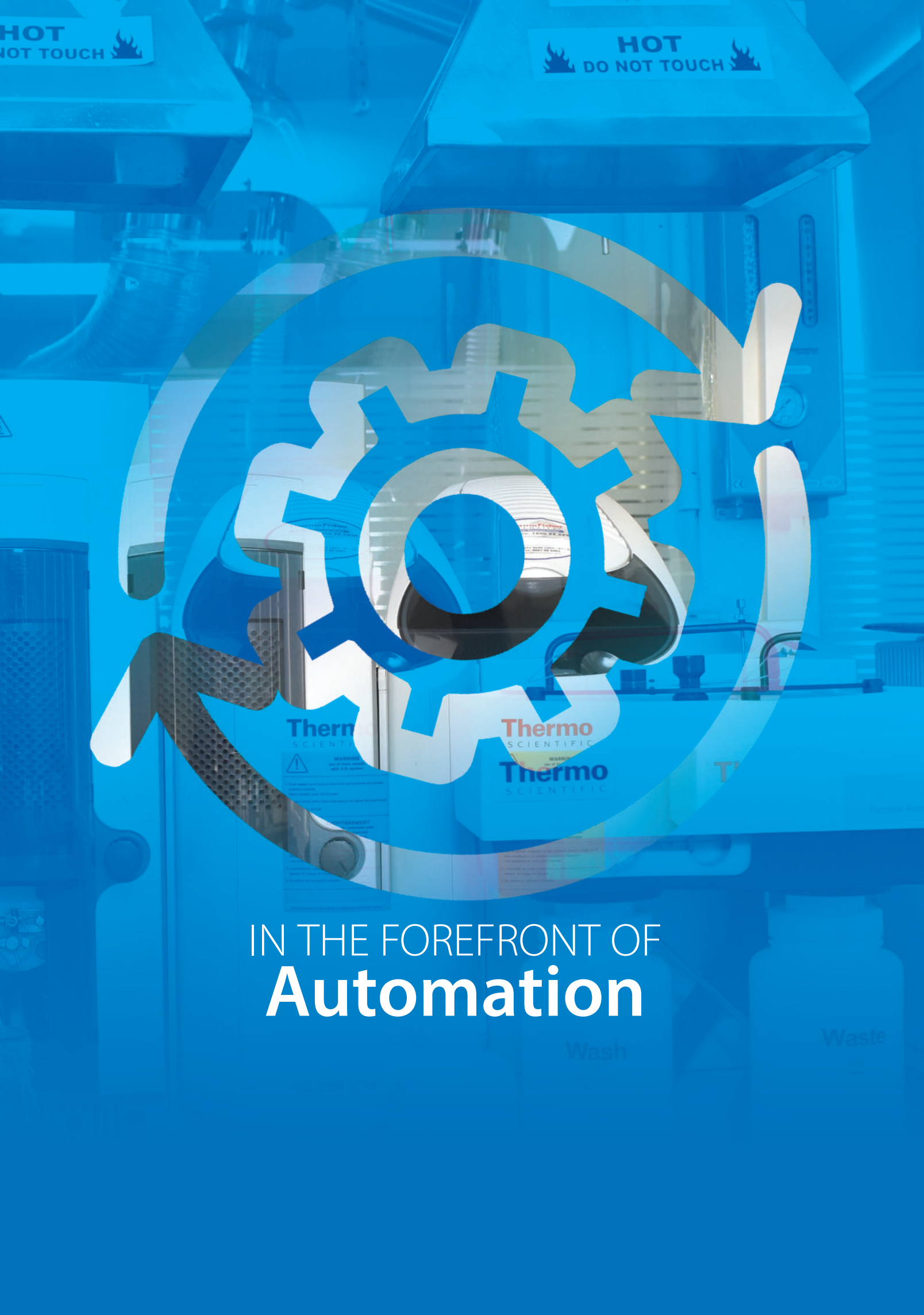
e) Microbiology Section has created complete test facility for 9 ISs pertaining to Dairy products, including for Packed Rasogolla (IS 4079), Burfi (IS 5550), Packed Gulab Jamuns (IS 11602) and also for Disinfectant fluids.

Referral and Assay Lab of ERL has successfully undertaken study on 240 samples for the using of XRF as an alternative to Fire assay and recommendations were shared with Hallmarking Department, BIS.

Referral and Assay Lab of ERL has also undertaken a study for pollutants being emitted during fire assay on yellow gold samples, wherein it was found that the laboratory was complying with the emissions norms.

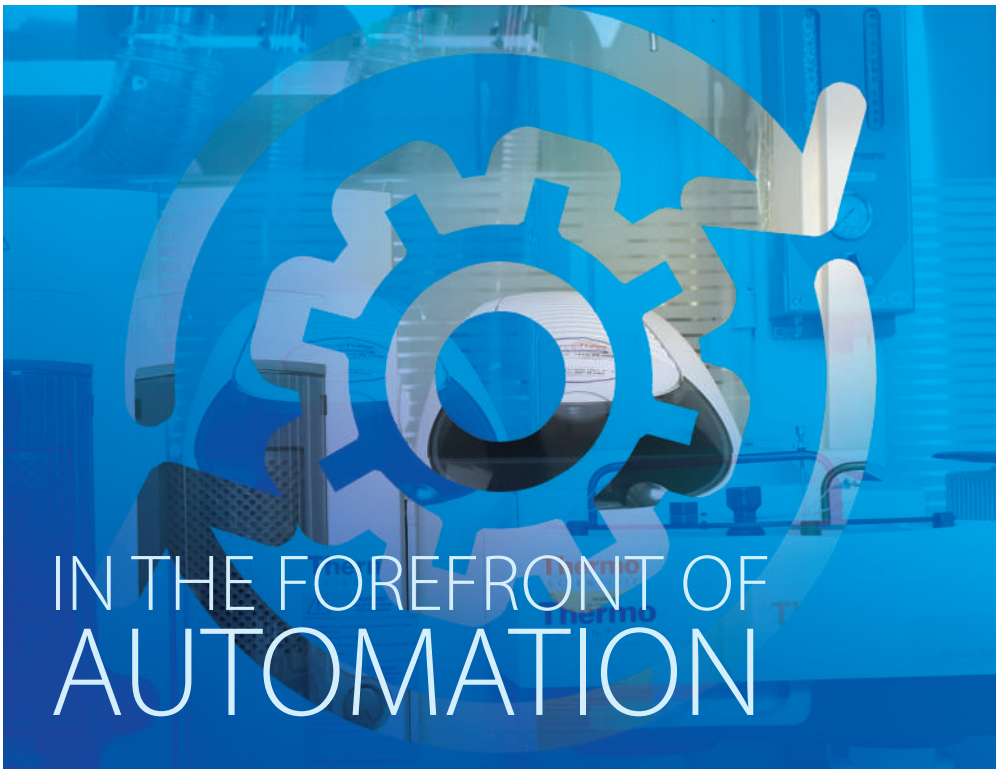
Officers of ERL have carried out Action Research Projects on different Standards as assigned by TNMD. The details of ARPs carried out are:

Scientific Officer	ARP Topic
Manojit Mondal, Sc D	IS 14322 Corrossion of Metals and Alloys, IS 13177 Passivation of Stainless Steel Parts
K S Rao, Sc C	IS 10810 Part 63- Smoke density of bunched cables under fire conditions. IS 10810 Part 62- Flame retardence rest on bunched cables under fire conditions
Shantanaba Majumder, Sc C	IS 13114: 1991, Forged brass gate, Globe and check valves for water work purposes
Tarique Sajjad, Sc B	IS 1764: 1961, Specification for trough compass
Abhijit Singh, Sc B	Revision of IS 14300: 1995 Neem based EC Containing Azadirachtin_BIS Kolkata
Ankit Bhumla, Sc B	IS 2839: 1964, Specification for industrial stoneware



IN THE FOREFRONT OF

Automation



IN THE FOREFRONT OF AUTOMATION

Automating testing procedures not only shortens testing times but also enhances accuracy by minimizing human intervention. Moreover, it facilitates easy data accessibility, storage, and retrieval. The issuance of an increasing number of Quality Control Orders (QCOs) by different Ministries has substantially expanded the scope of Mandatory Certification, encompassing numerous products. While several Steel and Cement products are already under mandatory certification, more continue to be added through consistent issuance of QCOs.

Given ERL's role as the Centre of Excellence (CoEx) for testing Steel and Cement products, the laboratory bears a heightened responsibility to establish extensive testing facilities for these items. Consequently, there's an urgent need to augment testing capacity and reduce testing durations to achieve optimal productivity within defined timeframes.

ERL has already undergone significant transformations, especially in terms of modernizing and automating testing infrastructure, particularly in Food, Metal & Cement testing.

Automatic Drop Tester

The "Drop test" facility for Container testing has been automated and motorised with the testing being performed with the click of a button.

Automated Compressive Strength Testing Machine

Mechanical Section

The Mechanical Section, in particular, has undertaken substantial equipment upgrades and automation as outlined below:

Automatic Blaine Apparatus

The Fineness testing & Compressive Strength of Cement are now automated through computerisation, with data storage & retrieval also computerised.

The dimensional measuring instruments like Vernier caliper, Micrometer, etc have been wifi-enabled and the value gets incorporated in LIMS Software at the click of a button.

Wifi enabled Caliper

Chemical Section

The Chemical Section's Instrument Laboratory boasts an array of cutting-edge equipment, such as LC-MS/MS, GC-MS/MS, ICP-MS, IC and AAS. These instruments operate in a fully automated mode, functioning continuously round the clock, free from the need for human intervention. This operational setup has led to a remarkable surge in sample testing.

Testing personnel in Chemical Lab

Post analysis, the resultant data is stored in an uneditable format, ensuring easy retrieval and transmission. This efficient workflow expedites the testing process, facilitating swift completion within a short timeframe. Furthermore, this approach optimizes the allocation of human resources, particularly in areas still reliant on conventional testing methods.

Electrical Section

The Electrical Section is actively working on enhancing and automating its testing capabilities. Notably, the frequency of High Voltage testing for cables has been elevated from 30 samples per month to 50 samples per month.

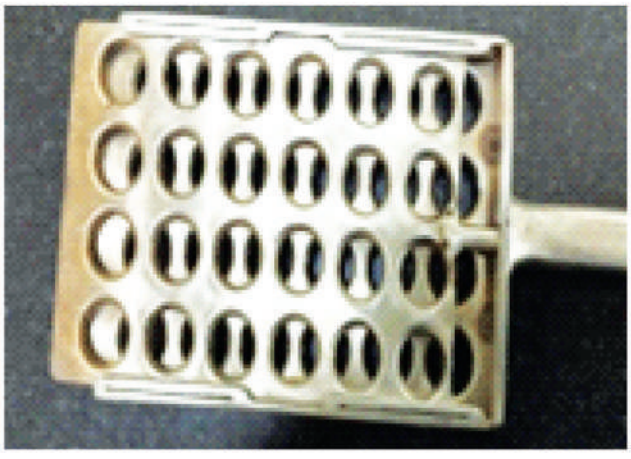
As part of this automation effort, several equipment upgrades are taking place within the Electrical Section. These include the replacement of the Million meg-ohm meter with a Digital Insulation Resistance tester and the replacement of the kelvin double bridge with a Digital micro ohm meter. Additionally, an Automatic cable dimension measuring device is being introduced in lieu of the traveling Microscope. These automation initiatives are complemented by the incorporation of data logging functionalities.


Electrical Lab

RAL Section

In the RAL Section, a semi-automatic sample loader has been introduced for loading samples into the cupellation furnace. This proactive measure aims to minimize the potential exposure of testing personnel to lead fumes, concurrently reducing temperature fluctuations. This advancement in process contributes to an improved batch testing capacity for cupellation.


RAL Section




Semi-automatic sample loader

FOUCUS ON

Sustainability

FOCUS ON SUSTAINABILITY

The United Nations adopted the Sustainable Development Goals (SDGs) as a global initiative. These objectives serve as a comprehensive framework for the worldwide development agenda up to 2030. The Bureau of Indian Standards, serving as India's National Standards body, has also aligned its endeavors with these 17 SDGs.

Laboratories, due to their intensive resource utilization, warrant special attention in terms of sustainability. In light of this, ERL has taken proactive steps to conscientiously reduce the consumption of natural resources. This has been achieved through the implementation of various measures, including:

A. Incorporation of Sensor-based Auto Cut-off Submersibles: Both structures at ERL accommodate overhead water storage tanks, each capable of holding 10,000 liters. With an aggregate occupancy of approximately 100 individuals across both buildings, ERL has strategically installed Sensor-based Auto Cut-off Submersible pumps. This initiative effectively minimizes water wastage by preventing tank overfilling, aligning with SDG 12's principle of Responsible Consumption and Production.

B. Integration of Rooftop Solar Panels: ERL has equipped both of its buildings with rooftop solar panels, generating a monthly electricity capacity of 64 kW. This self-generated electricity is directed into the primary power grid, effectively alleviating strain on conventional electricity supply networks. This initiative generates clean energy devoid of any pollution aligning with SDG 7's principle of Affordable & Clean Energy.

Rooftop solar panels

Annual solar power generation by Solar panels (kWh)

Reducing Environmental pollutants during acid digestions

A. Installation of Scrubber with Fume hoods/Spot Extractors in RAL & Chemical lab.Scrubbers for Fume Hoods in the RAL and Chemical Lab has been installed. These scrubbers function by directing the acidic fumes generated during chemical reactions into an alkaline solution, effectively neutralizing them. Additionally, the fume hoods play a vital role in drawing in the fumes produced by the chemical reactions creating a clean environment for testing.

Spot extractors have been installed in Chemical wet analysis laboratory for betterment of working environment.

A study undertaken has shown that the RAL complies with the State Pollution level norms, who examined the report

The aim of the study was to track the emissions of pollutants occurring during the fire assay examination of gold jewellery or artefacts according to IS 1418.

The study's approach involved recognizing and measuring the pollutants, identifying their origins, and assessing their environmental release both within the laboratory's confines and beyond, manifesting as discharges in liquid and exhaust gas forms.

The study's execution encompassed the collection of samples from various sources, including Spent Acid, Slag from Scrubbers, Wasted Water Slag, Stack Monitoring /Scrubber outlet, as well as the IAQM/Furnace room.

These initiative has helped us to realise that the disposal is actually leading to safe disposal of solid as well as liquid waste and e cleaner exhaust ensuring that the testing personnel work in a cleaner environment. These actions are aligned with SDG Goals 3, 13 & 15 of 'Good health & Well being', 'Climate Action' and 'Life on Land'.

Scrubber System at RAL

Spot extractor at Chemical Wet Analysis Laboratory

B. Reducing Environmental pollutants in Chemical lab

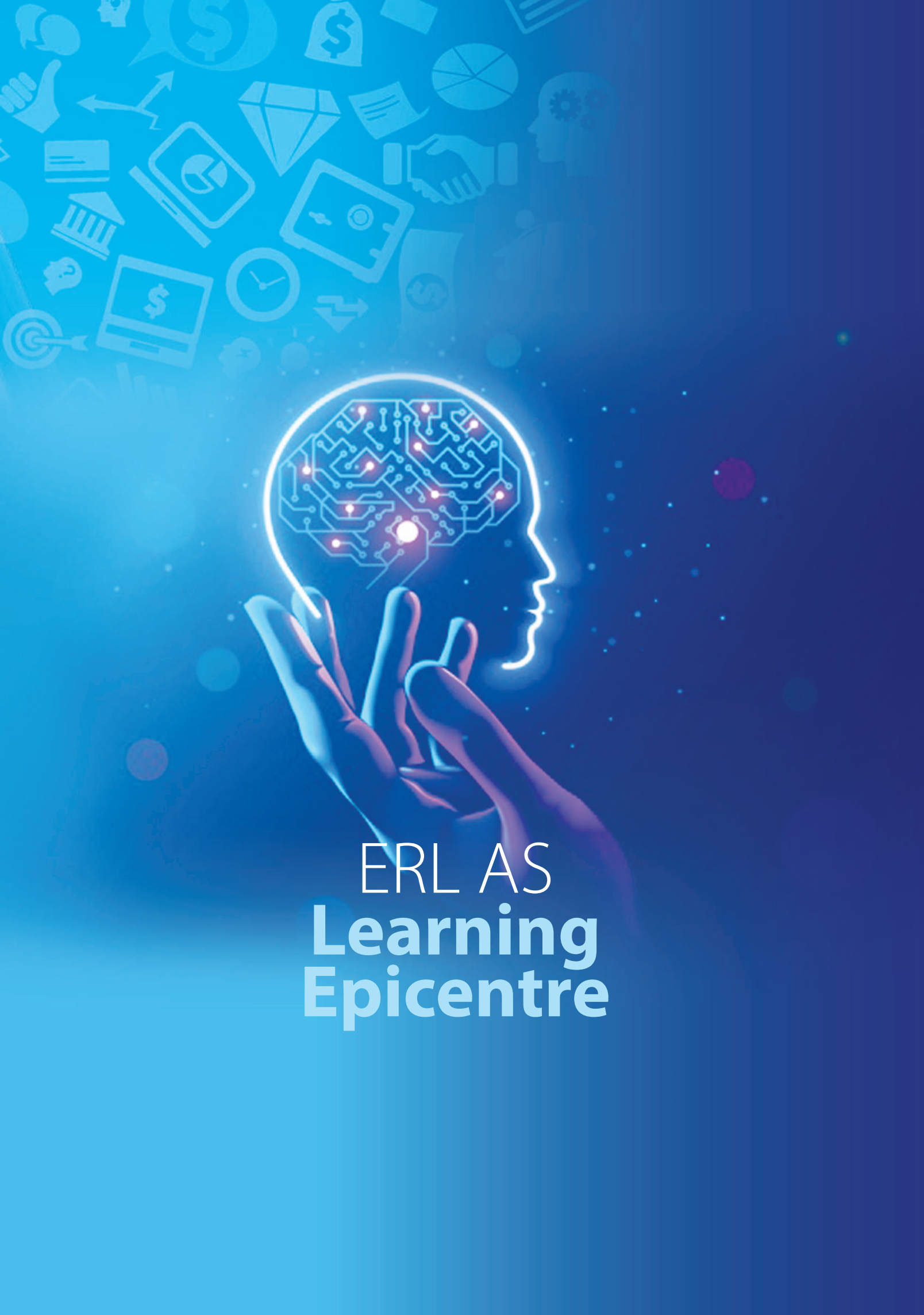
The implementation of automated testing techniques has led to a reduction in chemical consumption, consequently resulting in a significant decrease in the number of pollutants.

This positive environmental impact is further facilitated by:

- The incorporation of non-destructive testing methods within the analytical process.
- The discontinuation of conventional testing procedures that previously relied heavily on the use of chemicals and acids.
- The integration of modern instrumental methods into laboratory analysis.
- A concerted effort to minimize the utilization of natural resources.

These initiatives generates less and cleaner effluents. These will be aligned with SDG goal 12 of 'Responsible Consumption & Production.

Disposal of waste generated by Micro lab to designated agencies.



ERL AS **Learning Epicentre**

Standardization plays a pivotal role in the economic development of our country. Standards play a level playing field for the industries while ascertaining consumer confidence in the products being manufactured. As the National Standards Body, the aim of BIS is not only to formulate Standards, but also to disseminate the knowledge about importance of Standardisation amongst its stakeholders and common people through various standards promotion activities, public outreach and youth mobilisation programmes.

Certificate Course For Assaying And Hallmarking Personnel

As support towards Skill India Mission by Govt. of India, a 26 day Certificate course for Assaying and Hallmarking Centres (AHC) was organized by ERL in collaboration with the Gems and Jewellery Sector Council from 13.06.2022 to 19.07.2022. Representatives from 17 different AHCs under Eastern Region participated in the program. Participants were given rigorous training on different aspects of Hallmarking scheme of BIS as well as hands on training on the test method of precious metals as per prevailing Indian Standards.

Photograph of participants in AHC certificate course

Internship Program

Eastern Regional Laboratory in 2022-23 launched the Internship programs for Under-graduate & post-graduate students. A total of 11 students from Mechanical, Electrical, Chemical and Microbiology discipline have successfully completed their internship in the year 2022-23. The following projects were undertaken by the interns:

a) Homogeneity & stability of mild steel wire as per IS 280:2006

b) Homogeneity test in plywood as per the relevant Indian Standards.

c) Estimation and expression of uncertainty in tensile strength of IS 280:2006.

d) Measurement Uncertainty in cement testing as per the relevant Indian Standards.

e) Trial run and study of RWC coefficient in Disinfectant fluids, phenolic type as per IS 1061

f) Trial run and study of microbiological testing of Infant milk substitute as per Indian Standard

g) Study of variation in Aerobic microbial count at 22°C upon storage in PDW samples

h) Study of variation in Aerobic microbial count at 37°C and Yeast & Mould upon storage in PDW samples,

I) MU calculation in Tensile Strength and Elongation Test on Cables

J) MU calculation in Thermal Stability of Insulation and Sheath

K) MU calculation in Resistance Measurement of Cable.

Intern working in Microbiology & Chemical Lab

Exposure Visits For Academic Institutions :

As a part of youth sensitization progammes, ERL in collaboration with Kolkata Branch Office I & II, has organized exposure visits for students of schools and colleges. The primary objective of these visits are to instil a sense of adoption for Standards in every sphere of life by the youth of our country. During the exposure visit, students were explained about various theoretical principals applied for the formulation of standards. They were also given practical demonstration of different tests as per standardised methods given in IS. The courses helped to a large extent to bridge the gap between theoretical knowledge and their applications.

DETAILS OF EXPOSURE VISITS FOR ACADEMIC INSTITUTIONS

Sl. No.	Date	Number of Participants	School / College Name
1	22.02.2022	26	Sukantanagar Vidyaniketan (H.S.)
2	07.04.2022	22	Beleghata Deshbandhu High School
3	23.04.2022	22	Kendriya Vidyalaya , Commando Hospital Alipore
4	29.04.2022	22	Krishnapur Adarsha Vidyamandir
5	26.05.2022	27	Techno India Main, Salt Lake
6	27.05.2022	22	Sarda Prasad Institution , Bidhan Nagar Road Kolkata
7	31.05.2022	26	Ashokenagar Banipith High School, Chowrangee More, Ashoknagar, North 24 Parganas
8	29.07.2022	25	Dumdum Baidyanath Institutions
9	25.08.2022	25	Howrah Jogesh Chandra Girls School
10	26.08.2022	26	Ghasiara Vidyapith, Rajpur Sonarpur, Kolkata, W. B. 700150
11	22.09.2022	27	Belgachia Manohar Academy
12	24.09.2022	28	Kendriya Vidyalay Ordinance Factory
13	03.11.2022	26	Bidhannagar Govt. High School, BD-303, BD Block,
14	04.11.2022	24	Begum Rokeya Smirti Balika Vidyalaya
15	16.12.2022	24	Jyangra Adarsha Vidyalaya, Baguiati, Kolkata
16	24.01.2023	22	Budge Budge Institute of Technology
17	28.02.2023	25	Budge Budge Institute of Technology
18	01.03.2023	22	Naihati Narandra Vidya Mandir
19	09.03.2023	35	Belgachia Jatindas Vidya Mandir

Exposure visit for students of Ghasiyara Vidyapith

Exposure visit for students of Dumdum Baidyanath Institutions

Exposure visit for students of Belgharia Jatindas Vidyamandir

Exposure visit for students of Sarada Prasad Institution

Exposure visit for students of Techno India, Salt Lake

Short Term Capsule Courses, Training Programmes & Exposure Visits For Industries

It is of utmost importance to educate the Industry the major stakeholder for BIS Conformity Assessment Schemes on various developments in the fields of Standardization and testing, ERL has organised several exposure visits and 2-Day capsule courses for different sectors of the Industry. Industries that were covered through these exposure visits and short term courses include manufacturers of Packaged Drinking Water, Jute, Toy, Cement and allied products, Pressure Cooker, Plastic pipes, Steel products, Cables and conductors. During these visits, manufacturers were sensitized about the recent changes in Indian Standards, amendments, validation of new test methods, etc. Practical demonstration of different tests are also given as doubt clearing sessions regarding Standard test practices.

To support the Hallmarking Scheme of BIS, ERL has also organized one Artisan Training Programme.

ERL as well as the participants have benefitted immensely from these programmes. ERL has received suggestions from the stakeholders regarding steps that could be taken for further improvement of infrastructure or improvement of test methods. The participants were also enriched by learning new test methods and better understanding of the Indian Standards.

DETAILS OF INDUSTRIAL EXPOSURE VISITS

Sl. No.	Date	Number of Participants	Industry Name
1.	08.03.2021	225	Packaged Drinking Water
2.	06.04.2022	22	Jute
3.	14.05.2022	20	Toys
4.	11.06.2022	20	Paver Block
5.	25.06.2022	21	Plywood
6.	06.08.2022	22	Cement
7.	31.10.2022	25	Packaged Drinking Water
8.	18.11.2022	20	Artisan Training Programme
9.	06.01.2023	14	FSSAI
10.	19.10.2023	19	Pressure Cooker

DETAILS OF CAPSULE COURSES

Sl. No.	Date	Number of Participants	Industry Name
1.	25.06.22 to 26.06.22	25	Steel and related products
2.	26.08.22 to 27.08.22	26	PVC, HDPE Pipes & Fittings
3.	12.09.22 to 13.09.22	24	Cement
4.	17.11.22 to 18.11.22	25	Steel and related products
5.	03.12.22	26	Cement and related products
6.	10.02.23 to 11.02.23	25	Transformer, Cables and Conductors

Capsule course for jute industry

Capsule course for plywood industry

PHOTO
Gallery

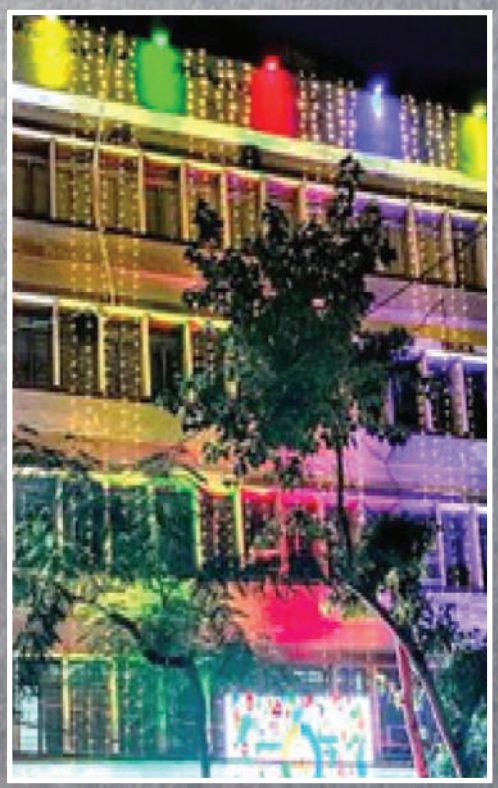
PHOTO GALLERY

International Day of Yoga, June 2022

Inauguration of Referral Assay Lab of ERL by DG,BIS, August 2019

Run for unity : Rashtriya Ekta Diwas, October 2022

ERL Annex Building



ERL main building on the eve of World Standards Day, October 2022

ERL main building on the eve of Independence Day, August 2022

Run for unity : Rashtriya Ekta Diwas, October 2022

Quality Walk to celebrate World Standards Day, October 2022

Inauguration of Instrumentation lab. ERL, 22nd September, 2021

Inauguration of Instrumentation lab. ERL, 22nd September, 2021

PHOTO GALLERY

Our Team

Staff of Admin (ERL) with AD (A & F)

Special campaign 2.O

MECHANICAL SECTION

Conditioning Chamber

Mechanical Testing Lab

Conditioning Chamber

Footwear Testing Lab

Vicat Softening Temparature Apparatus

Mechanical Workshop

OIC (Mech.) along with TP's and Supporting Staff

Digital Vickera Hardness

Plywood Testing Lab Mechanical

CHEMICAL SECTION

Chemical Testing Lab

Iductively Coupled Plasma Mass Spectrometry

OIC (Chem.) along with TP's and Supporting Staff

Gas Chromatography

Liquid Chromatography

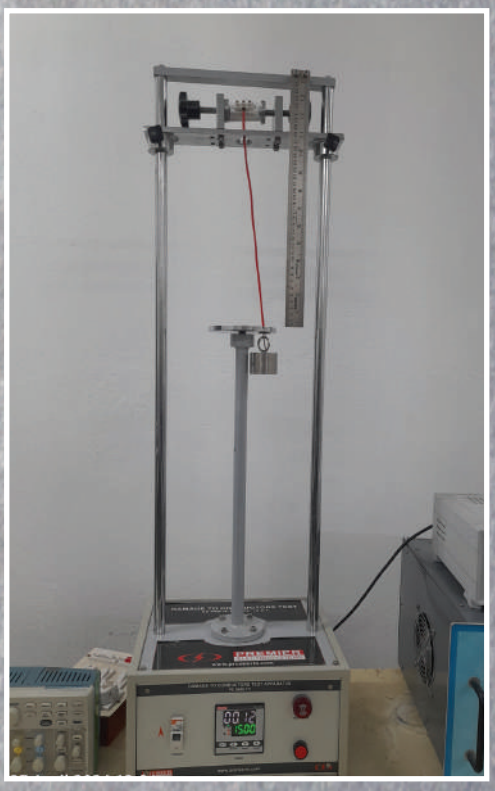
Atomic Absorption Spectroscopy

Wet Lab

Ion Chromatography

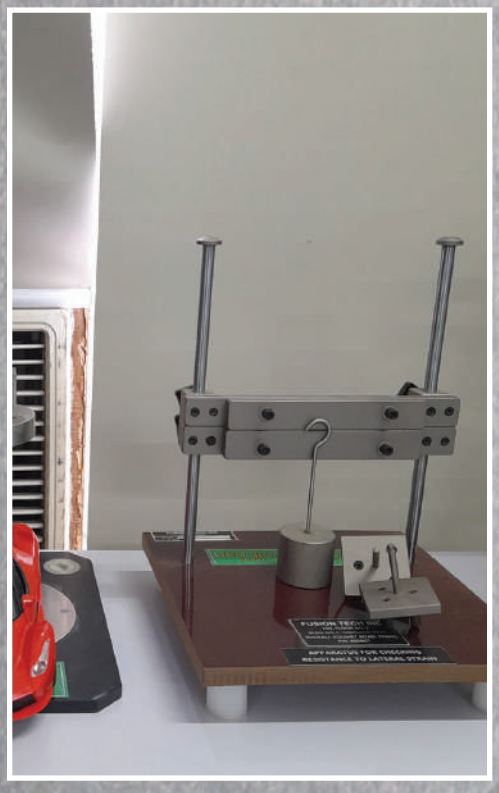
ELECTRICAL SECTION

Bench Vice



Damage to Conductor

Lab Officers and Technical Personnel of Electrical Section



Resistance to Lateral Strain

Horizontal Tensile Testing Machine

Million Mega Ohm Meter

Impact Tester

DC Control Panel

MICRO SECTION

Working in Laminar Air Flow

Sterilization of Media in Autoclave

OIC, Lab Officers and TPs of Micro Section

RAL SECTION

Working in Rolling Mill and Hammar Anvil

Micro Balance

Muffle Furnace

OIC (RAL) with TPs and DEO

SAMPLE CELL AND QA SECTION

Sample Cell

OIC with TPs of Sample Cell

OIC with TPs of Quality Asurance Section

EASTERN REGIONAL LABORATORY
BUREAU OF INDIAN STANDARDS

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