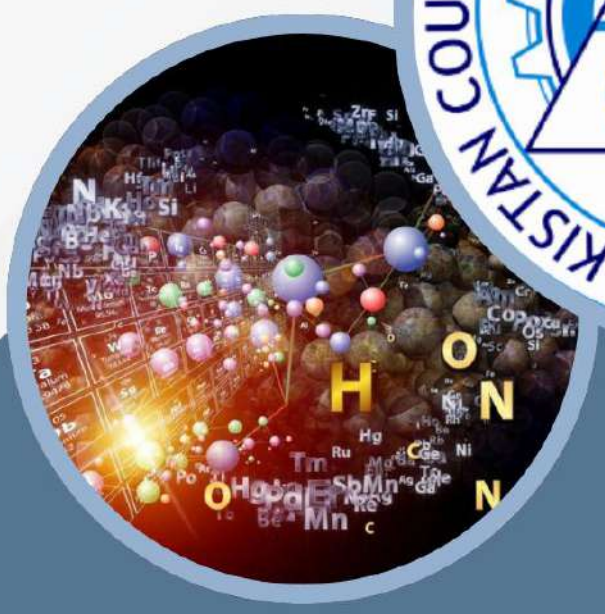
PAKISTAN COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

BIENNIAL
REPORT

For Fiscal Years
2023-24
2024-25





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PCSIR BIENNIAL REPORT
2023-2024
2024-2025

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April, 2026

Message from the Chairman



It is my pleasure to present the Biennial Report of the Pakistan Council of Scientific & Industrial Research (PCSIR) for the fiscal years 2023–24 and 2024–25, highlighting the major achievements, initiatives, and institutional progress made during the reporting period.

During the period under review, PCSIR remained firmly committed to translating scientific research into practical and industry-oriented solutions, in alignment with the Science, Technology and Innovation (STI) Policy of the Ministry of Science and Technology. Particular focus was placed on the integration of emerging technologies across key economic sectors, with the objective of promoting import substitution, export-oriented value addition, and the efficient utilization of indigenous resources.

In line with its strategic vision, PCSIR continued to strengthen international collaboration through science diplomacy. In 2023, a Technology Transfer Agreement (ToT) was signed with Coway International Technology Transfer Company, China. This initiative is expected to support local production, technology commercialization, and technology transfer to the food and feed industries, thereby reducing import dependency and strengthening Pakistan's biotechnology sector.

Promoting innovation and entrepreneurship also remained a priority. PCSIR continued to support start-ups and innovation-driven enterprises by providing access to advanced laboratory facilities, technical mentorship, technology transfer opportunities, and market linkages, thereby contributing to the development of a vibrant national innovation ecosystem and fostering sustainable economic growth.

During the reporting period, PCSIR researchers made notable contributions to scientific literature and remained the centers for the creation and transformation of knowledge, publishing a total of 354 research papers in reputable national and international journals covering diverse scientific disciplines. In addition, 58 patents were filed, while 08 patents were granted, reflecting PCSIR's continued commitment to innovation, intellectual property development, and technological advancement.

PCSIR also continued to play a vital role in supporting industry and academia by providing a wide range of scientific and technical services. During the two fiscal years under review, a total of 43,291 clients were served. These services included the supply of PCSIR-developed products, leasing of developed processes, consultancy services, technical and feasibility reports, and analytical testing services. The achievements of each PCSIR unit are highlighted in this report to showcase their contributions and to promote the effective utilization of PCSIR's infrastructure and technical expertise by SMEs, professionals, students, importers, and exporters, thereby supporting capacity building and economic development in Pakistan.

Human resource development and industrial facilitation remained central to PCSIR's mission. During the reporting period, a total of 42 MoUs/ToRs were signed with national and international partners to strengthen collaborative research, knowledge exchange, and industrial linkages, enabling research outcomes to translate into economic value and societal benefits.

PCSIR also remained steadfast in upholding high standards of quality management, regulatory compliance, and good governance. Transparency, accountability, and integrity continued to guide all institutional operations, reinforcing stakeholder confidence and ensuring responsible management of scientific resources.

I extend my sincere appreciation to all stakeholders for their continued trust, cooperation, and support. Together, we will continue to foster innovation, strengthen industrial competitiveness, and advance scientific progress for a prosperous and sustainable future.

Chairman, PCSIR

Dr. Syed Hussain Abidi, *S.I*

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1. Introduction

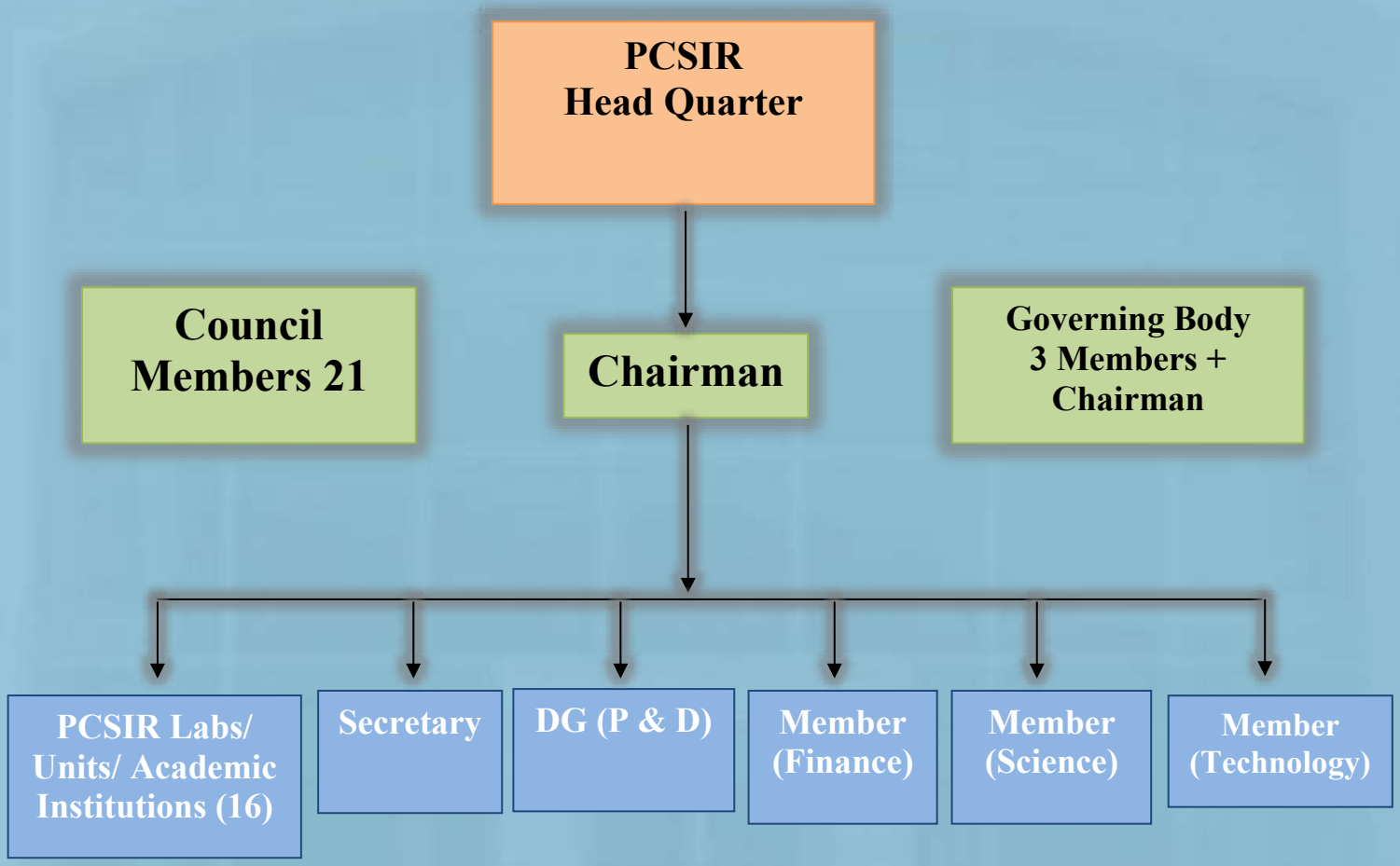
1.1- Mandate

Pakistan Council of Scientific & Industrial Research (PCSIR) is the largest public sector R&D organization with network of eighteen (18) laboratories /units including seven (07) technical centres in the country. The mandate of the Council is to undertake, promote and guide scientific and technological research related to problems connected with the establishment and development of Pakistani industries and to disseminate the results of research to various sectors for economic development of the country.

Vision

Since its inception, PCSIR has contributed immensely in terms of production activities and technological processes to boost the national industries of public and private sectors. Simultaneously, PCSIR has also contributed in terms of human resource development to meet the requirements of academic institutions and R&D organizations of the country.

1.2- Organizational Chart



1.3- Location of PCSIR Labs and Units



1.4- Key Activities in the Fiscal Years 2023-24 & 2024-25



1.5- PCSIR Services Sectors

Agriculture	Strategic Industry
Food and Allied Products	Environment
Textile, Leather & Associated Products	Energy and Electronics
Engineering	Industrial Chemicals
Ores and Minerals	Paper & Plastics/ Polymers
Biotechnology	Pharmaceuticals and Nutraceuticals
Applied Physics	Computer & Instrumentation

1.6- PCSIR Head Office, Islamabad



PCSIR Head Office, Islamabad

1-Constituion Avenue, Sector G-5/2, Islamabad

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PCSIR Head Office, Islamabad

Pakistan Council of Scientific and Industrial Research have a network of 16 research laboratories/ units including 07 training institutes located all over the country in Federal as well as all provincial capitals. Several laboratories of PCSIR are ISO-17025 accredited and some are under the accreditation process. PCSIR's Head Office is located in Islamabad.

The Chairman PCSIR is the competent authority of PCSIR. The Council of PCSIR consists of 21 members which is the supreme policy-making body. The executive organ of the Council is the Governing body which consists of four members: The Chairman and the Members for Science, Technology and Finance. Following wings are working under supervision of the Members in Head Office.

Science Wing

Member (Science) is the Head of the wing and responsible for supervision and monitoring of all Research and Development activities of the Council, training and technical matters of units, organizing events and programmes in collaboration with international and national organizations.

The Science Wing is also responsible for scrutinizing and printing of PCSIR Annual Reports and R&D Programmes. Similarly, accreditation matters, technical comments, National Assembly/ Senate questions, networking system and software development are also dealt in the Science wing.

Technology Wing

Member (Technology) is the Head of the wing and responsible for supervision of all civil works, PSDP projects, technical training institutes, commercialization of products/ services, exhibitions etc.

Finance Wing

Member (Finance) is the Head of the wing and responsible for supervision of all finance-related matters of PCSIR, audit matters, annual (development and non-development) budget, payments related to recoupment and hiring etc., monitoring of Self-Generated Income, pension and GP Fund.

Administration/ Establishment Wing

Secretary PCSIR is the Head of the wing and responsible for supervision of administrative matters, establishment matters, security measures, legal matters, promotions and recruitments, holding of PCSIR Council and Governing Body meetings.

1.7-Year at a Glance

1.7.1- PCSIR's Key Performance Indicators for FY 2023-2024

S. No	Key Performance Indicators (KPIs)	Achievements
1.	Processes Developed	237
2.	Processes Leased out	107
3.	Patents Filed/ Obtained	31
4.	Students Supervised	1406
5.	Consultancies Provided	992
6.	Technical/ Feasibility Reports	319
7.	Papers Published	187
8.	Analytical Equipment Developed	138
9.	Exhibitions/ Seminars/ Workshops/ Training Organized	196
10.	MoUs Signed	19
11.	Interaction with Industries (Visits)	2354
12.	No. of Services Provided	64113
13.	No. of Clients Served	21674

1.7.2- PCSIR's Key Performance Indicators for FY 2024-2025

S. No	Key Performance Indicators (KPIs)	Achievements
1.	Processes Developed	240
2.	Processes Leased out	118
3.	Patents Filed/ Obtained	27
4.	Students Supervised	919
5.	Consultancies Provided	1019
6.	Technical/ Feasibility Reports	344
7.	Papers Published	167
8.	Analytical Equipment Developed	164
9.	Exhibitions/ Seminars/ Workshops/ Training Organized	250
10.	MoUs Signed	23
11.	Interaction with Industries (Visits)	1818
12.	No. of Services Provided	61473
13.	No. of Clients Served	21617

1.7.3- Achivements of Technical Training Institutes (Fiscal Year 2023-2024 & 2024-25)

S.No.	Name of Institute	Location	Long Courses Passouts (Degree/DAE)	Short Courses	Revenue Generated Rs in Million
1.	Institute of Industrial Electronics Engineering (IIEE)	Karachi	356	96	25.1
2.	Pak-Swiss Training Centre (PSTC)	Karachi	1124	2140	24.5
3.	Precision System Training Centre (PSTC)	Lahore	122		13.6
4.	Precision System Training Centre (PSTC)	Quetta	168	121	.98
5.	Precision System Training Centre (PSTC)	Peshawar	112	265	5.1
6.	Cast Metal & Foundry Tecnology	Daska	241	844	7.1
7.	Precision System Training Centre (PSTC) (Started in 2024)	Gawadar	-	24	1.3
Total:			**2123**	**3490**	**77.68**

1.7.4- Human Resource Development During 2023-24 & 2024-25

Training Received (Long-Term)

Nature of Training	Foreign		Local		Total
	2023-24	2024-25	2023-24	2024-25	
Ph.D.	-	1	4	4	9
M. Phil./ M.Sc./ MS	1	-	4	2	7

Training Received (Short-Term)

Nature of Training	Foreign		Local		Total
	2023-24	2024-25	2023-24	2024-25	
Short Training Courses, Webinars Workshops, Seminar, etc.	37	-	34	37	108

1.7.5- Budget and Finance

Non-Development Budget (Fiscal Year 2023-2024 & 2024-25)

Year	2023-2024	2024-2025
Approved Budget	Rs. 4,035.937 million	Rs. 4,901.208 million
Released	Rs. 4,035.937 million	Rs. 4,901.208 million

Development Budget (Fiscal Year 2023-2024 & 2024-25)

Year	2023-2024	2024-2025
Approved Budget	Rs. 3,872.835 million	Rs. 3,435.598 million
Released	Rs. 2,808.549 million	Rs. 3,435.598 million

1.7.6- Development Projects

On-Going PSDP Projects executed during 2023-24 & 2024-25

S. No.	PSDP #	Project Name	Total Cost (Million Rs)	PSDP Allocation (Million Rs)	PSDP Allocation Revised (Million Rs)
1.	731	Cultivation and Processing of Medicinal and Industrial Cannabis on Experimental Fields and Establishment of testing and product development facilities at PCSIR Laboratories Complex, Lahore, Peshawar and Karachi.	1896.820	757.783	757.783
2.	732	Data Repository of Scientific Instrumentation	300.000	40.000	40.000
3.	733	Development of Computer Controlled Fermentors and Production of Biochemicals & Bioproducts	1981.607	400.000	400.000
4.	734	Digital transformation, strengthening and automation of PCSIR.	960.710	120.000	120.000
5.	735	Establishment of Material Resource Centre and development of additive manufacturing and Reverse Engineering Centre at PCSIR.	1951.683	625.773	625.773
6.	739	Gene Editing of Biological Agents for Nutritional Biochemical and Therapeutical purpose.	1799.598	250.000	250.000
7.	741	Medical Equipment & Devices Innovation Center (MEDICen). (Task Force)	1989.520	350.000	350.000
8.	743	Research, Development and Innovation Program in PCSIR	1500.000	5.000	210.000
9.	749	Research, Development and Technology Transfer of Selected Active Pharmaceutical Ingredients (APIs) for Import Substitution (PCSIR)	1067.639	300.000	300.000
10.	750	Establishment of Medical Cannabis Greenhouses for Biotechnology Derived Bio-Products, National Hemp & Cannabis Analytical Laboratory and National Industrial Hemp & Medicinal Cannabis Authority	1946.014	400.000	325.000
		Total:	**15393.591**	**3248.556**	**3378.556**

Newly approved PSDP projects during 2024-25:

S. No.	Title of Project	Approved by	Cost (Million Rs.)	Demand 2025-26
1.	Establishment of Minerals Resource Centre, Analytical Laboratory and Minerals Detection facility at PCSIR Labs Peshawar for Product Design, Development and value addition to enhance Export	DDWP 18-02-2025	979.621	432.016
2.	Upgradation of PCSIR Laboratories Quetta.	DDWP 18-02-2025	839.000	432.250
3.	Exploration, Beneficiation and Extension of Rare Earth Metals, Precious Metals and Critical Minerals in Gilgit-Baltistan, Pakistan.	DDWP 18-02-2025	949.960	405.00
4.	To leverage Existing Infrastructure for the Establishment of Research, Innovation and Commercialization cell at PCSIR.	DDWP 18-02-2025	497.000	201.730
		Total:	**3265.581**	**1470.996**

Outreach Activities: Meeting, Visits & Coordination

Visit of the Federal Minister for Science and Technology, Honorable Mr. Khalid Hussain Magsi, to PCSIR Laboratories Complex, Karachi on 23rd April, 2025

The Honorable Federal Minister for Science & Technology, Mr. Khalid Hussain Magsi, paid an official visit to the Pakistan Council of Scientific and Industrial Research (PCSIR) Laboratories Complex, Karachi, on 23 April 2025. The visit aimed to promote innovation and strengthen public–private collaboration in Pakistan's scientific and industrial sectors.



The Minister was received by Dr. Hafiz Rub Nawaz, Director General, PCSIR Labs Complex, Karachi, who introduced him to senior officials and scientists. A briefing by Dr. Razia Sultana, Director Planning & Development, outlined PCSIR's ongoing projects, strategic objectives, and research contributions. Heads of PCSIR Centers, along with representatives from the Industrial Liaison Office and Marketing Division, were also present.



The Minister appreciated PCSIR's value-added products based on Cannabis and Hemp, the locally developed water purification plant, biomedical equipment, indoor air purifiers, milk adulteration testing kits, and the Motor Testing Facility. He emphasized the need to enhance project visibility, scale up initiatives through Public-Private Partnerships, and commercialize research outcomes.



During the laboratory visit, the Minister expressed satisfaction with facilities in Microbiology, Food, Environmental, Pharmaceutical, and Calibration Testing, and commended the scientific teams for their dedication. He reaffirmed the government's continued support for PCSIR in advancing science, technology, and industrial development in Pakistan.

Visit of the Federal Minister of Science and Technology Dr. Khalid Maqbool Siddiqui to PCSIR Laboratories Complex Karachi on 25th March, 2024





Federal Minister for Science and Technology Dr. Khalid Maqbool Siddiqui visited PCSIR Laboratories Complex Karachi on 25th March, 2024. He was welcomed by Director General PCSIR Labs Complex Karachi. Dr. Razia Sultana (Director P&D) presented an overview of PCSIR Laboratories Complex Karachi and its achievements during recent years.

There are numerous agricultural solutions provided by the lab whether it is tissue culture variety of stress tolerant sugar cane or banana or foliar fertilizers for cash crops. The scientists also developed certain cost-effective technologies for water treatment. A state-of-the-art ultra-filtration unit was designed, fabricated and installed at Sind Governor House, which can purify tap water to crystal clear clean water with almost zero bacterial load. A water treatment plant was also designed, fabricated and installed at Khinser Village Chachro district Tharparkar, which removes fluoride, arsenic and nitrate from groundwater, making it safe for human consumption.

The other technologies discussed during presentation were low cost laboratory equipment, baby warmers, infant incubators, training aid systems, pharmaceutical and nutraceutical products, and user friendly testing kit for adulteration of milk etc. He praised the efforts made by the institution. He was also briefed about the planning for way forward and road map of PCSIR for progress of the country, he said that he will ask planning commission to prioritize funding of PSDP projects of national interest. He took keen interest in the progress of PSDP Project “Cultivation and Processing of Medical and Industrial Cannabis on Envirmental Field and Establishment of Testing and Product Development Facilities”. He visited the lab working on the project and saw the products developed from cannabis fiber, seed meal and CBD Oil.

Dr. Khalid Maqbool assured his support for PCSIR. He said that it is high time for the nation to unite and focus on its self-reliance. He emphasized the need to identify our weaknesses and shortcomings, so as to understand why our nation is not progressing at the same pace as others in the region.

He said that development of the country can be achieved through revolution in the field of science and technology and PCSIR has great responsibility to achieve this goal.

Visit of the Chairman PCSIR, Honorable Dr. Syed Husain Abidi, to PCSIR Laboratories Complex, Karachi on 24th January, 2024







Honorable Chairman PCSIR Dr. Syed Husain Abidi visited PCSIR Laboratories Complex Karachi on 24th January 2024. He was welcomed by DG KLC Dr. Hafiz Rub Nawaz, Dir P&D Dr. Razia Sultana and Consultant to the Chairman Dr. Khaula Shirin. In his initial meeting with all HOCs he briefed about his accomplishment during his first tenure as Chairman PCSIR. He asked all HOCs to set achievable and quantifiable goals of R&D as well as test and analysis. He visited all major centers of KLC. HOCs and scientists of respective centers showed him progress of their projects, their achievements and discussed the problem in achieving their goals. He praised the performance and efforts of the working scientists and also guided them how to overcome the gap. His particular focus was on the performance of the PSDP Project "Cultivation of Medicinal & Industrial Cannabis on Experimental Field and Establishment of Testing and Product Development Facilities. He was briefed about the products developed by the group with cannabis oil and seed meal. He was also briefed about the achievements for Tissue Culture of cannabis for mass multiplication. He also visited the hydroponic field for optimum growth of Cannabis plants. He was satisfied with the performance of the working group and praised their efforts. He focused on the need of working dedicatedly and also emphasized on public private partnership for future R&D and development projects.

Visit of the Honorable Federal Minister Dr. Khalid Maqbool Siddique (MoST), to PCSIR Labs Complex Lahore on 14th June, 2024







The Honorable Federal Minister paid an official visit to PCSIR Laboratories Complex (LLC), Lahore, on June 14, 2024, to review the organization's research, development, and technological advancement initiatives.

Upon arrival, the Minister was warmly received by the management and senior officials of PCSIR Lahore. During a comprehensive briefing session, the Director General, PCSIR Lahore, highlighted the diverse research and development (R&D) activities being undertaken by the complex in various scientific and industrial fields. The briefing focused on PCSIR's contributions toward innovation, industrial support, technology development, quality testing services, and capacity building for national socio-economic growth.

The Honorable Minister appreciated the efforts of PCSIR scientists, researchers, and technical staff in promoting indigenous technologies and providing scientific solutions to industry-related challenges. He emphasized the importance of strengthening research institutions to support sustainable industrial development and enhance Pakistan's scientific and technological capabilities.

During the visit, the Minister toured various research centers, laboratories, and technical facilities of the Laboratories Complex. He reviewed ongoing projects, interacted with scientists and researchers, and observed the state-of-the-art equipment and services available at the different centers. The visit provided an opportunity to discuss future research priorities, collaboration with industry, and strategies for improving the commercialization of research outcomes.

Visit of the Honorable Federal Sectary Mr. Sajid Baloch (MoST), to PCSIR Labs Complex Lahore on 31st December, 2024

Honorable Federal Secretary, Mr. Sajid Baloch, from the Ministry of Science and Technology (MoST), visited the PCSIR Labs Complex, Lahore, on December 31, 2024. During his visit, a formal meeting was held in the committee room of the Director General's Office, attended by the heads of various centers and senior officials of the complex. The meeting provided an opportunity for a detailed discussion on ongoing projects, organizational achievements, challenges, and future development plans aimed at strengthening scientific research and technological innovation within PCSIR.





During the session, the participants briefed the Federal Secretary on key initiatives being undertaken across different centers, highlighting efforts to enhance research capabilities, improve laboratory services, and promote collaboration with industry and academia. Emphasis was also placed on strategic plans for expanding research activities and addressing emerging technological needs of the country.



Following the meeting, Mr. Sajid Baloch visited various facilities and centers of the Laboratories Complex (LLC). During the tour, he was comprehensively briefed on the research and development activities being carried out by the organization, with particular focus on projects contributing to industrial growth, quality assurance, and technological advancement. He was also informed about the active participation of PCSIR's accredited laboratories in national and international Proficiency Testing (PT) programs, which play a vital role in maintaining the accuracy, reliability, and international recognition of laboratory results.

Visit of the Honorable Federal Minister Mr. Khalid Hussain Magsi for Science and Technology, to PCSIR Labs Complex Lahore on 30th June, 2025





The Honorable Federal Minister for Science and Technology, Mr. Khalid Hussain Magsi, visited the PCSIR Pilot Plant on June 30, where a range of specialized chemicals are produced for strategic national entities. During the visit, Dr. Muhammad Zia-ur-Rehman, Head of the Applied Chemistry Research Centre, along with Engr. Faisal Ahmed, briefed the Minister on the ongoing production activities, operational processes, and the technical aspects involved in the manufacturing of these critical chemicals.

The briefing highlighted the importance of the Pilot Plant in supporting indigenous production and fulfilling the requirements of strategic sectors through in-house scientific and technical expertise. The Federal Minister took keen interest in the facilities, closely observed the production processes, and appreciated the efforts being made to strengthen self-reliance in chemical manufacturing.

He highly appreciated the dedication and professionalism of the scientists, engineers, technical staff, and the management of PCSIR for their hard work and commitment in ensuring efficient and quality production. The Minister also commended the Director General for his leadership and for effectively involving PCSIR in such important national-level activities, contributing significantly to scientific advancement and industrial development in the country.

Visit of the Honorable Chairman PCSIR, Dr. Syed Husain Abidi, to PCSIR Laboratories Complex Lahore on 23rd December, 2024





A meeting was held on December 23, 2024, between the Chairman of PCSIR and the Director General of LLC with a foreign delegation to discuss ongoing research and development (R&D) initiatives. The session focused on providing a comprehensive overview of PCSIR Lahore's existing R&D facilities, scientific capabilities, and key research activities being carried out in various specialized fields.

During the meeting, detailed discussions were held on potential areas of mutual interest, with emphasis on future collaboration in research, innovation, and technology development. The foreign delegation was briefed on PCSIR's role in supporting industrial solutions, applied research, and the development of indigenous technologies.

Following the meeting, the delegation visited the newly renovated laboratories at PCSIR Lahore, where they were introduced to state-of-the-art research facilities and advanced scientific equipment. The visit provided an opportunity to observe ongoing laboratory activities and understand the scope of modernized infrastructure.

The interaction aimed to strengthen international cooperation, promote exchange of scientific ideas, and explore collaborative opportunities that could contribute to advancements in research and technological innovation for mutual benefit.

Visit of PCSIR Head Office Team for the Establishment of a Common Facility Centre at SIMAP, Sialkot

The Pakistan Council of Scientific and Industrial Research (PCSIR) has established a Common Facility Centre (CFC) at the Sialkot Industrial Manufacturers Association (Private) Limited (SIMAP), Sialkot, with the objective of strengthening industrial support services through advanced technical testing and analytical facilities. This initiative has been developed to bridge the gap between research institutions and the industrial sector by providing accessible, reliable, and cost-effective laboratory services to local manufacturers, particularly small and medium enterprises.

A team from PCSIR Head Office visited the facility and held detailed discussions with relevant stakeholders regarding the establishment, functioning, and future development of the Common Facility Centre. The meeting focused on reviewing operational arrangements, strengthening service delivery mechanisms, and exploring ways to further enhance the scope of technical support provided to local industries.



The centre has achieved remarkable progress in a short span of time, successfully conducting more than 4,000 analytical tests across various industrial sectors. These tests have contributed to improved quality assurance, product standardization, and compliance with regulatory requirements. In addition, the facility has extended its services to approximately 800 industries, demonstrating its wide outreach and strong impact on the local industrial ecosystem.

Visit of the Honorable Secretary PCSIR and Director Technology to IIEE



Mr. Tanvir Ahmed Khan, Secretary PCSIR, along with Engr. Ghulam Shabir, Director Technology, visited the Institute of Industrial Electronics Engineering (IIEE) to review academic and institutional matters and explore opportunities for strengthening collaboration.

During the visit, the delegation held a detailed meeting with the Principal of IIEE, where key administrative, academic, and developmental issues of the institute were discussed. The discussion focused on improving institutional performance, enhancing technical education standards, and aligning academic programs with emerging industrial and technological needs.

The PCSIR officials also met with the faculty members to exchange views on recent advancements in science, technology, and engineering education. The interaction highlighted the importance of modernizing curricula, promoting research culture, and strengthening linkages between academia and industry to better prepare students for future technological challenges.

Following the meetings, the delegation toured various facilities of the institute, including laboratories and academic departments. During the visit, they observed the available infrastructure and expressed interest in further strengthening cooperation between PCSIR and IIEE in areas of technical training, research collaboration, and capacity building.

The Honorable Dr. Hussain Abidi, Chairman and Secretary, Pakistan Council of Scientific and Industrial Research (PCSIR), visited PCSIR Laboratories, Skardu.

The Honorable Dr. Hussain Abidi, Chairman and Secretary, Pakistan Council of Scientific and Industrial Research (PCSIR), visited PCSIR Laboratories, Skardu, to review the ongoing activities and overall operational status of the facility. The visit was aimed at assessing the performance of the laboratories, understanding regional research needs, and strengthening the role of PCSIR in promoting scientific and industrial development in the northern areas of Pakistan.



During the visit, Dr. Hussain Abidi was briefed on the laboratory's key functions, including testing services, research activities, and support provided to local industries and stakeholders. The briefing also highlighted the importance of the Skardu facility in addressing region-specific challenges, particularly in areas such as natural resources, environmental studies, and quality testing services.

He reviewed the available infrastructure, laboratory setup, and ongoing projects, appreciating the efforts of the local management, scientists, and technical staff for maintaining operational efficiency under challenging geographical conditions. The Chairman emphasized the need to further enhance research capabilities, improve service delivery, and expand the scope of analytical facilities to better serve the region.

The Honorable Chairman also underscored the importance of strengthening PCSIR's presence in remote regions like Skardu to ensure equitable access to scientific and technical services. He encouraged the staff to continue their dedication toward research excellence and assured full support from PCSIR Head Office for future development and upgradation of the laboratory facilities.

2- Activities & Progress

2.1- PCSIR LABORATORIES COMPLEX, KARACHI



PCSIR Laboratories Complex, Karachi

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E-mail: pcsirkarachilabs@gmail.com

Website: www.pcsir.gov.pk



Name of the Head: Dr. Haiz Rub Nawaz
Designation: Director General
Tenure: 21.12.2021 To 04.11.2025

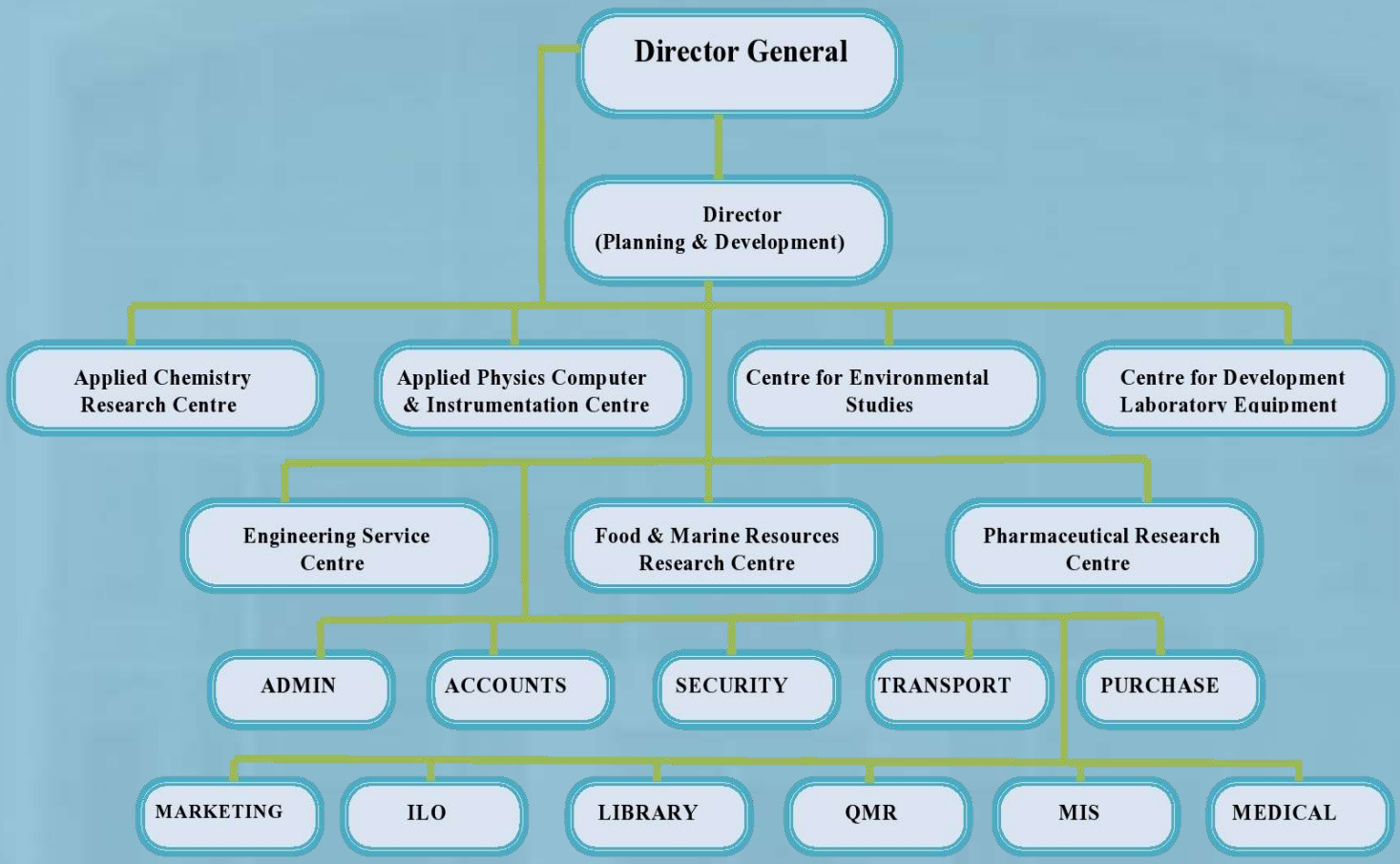
The PCSIR Laboratories Complex, Karachi (KLC) is a dynamic, multidisciplinary research and development organization with a team of highly qualified scientists possessing expertise in diverse fields, including Marine and Food Sciences, Environmental Science, Biosciences, Pharmaceuticals, Applied Chemistry, Applied Physics, Instrumentation, Material Science, and Computer Science, among others.

The Karachi Laboratories Complex has developed a significant range of processes and technologies aimed at utilizing indigenous natural resources, promoting import substitution, and enhancing export potential. In addition to its focused research and development initiatives, KLC provides a wide spectrum of analytical and technical services to regulatory authorities, customs agencies, private industries, government organizations, and academic institutions.

In the context of ISO standards and WTO requirements, KLC has made substantial contributions by delivering high-quality testing and calibration services accredited under ISO/IEC 17025. These accredited services play a vital role in supporting Pakistani manufacturers, exporters, and importers in meeting international quality and compliance standards.

Furthermore, PCSIR Karachi plays a vital role in human resource development by actively conducting professional training programs for scientists, technologists, and industry personnel. Over the reporting period, the scientists and researchers at KLC have made notable contributions to the scientific community through the publication of numerous research papers in reputed national and international journals. The organization has also successfully filed and secured several patents, reflecting its strong commitment to innovation, research excellence, and technological advancement across multiple scientific disciplines.

ORGANIZATIONAL CHART



Important Events organized by KLC

PCSIR Delegation Visits FPCCI to Foster Industrial Growth and Socio-Economic Development





On the invitation of Mr. Saquib Fayyaz Magoon, Acting President of the Federation of Pakistan Chambers of Commerce & Industry (FPCCI), Dr. Hafiz Rub Nawaz, Director General of PCSIR Laboratories Complex, Karachi, accompanied by a team of senior officers and scientists, paid an official visit to FPCCI on 16 April 2025. During the visit, the PCSIR delegation held a productive meeting with FPCCI members representing a wide range of industrial sectors. In his address, Dr. Hafiz Rub Nawaz reaffirmed PCSIR's commitment to supporting Pakistan's industrial development and economic growth. He assured the business community that PCSIR stands ready to assist industrialists in addressing technical challenges through its specialized services, including testing, calibration, quality assurance, and technical consultancy.

Dr. Nawaz further emphasized PCSIR's willingness to undertake research and development initiatives tailored to the specific needs and requirements of FPCCI and its member organizations. He noted that such collaborative efforts would help promote innovation, strengthen industrial competitiveness, and enhance the technological capabilities of industries across the country.

PCSIR Karachi Signed Memorandum of Understanding with Jinnah Sindh Medical University (JSMU)





A Memorandum of Understanding (MoU) was signed between the Pakistan Council of Scientific and Industrial Research (PCSIR) Karachi Laboratories Complex (KLC) and Jinnah Sindh Medical University (JSMU) on 14th Feb 2025 to foster collaboration in research and development (R&D) activities and human resource development.

The agreement was formally signed by Dr. Azam Khan, Registrar of JSMU, and Dr. Hafiz Rub Nawaz, Director General of PCSIR-KLC, during a ceremony held at PCSIR, Karachi. The event was attended by representatives from JSMU and PCSIR.

Director General of PCSIR-KLC outlined PCSIR's vision, objectives, and contributions to scientific research and technological advancement. This MoU marks a significant step toward strengthening collaboration between the two institutions, fostering joint research initiatives, academic exchange programs, and capacity-building efforts in science and healthcare.

Contract Signed between PCSIR Karachi and Export Development Fund, Ministry of Commerce



Export Development Fund (EDF), Ministry of Commerce, Pakistan will support the modernization of PCSIR, Karachi Testing labs for food commodities specially fruits and vegetable export.

Deputy Director, EDF Mr. Abdul Qayyum and Director General, PCSIR Dr. Hafiz Rub Nawaz signed a contract agreement on Monday Feb. 10, 2025 through which PCSIR, Karachi will modernize its Food Safety Testing Labs up to the level of top international labs by the financial support of EDF.



The ceremony was held at PCSIR, Karachi in which Director General, Marine Fisheries Department along with his team mates were present. Other delegates also participated via video link. The ceremony was initiated with recitation of Holy Quran. Director General PCSIR, Karachi welcomed the guests and briefed the roles and contributions of PCSIR in export enhancement. Later, Project Director, Dr. Sohail Shaukat briefed the participants about the vision, goals, objectives, accomplishment strategies and sustainability plans of the Project followed by a session of Questions and Answers. Deputy Director EDF, Mr. Abdul Qayyum highlighted the contributions and role of EDF in export promotion by strengthening the key export-oriented organizations.

KCCI Delegation Visits PCSIR Laboratories Complex Karachi to Explore Collaborative Opportunities



A delegation from the Karachi Chamber of Commerce & Industry (KCCI), led by Senior Vice President Mr. Altaf A. Ghaffar, visited PCSIR Laboratories Complex, Karachi, on 18 January 2024. The delegation, representing multiple industrial sectors, was welcomed by senior officials of PCSIR.

During the visit, both sides held discussions on potential collaboration, focusing on joint R&D projects for SMEs, technology transfer, and knowledge-sharing initiatives to promote industrial growth and innovation. The delegation also toured PCSIR's laboratories and showed interest in locally developed products and facilities.



KCCI proposed signing an MoU to formalize future cooperation. The visit ended on a positive note, with both organizations agreeing to strengthen long-term collaboration and maintain regular engagement.

1) Processes Leased Out:

1.A Process Developed for Pencil Durability Testing Method

2.A Process for the production of Cultivation of Tissue Culture Sugarcane Crop KLC-I as a Seeding Material

3.A Process for the production of Skin Whitening Cream

4.A Process for the production of Full Cream Mix Atti (for enhancing milk production with high content of fat).

5.A Process for the production of Dairy Feed (blend of cereal, pulses and grains with molasses for the improvement of milking animal health and also for the production of milk& weight).

6.A Process for the production of Maize (Gluten for the dairy cows and buffalos for the increasing energy and development of immune system)

7.A Process for the development of Khull Plus (Different Khull) (Meals and cackes of oil crops for the Improvement of fats and milk production in animals).

8.A Process for the production of NPK 15:15:15 Plus Trace Elements

9.A Process for the production of Formulation of Printing Toner

10. A Process for the production of Blood Stain Remover for Diagnostic Labs (Blood Buster)

11. A Process for the production of Improvement of Auto-disable (AD) syringes molding system.

12. Process for Improvement of Quality of PE Pipes as per PSQCA Standards.

13. Process for Formulation of Anticarburizing Paste.

14. Process Improvement of Chelated Liquid Potash.

15. A Process for the production of Solar Panel Cleaner Tonic (Ultra Clear).

16. Process Improvement of Herbal Shampoo.

17. Process Improvement of Whitening Cream.

18. Process Improvement of Face Wash.

19. Process Improvement of Whitening Cream/Anti-aging Cream.

20. Process Improvement of Energy Drink (Flavor Setting).

21. Process for Dimensional Correction of PVC Pipes & Fittings for Polymer and Pipe Industry.

2) Papers Published

i) International Publications

1. N. Sultana, S. Jalal, G. Asghar, A. Hassan, K. Rafiq, H. Shah & Assadullah, Evaluation of antibacterial activity of Pomegranate (Punica granatum L. and Citrus lemon against urinary tract infection causing E. Coli. Enterococcus bacteria E. Coli. Enterobacter fecalis, Enterobacter aerogenes collected from various diagnostic laboratories of Khwazakhela, Swat, *World Journal of Biology Pharmacy and Health Sciences,15(03), 127-138, September 2003,* IF. 8.16.

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12. S. Imad, S. A. Sheikh, S. Shafiq. Significant effect of amended soil on microbial flora of soil and plant growth in comparison with natural low nutritive soil, International Journal Of Scientific and Engineering Research (IJSER) December, 2023, IF.4.2
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17. Ullah Asad, Yin X, Naveed M, Aslam S, Chan MW, Bo S, Wang F, Xu B, Xu B, Yu Z., Study of selenium enrichment metabolomics in Bacillus subtilis BSN313 via transcriptome analysis, Biotechnology and Applied Biochemistry February 2024, IF. 2.8
18. Najam ul Sahar, Nazakat Hussain Memon, Muhammad Rafiq, Majid Ali Abbasi, Naseem Khatoon, Arshad Hussain Laghari, Dildar Ali Solangi, Beena Naqvi, Muhammad Idrees, the efficacy of ammonium as seed priming agents for promoting tomato (Solanum lycopersicum L.) germination under salinity stress, Acta Agrobotanica, Volume 76 / Article 174669, Publisher: Polish Botanical Society Article February, 2024, IF. 1.36.
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ii) National Publications

1. I. Ullah Baloch, A. A. Kandhro, A. H. Laghari, Nawab Shah, Wahid Bakhsh Baloch, Khadim Ali Gishkori, Estimation of Trace and Toxic Metals from Cannabis Sativa Plant in District, Kech Baluchistan, Pakistan, Journal of Health and Rehabilitation Research3(2), 959-964, December 2023, IF. 0.785
2. Nighat Sultana, Sohail Akhtar, Adel Zia Siddiqui and Haseeb-ur-Rehman, Covid 19 and Food Safety: Guidance for Preventive Techniques in Food Borne Diseases by Micro-organisms, Pak. J. Sci. Ind. Res. Ser. A: Phys. Sci., 67A (1) 76-100, March, 2024, IF. 0.16
3. Hussain, S. Anjum, Y. Kanwal, Mansoor Iqbal, Kamran Ahmed, S. Pervaiz, Evaluation of dyeing properties of Lawsonia Inermis on multi fiber through the exhaust method, Pakistan journal of Chemistry, May, 2025, IF. 0.6

3) Patents Obtained:

1. Gene Bank Submission: Production of Phytase from Probiotic Strain HS1, Dr. Hafsa Sattar, Dr. Saeeda Bano, Dr. Samina Iqbal and Hameed Waheed, Accession # OR575051, Dated 20-09-2023.
2. A formulation for the production of Hyssopus officinalis cough cure syrup using Milstone Start-E ATC-400 Microwave Extractor System, Dr. Nighat Sultana and Mahmood ul Hassan, SI # 144162, dated 05-09-2023.
3. A process for the production of anti-acidity syrup through Milestone start-E-ATR-400 Microwave Extractor System, Dr. Nighat Sultana, Mehmood-ul-Hasan, SI #, 144226, dated12-12-2023

4) Products ready for Commercialization:

1. Process developed for Crop Supplement "BLOOM" with Potash 30%.
2. Process developed for the production of "Antiscalant for R.O plant" on Laboratory scale
3. Process development for Antilice product
4. Process developed for Mosquito Repellent Lotion
5. Process developed for Skin Whitening Cream
6. A process for Play Slime
7. Extraction of Laccase from locally available Mushrooms variety
8. Process development of Sulfur WDP 80%
9. Process developed for the bioconversion of waste biomass into organic compost
10. Process developed for the synthesis of NPKZ in solid form (18:18:18:2)
11. Process developed for the synthesis of Liquid Phosphorus 23% plus Zinc
12. Process developed for the synthesis of Chitosan from Shrimp Shell
13. Foliar Feed for Flowers (FFF)
14. A process for the development of active dry yeast
15. Preparation of anti-psoriasis cream
16. Chelated Potassium 22%
17. Pain Reliving Patch comprises of a mixture of essential oils, capsicum oleoresin, menthol, camphor and methyl salicylate
18. Cannabis based Pain Relief Oil
19. Cannabis based Body Butter
20. Cannabis based Calm Hydrating Facial Serum
21. Cannabis based Heel-up (Anti-Crack) Cream
22. Cannabis based Hair Oil
23. Cannabis based Beard Oil
24. Method development of making fish hydrolysate powder, by using spray drier and Stevia used as sweetener

25. Method development of making fish hydrolysate syrup and Stevia used as sweetener
26. A process for the formulation of a deodorant having antibacterial properties for fabrics
27. Hypoallergenic Protein Energy Bars Enriched with Hemp Seeds
28. Vegan milk emulsion based on hemp and pistachio seeds for lactose-intolerant people.
29. Hemp seed Based Protein Powder.
30. Hemp Seed Based Jam.
31. Liquid Antiseptic Solution
32. Process development of N-Plus fertilizer
33. Assessment of the effectiveness of anti-microbial compounds in swimming pool supply polymer pipes
34. Process development of (Liquid Potash 30%) fertilizer
35. Auto parts manufacturing Industry effluent treatment by precipitation and neutralization
36. Process development of spray dried colostrum milk powder
37. Process for the development of Iron Oxide Magnetic Nanoparticle
38. Cannabis seed oil-based Soap
39. Removal of ink component from ink effluent by chemical treatment
40. A Process for the preparation of NOUZIA herbal tea
41. Process developed for “Calcium booster” (liquid Chelated fertilizer with Magnesium)
42. Process for the formulation of Herbal Tea
43. Process for the formulation of Onion Extract Plus Aloe Vera based herbal Shampoo
44. Process for the formulation of Ink for Self-Stamp
45. Process developed for “HiCal” an import substitute Fertilizer (water soluble calcium, magnesium, nitrate based liquid fertilizer)
46. Preparation of Antioxidant Herbal Tea
47. Process developed for Zinc Oxide nanoparticles synthesis
48. Process development of Instant Black Tea
49. A Process for the Production of Golden Beet Root juice
50. A process for the preparation of golden beet root Juice
51. A process for the preparation of golden tomato juice
52. A process for the preparation of dates honey
53. A process for the production of amylase enzyme stable at room-temperature
54. Process development of manganese sulfate solution (fertilizer)
55. A process for the preparation of anti-inflammatory topical cream
56. A process for preparation of topical ointment for relief in eczema
57. Process developed for Organic based Radiator Coolant
58. Process developed for Liquid Cleaner for Terry towels used in Kitchen

59. Process developed for Cooling pad material Gel
60. Process developed for Magic Gel cleaner for hidden surfaces of automobile and electronic gadgets
61. Process developed for high End Phosphorus fertilizer with Trace elements
62. Process developed for synthesis of Nano -Crystalline Cellulose from paper pulp
63. Submerged Fermentation Process for the Production of Bio-Protein Using Black Mold and Sugarcane Bagasse
64. Aflatoxin Detox Process: Scalable Detoxification of Aflatoxin-Contaminated Maize Using Safe Silica Adsorbents
65. Natural Bacteriocin-Based Biopreservation Process for Refrigerated Meat Shelf-Life Extension
66. Removal of Arsenic from Drinking Water Using Graphene Oxide-Immobilized Zero-Valent Iron and Sulfide System
67. Process developed for amino acid production from human and animal hairs to use in fertilizer
68. A Process for the preparation of Hemp Hydrating Sunscreen Spray
69. A Process for preparation of Hemp Body Massage Oil
70. A Process for preparation of Anti-Acne Oil Enriched with Hemp Extract
71. A Process for preparation of Hemp seed Cuticle and Nail oil
72. A Process for preparation of Hemprise-Eye Serum
73. A Process for preparation of Hemp Mud Mask

5) Equipment Developed:

1. **ILD/Fab/2023-20668** Hotplate
2. **Muffle Furnace** (1000°C)
3. **ILD/Fabrication-2024-26590** Water (Digital Temperature Controller) RWB-01/23
4. **ILD/Fabrication-2024-26399** Rota Mantle (100ml)
5. **ILD/Fabrication-2024-26399** Rota Mantle (500ml)
6. **ILD/2024-26524-1** Portable Digital Meter
7. **ILD/2024-26524-2** Deionised Plant
8. **ILD/ -2024-30539-1** Conductivity Meter
9. **ILD/ -2024-30539-2** pH Meter
10. **ILD/FAB-2024-31410** Fabrication of Color Assessment Box
11. **ILD/FAB-2024-31360** Designing & Fabrication of Deionized Water Plant
12. Design & Development of Micro bacterial Incinerator (500-900 ºC)
13. **ILD/Supply-2024-33566-1**Water De-Ionizer (Model: WDI-1/02)
14. **ILD/Supply-2024-33566-2** Water De-Ionizer
15. Micro Bacterial Incinerator

6) Exhibition / Workshop/ Training/ Conferences / Seminars Organized:

1. **Non- Destructive Testing (NDT)**: A seminar was organized and conducted by APC&IC team regarding the introduction of NDT and its various methods and certifications. Around 43 Participants attended the seminar.
2. **Mutual Funds by Atlas Asset Management:** Financial advisors and senior management of M/s. Atlas Asset Management conducted seminar session with employees of PCSIR about their mutual funds and other products. This session was useful for those interested to avail these facilities. This seminar was attended by most of the employees of KLC.
3. **Health Care Expo & Conference (Global Collaboration for Better Healthcare):** The PCSIR-KLC has commenced install, from advices obtained from Director General KLC, Dr. Hafiz Rab Nawaz, and Director P&D, Dr. Razia Sultana, and marketing cell of KLC. The PCSIR-KLC products at install are demonstrated with the help of CDLE and Officers of CDLE, PRC and APC&IC (Calibration Section) performed duties at install for three days.

7) MoU / ToR Signed:

1. A ToRs signed between PCSIR Labs. Complex Karachi and M/s. Dollar Industries Pvt. Ltd. Karachi relating to “transfer of process of Pencil Durability testing/ method on 28.08.2023
2. A ToRs signed between PCSIR Labs. Complex Karachi and M/s. A. K Brothers, Karachi transfer of technology of: “Skin Whitening Cream “on 22.11.2023
3. A ToRs signed between PCSIR Labs. Complex Karachi and M/s. Al-Ibrahim Eye Hospital, Karachi regarding “Collaboration in R&D activities and development of Human Resources “on 01.11.2023.
4. A ToRs signed between PCSIR Labs. Complex Karachi and M/s. Qureshi Farms, Karachi. Regarding “Cultivation of Tissue Culture Sugarcane Crop “KLC-I” as a Seeding Material, on 30.11.2023
5. An MoU signed between PCSIR Labs. Complex Karachi and M/s. National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro, regarding “Collaboration in R&D activities and development of Human resources” on01.12.2023
6. A ToRs signed between PCSIR Labs. Complex Karachi and M/s. Ahnaad Enterprises, Karachi. Signed on 22.12.2023 regarding Grant of non-exclusive processes relating to Improving/ vetting and transferring on
7. Full Cream Mix Atti (for enhancing milk production with high content of fat).
8. Dairy Feed (blend of cereal, pulses and grains with molasses fort the improvement of milking animal health and also for the production of milk & weight).
9. Maize (Gluten for the dairy cows and buffalos for the increasing energy and development of immune e system)
10. Khull Plus (Meals and cackes of oil crops for the improvement of fats and milk production in animals).

11. KLC Signed ToRs with Dollar Industries:
12. KLC Signed MoU with National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro:
13. Memorandum of Understanding between PCSIR Labs. Complex Karachi and M/s. Engro Fertilizer Limited regarding cooperation and collaboration in R&D activities, studies and testing on 30.07.2024
14. Memorandum of Understanding signed between PCSIR Labs. Complex Karachi and M/s. Sayyed Healthcare Limited. Regarding cooperation and collaboration in R&D activities and testing on 29.08.2024
15. Memorandum of Understanding signed between PCSIR Labs. Complex Karachi and Sindh Madresatul Islam University, Karachi, titled "Cooperation and collaboration in Academic Research and Human Resource Development" 31st December, 2024
16. Memorandum of Understanding signed between PCSIR Labs. Complex Karachi and M/s. Jehan Food (Private) Limited regarding business collaboration of Black Tea quality testing in compliance to PS-493:2012. January 27, 2025
17. Memorandum of Understanding signed between PCSIR Karachi and Jinnah Sindh Medical University (JSMU) regarding Collaboration in R&D activities and Development of Human Resources on 14.02.2025
18. Contract has been Signed between PCSIR Karachi and M/s. Export Development Fund, Ministry of Commerce for Strengthening of PCSIR Karachi accredited Labs. for fruit and vegetables testing to enhance export on 10-02-2025
19. MoU signed between PCSIR KLC and M/s. Water Flow regarding testing of UPVC/CPVC Pipes and fitting on 24.03.2025
20. Contract signed between PCSIR Labs. Complex, Karachi and M/s. Getz Pharma (Pvt.) Ltd. for technical services such as analytical testing on 03.02.2025
21. Contract signed between PCSIR Labs. Complex, and M/s. Abbott Laboratories Pakistan Limited. for quality and testing of raw materials and finished goods on 20.02.2025
22. Memorandum of Understanding signed between PCSIR Karachi and M/s. Pelikan Pipe Industries (Pvt.) Ltd. regarding testing of UPVC/CPVC Pipes and fitting, on 17.04.2025
23. Memorandum of Understanding signed between PCSIR Karachi and M/s. Iqra University, North Campus, Karachi. Regarding "Co-operation and collaboration in academic Research and Human Resources Development"30.06.2025
24. Memorandum of Understanding signed between PCSIR Karachi and M/s. Boujee Traders regarding "Improvement and transferring of Processes"29.06.2025

8) ISO 17025 Activities:

The PCSIR Laboratories Complex, Karachi was awarded Accreditation by **PNAC** on30-01-2004 under Lab Code 002. Following Laboratories are accredited:

1. Chemical-Environment (424 accredited parameters, covering heavy metals, pesticides, drinking water, waste water, etc.)
2. Textile Lab (12 accredited parameters and ACRC has applied for extension of 02 parameters)
3. Chemical-Pharmaceutical (20 accredited parameters and PRC has applied for extension of 10 parameters)
4. Chemical-Food (10 accredited parameters and FMRRC has applied for extension of 01 parameter)
5. Food and Feed Safety Lab (69 accredited parameters)
6. Microbiology Lab (53 accredited parameters)
7. Calibration Lab (35 accredited parameters)

The 1st Surveillance assessment of sixth cycle was conducted on 22-24, February 2023 covering all above labs for existing and extension parameters.

2.2- PCSIR LABORATORIES COMPLEX, LAHORE



PCSIR Laboratories Complex, Lahore

Ferozpur Road, Lahore, Pakistan

Tel: 042-99230697

E-mail: llcpcsir@gmail.com

Website: www.pcsir.gov.pk



Name of the Head: Dr. Quratulain Syed
Designation: Director General
Tenure: 20th February, 2017 to 16th August, 2025

Pakistan Council of Scientific & Industrial Research (PCSIR), Laboratories Complex, Lahore (LLC), is a leading research and development hub comprising 11 specialized research centres. These centres are actively engaged in supporting national industry and various organizations by providing advanced scientific, technical, and industrial solutions across multiple disciplines.

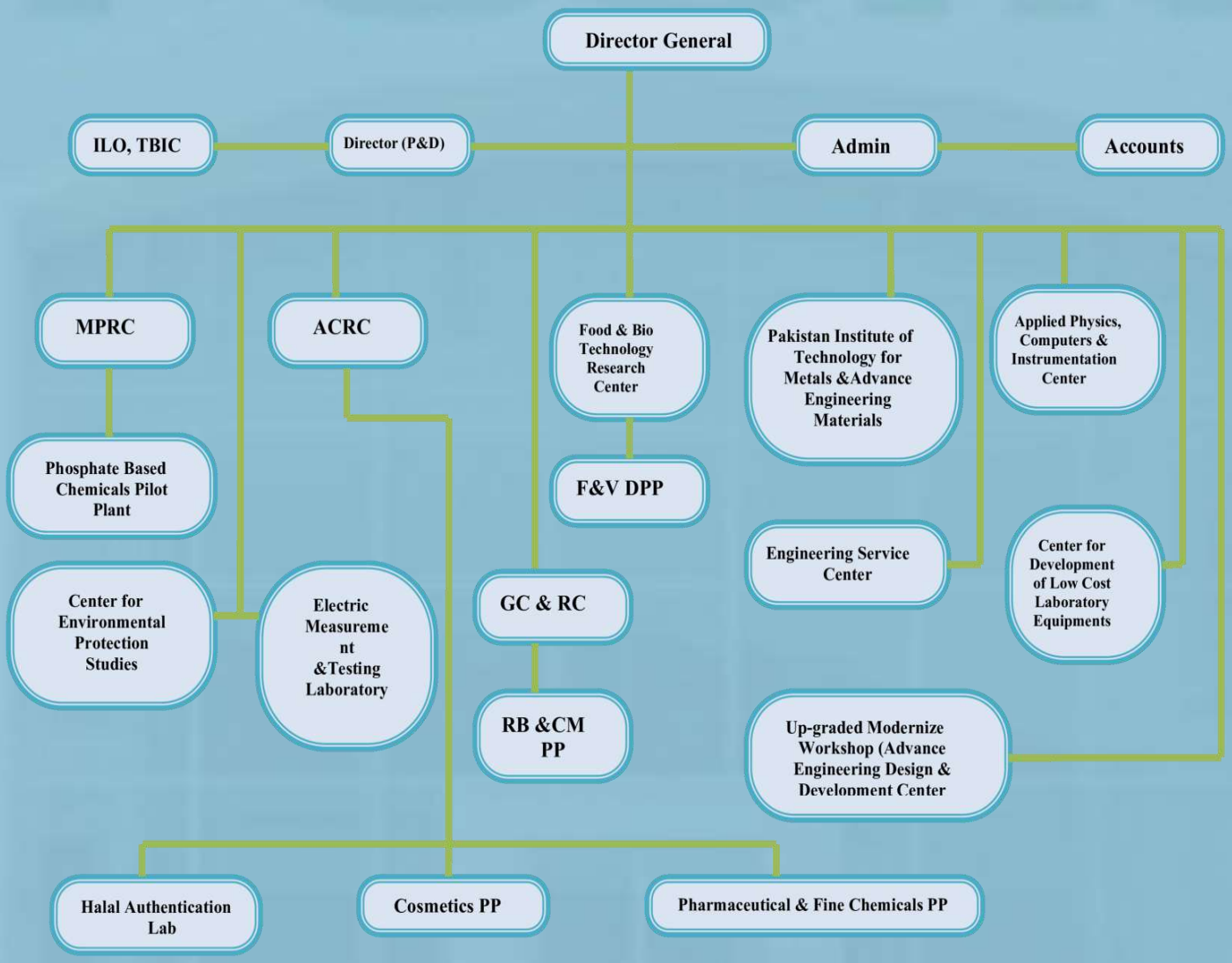
The centres operating under PCSIR Lahore include the Applied Chemistry Research Centre (ACRC), Applied Physics, Computers & Instrumentation Centre (APC&IC), Centre for Development of Laboratory Equipment (CDLE), Centre for Environmental Protection Studies (CEPS), Electrical Measurement and Test Laboratory (EMTL), Engineering Services Centre (ESC), Upgraded Modernized Workshop (UMW), Food & Biotechnology Research Centre (FBRC), Glass & Ceramics Research Centre (GCRC), Minerals Processing Research Centre (MPRC), and the Pakistan Institute of Technology for Minerals & Advanced Engineering Materials (PITMAEM).

These centres play a vital role in indigenous technology development, providing testing, calibration, and quality assurance services to meet the needs of local industry. Their contributions significantly support industrial innovation, product development, and compliance with international standards.

In addition to research and industrial services, PCSIR Lahore is actively involved in human resource development through its Precision System Training Centre (PSTC). The organization also provides academic and research guidance to students at various levels, including BS, MSc, MS/MPhil, and PhD, in collaboration with academic institutions across Pakistan.

Overall, PCSIR Laboratories Complex, Lahore serves as a key institution bridging scientific research, industrial application, and academic development to strengthen Pakistan’s socio-economic and technological progress.

ORGANIZATIONAL CHART



Important Events organized by LLC

PCSIR and PepsiCo Pakistan held a seminar on food safety, quality standards, and regulatory compliance





PCSIR and PepsiCo Pakistan jointly organized a seminar titled "Food Safety & Quality Begins with Me" on November 13, 2024, at PCSIR Laboratories Complex, Lahore, bringing together stakeholders from industry, academia, regulatory bodies, and civil society.

Speakers highlighted key aspects of food safety, including the role of research and development, industry standards, regulatory progress in Punjab, Islamic perspectives on food safety, and global compliance practices. PCSIR emphasized its role in advancing food safety through modern research facilities, while regulators and industry representatives stressed public participation and strict compliance with food safety laws. The Chief Guest underscored the importance of institutional responsibility and regulatory enforcement to ensure safe and healthy food for the public. The event concluded with a vote of thanks, distribution of mementos, and received coverage from major media outlets.

FAO Team Visits PCSIR, Lahore to Review Food Control Systems



A team from the Food and Agriculture Organization (FAO), including Dr. Martin David Rose, Scientist at the United Nations FAO and Assessor/Consultant for Food Control Systems, Ms. Oumou Barry, Lead Assessor/Consultant for FAO Food Control System Assessment, along with Dr. Zafar Mahmood and Mr. Ghulam Mustafa Dogar, visited the PCSIR Laboratories Complex, Lahore.

During the visit, the delegation met with the Director General, PCSIR Laboratories Complex, Lahore, to discuss national food control systems and areas of technical cooperation. The discussions focused on strengthening food safety infrastructure, improving regulatory frameworks, and enhancing laboratory-based monitoring systems in Pakistan.

The FAO team also visited various laboratories, including the aflatoxin analysis facility and other key testing laboratories, to evaluate PCSIR's analytical capabilities, quality assurance systems, and ongoing research activities. The visit underscored the importance of collaboration in strengthening food safety standards and reaffirmed PCSIR's role in supporting national and international food control initiatives through advanced scientific and technical expertise.



Toyota Tsusho Corporation Delegation Visits PCSIR Laboratories Complex to Explore Collaboration in Mining and Mineral Analysis

Toyota Tsusho Corporation Pakistan, engaged in the mining sector, expressed interest in gaining deeper insight into Pakistan's mineral industry. In this regard, a delegation led by Mr. Yoshitomo Tanaka, a Japanese expatriate associated with Toyota Tsusho Corporation, visited PCSIR Laboratories Complex, Lahore, on 08 March 2024.



The meeting was held in the office of the Director General, PCSIR Laboratories Complex, Lahore, who warmly welcomed the delegation. Discussions highlighted PCSIR's role, its broad research scope, and its key expertise in mineral analysis and related scientific services.

The delegation was also given a detailed tour of several research centres, including the Applied Chemistry Research Centre (ACRC), Minerals Processing Research Centre (MPRC), and Pakistan Institute of Technology for Minerals & Advanced Engineering Materials (PITMAEM). During the visit, they were introduced to ongoing research projects and advanced instrumentation used for mineral characterization and analysis, aligned with their industrial requirements.



Both sides expressed optimism about establishing a mutually beneficial business and research collaboration in the future, particularly in the fields of mining and mineral development.

LCCI Delegation Visits PCSIR to Explore Research Services and Industrial Support Opportunities

A delegation from the Lahore Chamber of Commerce & Industry (LCCI), led by its President Mr. Kashif Anwar, along with Executive Committee Members Mr. Khadim Hussain, Mr. Raja Hassan Akhtar, and Ms. Fareeha Yonas, visited PCSIR on 11 March 2024.

The delegation was received by Dr. Quratulain Syed, Director General, PCSIR, who welcomed the members and presented a comprehensive overview of PCSIR's mandate, research activities, and the wide range of scientific and technical services offered to support industrial development in Pakistan.

During the presentation, the DG highlighted PCSIR's role in promoting innovation, providing testing and analytical services, and facilitating technology-driven solutions for various industrial sectors.

The visit aimed to strengthen linkages between PCSIR and the business community and explore potential areas of collaboration for industrial growth and economic development.





PPMA Delegation Led by Chairman Visits PCSIR Laboratories Complex Lahore to Strengthen Pharmaceutical Industry–Research Linkages

A delegation led by Mr. Mian Khalid Misbah-ur-Rehman, Chairman Pakistan Pharmaceutical Manufacturers Association (PPMA), visited PCSIR Laboratories Complex, Lahore, on 22 November 2023.

The delegation was warmly received by the Director General, PCSIR Laboratories Complex, Lahore. The Chairman PCSIR also participated in the meetings held with the delegation.



The meeting provided a platform to discuss matters of mutual interest, particularly focusing on strengthening collaboration between the pharmaceutical industry and PCSIR's scientific research and analytical facilities.



During the discussions, emphasis was placed on enhancing quality assurance systems, pharmaceutical testing services, regulatory compliance support, and research and development initiatives to meet the evolving needs of the pharmaceutical sector in Pakistan.

The delegation was briefed on PCSIR's state-of-the-art laboratories and ongoing scientific work supporting industrial growth. Both sides expressed a strong commitment to fostering closer cooperation between PCSIR and PPMA to promote innovation, improve product quality, and support the development of a robust pharmaceutical industry in the country.

1) Processes Leased Out:

1. Process Development on sewage Waste Water Treatment Plant.
2. Apricot Pulp
3. Brake Fluid Oil
4. Non-Newtonian Gel
5. Processing of Vegetable Oil
6. Sewage Waste Water Treatment Plant.
7. Waste Water Treatment.
8. Process development for the development of Garlic Paste
9. Process for the quality assurance of Wheat
10. Process for the development of flour
11. Mold Release Agent for Tough Tiles
12. Designing of Composition of Solvent for Shoe Adhesive
13. Hyoscyamine & Scopolamine Content in Hyoscyamus Niger Herb
14. Formulation & Quality Assurance of Honey Salajeet
15. Process Development on Sewage Waste Water for the Treatment plant installation
16. Process for the quality performance of Terbella 5th Extension
17. Process Validation of Fire Rated Door (Single Leaf) @ 120 mins
18. Chicken Cube
19. Garlic Powder and Paste
20. Chocolate coating for almond
21. Formulation and Quality Assurance of Salajeet
22. Process for liquid chocolate
23. Process for the quality evaluation of two Stone samples (saudu cream and mohmand cream)

24. Optimization the Enhancement of Impact Strength of HSLA Steel (strategic applications) through heat treatment by using multiple hardening
25. Fire Rated Double Leaf Door @ 120 mins.
26. Dish Wash Liquid
27. Meat Tenderizer mix
28. Shafai Atta for diabetic patients
29. Formulation and Quality Assurance of Honey Salajit plus
30. Hyoscyamine for Hyoscyamus Nigar
31. Stretto-V Gel, Tynolact Gel, Tynoseed Gel and Biocrevil Gel
32. Shoe Sole
33. Radiator Cleaner
34. Formulation of classic Pan Masala
35. Validation of on Spot (Qualitative Analysis) Spice Adulteration Testing Kit Developed by Punjab Food Authority
36. Dish Wash Liquid
37. Medicated Products
38. Mango Instant Energy Booster
39. Process Validation of LPG Composite Cylinders (12.5 WLC)
40. Herbal Base Activity Tablet
41. Cat and Kitten Food
42. Extraction of Gold Sand
43. Sewage Waste Water Treatment
44. Complete Solution of for Sustainable Utilization of Water for Aquaculture
45. Process Development on Sewage Waste Water Treatment
46. Process Development on vehicle testing
47. Process Development on Industrial Waste Water Treatment
48. Activity Tablet
49. Method for Pesticide Residue Analysis of Tomato
50. Dye Box Lubricant Powder
51. Evaluation of Arsenic in Aqueous media.
52. Shelf-Life Studies of Phalsa Extract Packaged in Sachet
53. Mosquito Repellent
54. Almond Syrup
55. Evaluation of Concentrate for gold determination
56. Process Validation for Quality Assurance of central air supply tanks for dental instrument
57. Lime Scale Remover from Radiator
58. Evaluation of Industrial Waste Water samples for Treatability Potential of Samples from Sargodha.

59. Evaluation of Industrial Waste Water Samples for Treatability Potential of Samples from Sargodha.
60. Validation of Paper Based Test Strips for Milk Adulteration
61. Quality Assurance of Sweets
62. Process Validation for LPG Composite Cylinders
63. Process Development of Aluminum Bronze (Grade 95300) Alloy
64. Process Validation for Fusible Link
65. Nutritional assessment and quality assurance of bakery products
66. Nutritional assessment and quality assurance of bakery, confectionary, and nimko products
67. Quality assurance of Moringa Powder
68. Carbonated beverage with cumin Extract
69. Phosphoric Acid Evaluation
70. Iron Ore Beneficiation
71. Development of Copper Based Alloy, Aluminum Bronze Alloy
72. DOT-3 Brake Fluid
73. Method for Identification of Active Ingredients in Activity Tablet
74. Alca Blue (Printing offset Ink Cleaner)
75. Mineral profiling (Magnesium contents) of different seeds
76. Process for quality assurance of different masalas
77. Evaluation of total Suspended Solid in Industrial Waste Water.
78. Testing and analysis of Industrial waste water/sewerage water.
79. Evaluation of Material
80. Evaluation of Bauxite
81. Maintaining Fabric pH
82. PVC mixed Additives
83. Quality Assurance of Shilajit-Honey Drinks
84. Shelf-life Study of Ready to Use Food (RUTF).
85. Extraction of Low-Density Lipopolysaccharides from Lychee Seed Powder
86. Validation of LPG Composite Cylinders (27.5 & 47 WLC)
87. Quality Assurance of SMAR -2 Water
88. Super Gear, Drive Shaft with Machined Teeth (Detailed Teeth Profiling of Gears using Coordinate Measuring Machine.
89. Hair Dye Shampoo
90. Shoe Shiner
91. Measurement of AC/DC Leakage Current
92. Quality Control of Honey
93. Quality Assurance of Different Harbel Syrups (Sherbet Imli Alo Bakhara (sugar free), Sherbet Imli Alo Bakhara, Sharbet Badam, Sharbet Sandal)

94. Sharbate Badam
95. Beneficiation of Copper Ore
96. Fire Resistance Gypsum Boards & Concrete Blocks
97. Complete exhaustion of polymers and to achieve ultimate density
98. Glass Flange Repairing.
99. Evaluate Water for Irrigation Purpose.
100. Evaluate of Thermal Efficiency
101. Removal of smell from solvent (Kerosene)
102. Removal of odour from (Kerosene)
103. Leumef Suspension 30/180 mg per 5 ml
104. Immunity-Up Oil (Immunity booster)
105. Bakery Products Development
106. Physico-chemical and mechanical testing of ceramic tiles
107. Thermos-mechanical testing of ceramic body
108. Wear & Corrosion resistant (HEA) coating for reclamation of Engine Cylinder Head
109. Accelerated Ageing study of APD (Automated Peritoneal Dialysis) Disposable Set
110. Endotoxin in Mecobalam (Ampoules)
111. Refinement of Pyrolysis Oil
112. Clarification of Acid Treated Pyrolysis Oil
113. Validation of Strip-based Milk Adulteration Kit Developed by Punjab Food Authority
114. Pisum Sativum Powder
115. Quality Assurance of Pet Food
116. Quick Lime, Limestone
117. Rock Powder
118. Elemental Evaluation of Fly ash for Agriculture Purpose
119. Evaluation of Cement for its Failure for Construction
120. Radiator Flush
121. Brake Fluid DoT 4.0
122. Radiator Coolant
123. Method Development for Minoxidil & Finasteride
124. Method Development for the Estimation of Vet Product
125. Low Sodium Salt Product
126. Growth promotion of Culture media (peptone, TSB and Blood Agar)
127. Identification and quantification of different food dyes
128. Quality assurance of golden vinegar honey and Uqabbi (dietary supplement)
129. Beneficiation of Precious Metals Ore
130. Elemental composition and physical properties evaluation of bentonite use in drilling.

131. Quality evaluation of refractory material.
132. Shelf-life study of carbonated drinks
133. Quality assurance of different food dyes
134. Quality assurance of different food dyes
135. Quality assurance of brick sharbat-e-elaichi
136. Quality assurance and nutritional profiling of different sweets.
137. Quality assurance of khoya kulfi
138. Quality assurance of biscuits and food products
139. Evaluation of European WC.
140. Quality evaluation of Cement.
141. Quality evaluation of Cement.
142. Elemental oxide evaluation of the raw material for use in ceramics industry
143. Evaluation of ceramics tiles for industrial use
144. Evaluation of ceramics tiles as per ISO standards
145. Brake Fluid DOT-3
146. Quality Assurance of honey and murabha
147. Quality Assurance of honey different food dyes
148. Beneficiation of low-grade bauxite ore

2) Papers Published

i) International Publications

1. Noman Habib, Aamir Ali, Rony Mia, Shahid Rehman Khan & Muhammad Abdul Qayyum, Ultrasonic Assisted Sustainable Pollution Free Advanced Method for Isolation of Coloring Material from Amba Haldi (Curcuma aromatica) for Wool Dyeing, Science Progress, 106(3), 1-20, 19 July, 2023. IF: 2.6
2. Naaz Abbas, Sana Riaz, Sania Mazhar, Ramsha Essa, Maria Maryam, Yasar Saleem, Quratulain Syed, Ishrat Perveen, Bakhtawar Bukhari, Saira Ashfaq and Syed Hussain Imam Abidi, Microbial production of docosahexaenoic acid (DHA): Biosynthetic pathways, physical parameter optimization, and health benefits, Archives of Microbiology, 202, 205, 321, 2023. IF: 2.6
3. Faizullah Khan, Tariq Umar Khan, Shahid Masood, Muhammad Ashraf, Asma Saeed, Mrs. Alim-un-Nisa, Physico-chemical analysis of drinking water in populated villages of district Skardu, Advances in Food Technology and Nutritional Sciences, 9(1): 17-24, 2023.
4. R. Badar, A. Ahmad, M. Munazir, M. Asghar, F. Bashir, Wheat Leaf rust control through biofabricated zinc oxide nanoparticles, Australasian Plant Pathology, 13313-023-00949-1, Sept 2023. IF: 1.3

5. Naseem Zahra, Muhammad Khalid Saeed, Noor Fatima, Ezza Shehzad, Asma Saeed, Exploring the allure of strawberries, Innovare Journal of Agricultural Sciences, 11(5), 1-6, 2023.
6. Naseem Zahra, Muhammad Khalid Saeed, Hufsah Hamid, Abdullah Qamar, Asma Saeed, Nutritional composition, health benefits and potential applications of blueberry: a comprehensive review, Innovare Journal of Agricultural Sciences, 11(5), 7-13, 2023.
7. Muhammad Khalid Saeed, Naseem Zahra, Abid Sarwar, Najeebullah, Tariq Aziz, Shafiq ur Rahman, Tammana Ihsan, Metab Alharbi, Abdulrahman Alshammari and Abdullah F Alasmari, Oxygen reactive species effectively scavenged by various extracts of leaves and bark of Eucalyptus globulus, Journal of Chilean Chemical Society, 68(3), 5895-5900, 2023. IF: 0.8
8. Muhammad Khalid Saeed, Naseem Zahra, Adil Hussain, Asma Saeed, Quratulain Syed, Nutritional Scrutiny, Chemical Profiling and Antioxidant Potentials of Crude Extracts of Moringa oleifera Lam. (Moringaceae) from Kasur, Pakistan, Acta Pharmaceutica Sciencia, 61(4), 429-448, 2023. IF: 0.8
9. Yumna Sadef, Sidra Shakil, Dania Majeed, Naseem Zahra, Fethi BenAbdallah and Manel Ben Ali, Evaluating aflatoxins and Sudan dyes contamination in red chili, turmeric and its health impacts on consumer safety of Lahore, Pakistan, Food and Chemical Toxicology, 182, 114116, 2023. IF: 3.5
10. Najeeb Ullah, Malik Mujaddad-ur-Rehman, Muhammad Nadeem, Rubina Nelofer, Abid Sarwar, Tariq Aziz, Metab Alharbi, Abdulrahman Alshammari, Abdullah F Alasmari, Genetic Improvement of a Locally Isolated Bacillus cereus AUST-7 strain via Mutagenesis for Alkaline Protease Production and its Optimization using Artificial Neural Network (ANN), Biomass Conversion and Biorefinery, 1-11, 2023. IF: 4.3
11. Sidra Arooj, Tehreema Iftikhar, Sumaira Mustafa, Rubina Nelofer, Najeeb Ullah, Abid Sarwar, Tariq Aziz, Optimization of Critical Medium Components for lipase production by Neurospora crassa in Solid state fermentation, Biomass Conversion and Biorefinery, 1-14, 2023. IF: 4.3
12. Sunbul Rasheed, Atif ameen, Ammara Hassan, Evaluation of Antimicrobial Effect of Silver Nanoparticle Based Whey Emulsions and Edible Films for the Extension of Shelf Life of Fruits and Vegetables, Current Microbiology, 80(5), 158, 2023. IF: 2.3
13. Zafar Iqbal, Razia Kalsoom, Kashfa Rauf, Nadia Arshad, Iqra Zafar, M. Usman Sabri and Mubeen Akhtar, Proximate Analysis of Sesbania Bispinosa Seeds, World Journal of Engineering Research and Technology, 9(12), 32-40, 2023.
14. Zafar Iqbal, Razia Kalsoom, Kashfa Rauf, Nadia Arshad, Iqra Zafar, M. Usman Sabri and Mubeen Akhtar, Physicochemical Characterization of Sesbania Bispinosa Seeds Oil, World Journal of Engineering Research and Technology, 9(12), 41-49, 2023.
15. Zafar Iqbal, Razia Kalsoom, Kashfa Rauf, Nadia Arshad, Iqra Zafar, M. Usman Sabri and Mubeen Akhtar, Transesterification of Sesbania Bispinosa Seeds Oil for The Preparation of Biofuel, World Journal of Engineering Research and Technology, 9(12), 60-70, 2023.

16. Sumaira Nosheen, Farzana Habib, Muhammad Irfan, Bilal Waseem, Waqas Iqbal, Comparative Study of Proliferation of Bovine Albumin Serum on Different Metallic Substrates for Biomedical Applications, International Journal of Biomedical Materials Research, 2023.
17. Sarah Owdah Alomrani, Muhmmad Kaleem, Muhammad Aslam, Farzana Habib, Ahmad Jamal, Muhammad Waseem, Talha Javed, Abdul Wahid, Copper nanoparticles alleviate cadmium stress in Solanum melongena through endogenous melatonin and regulation of some physiochemical attributes, Scientia Horticulturae, 323, 112546, 2024. IF: 3.9
18. Hafiz Zulqurnain Raza, Anis Ali Shah, Zahra Noreen, Sheeraz Usman, Sadia Zafar, Nasim Ahmad Yasin, Shaban R.M. Sayed, Fahed A. Al-Mana, Hosam O. Elansary, Aqeel Ahmad, Farzana Habib, Muhammad Aslam, Calcium oxide nanoparticles mitigate lead stress in Abelmoschus esculentus through improving the key antioxidative enzymes, nutritional content and modulation of stress markers, Plant Physiology and Biochemistry, 206, 108171, 2024. IF: 5.3
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3) Patents Obtained:

1. A Multi-Mineral and Natural Flavonoids Products with Enhanced Bioavailability of Calcium, Magnesium, Phosphorus, Zinc and Iron. Ms. Shamma Firdous, Dr. Sajila Hina, Dr. Muafia Shafiq, 2024
2. Dr. Ijaz Ahmad, Dr. Quratulain Syed, Dr. Asma Saeed, Dr. Syed Hussain Imam Abidi , Acceptance Number (144460) dated 24.03.2025.

4) Products Ready for Commercialization:

1. Development of Dissolution Performance of Glimepiride on USP Type 2
2. Development of Fabric Starch Spray
3. Development of Glass Cleaner

4. Development of Hydraulic Oil 46
5. Development of Adhesive
6. Development of Endotoxin Tests in Ampoules
7. Development of Brake Fluid Oil
8. Development of Non-Newtonian Gel
9. Determination of Hyoscyamine & Scopolamine Content in Hyoscyamus Niger Herb
10. Development for Processing of Vegetable Oil
11. Development of Mold Release Agent for Tough Tiles
12. Development of Solvent for Shoe Adhesive
13. Development of Butyl from Para-formaldehyde and Butanol
14. Development of Hyoscyamine & Scopolamine Content in Hyoscyamus Niger Herb
15. Development of Ginseng & Ashwagandha Herbs
16. Development of Ink Plate Cleaner Paste
17. Development of Blue Hair Color
18. Development of Plate Cleaner for Offset Printing
19. Development of Fountain Solution for Offset Printing Machine
20. Development of Dish Wash Liquid
21. Development of Stretto-V Gel, Tynolact Gel, Tynoseed Gel and Biocrevil Gel
22. Development of sugar based Depilatory Wax
23. Development of Radiator Cleaner
24. Development of Non-Drip Disinfection Gel for Animal Teats
25. Development of Cold Brew Extraction of Cardamom
26. Development of Dish Wash Liquid
27. Development of Ginger Body Wash
28. Development of Ginger Hair Shampoo
29. Development of Ginger Anti Acne Cream
30. Development of Ginger Skin Lotion
31. Development of Ginger Scrub
32. Development of Ginger Anti-aging Cream
33. Development of Medicated Products
34. Development of Formulation of Cooling Gel based on Cannabis for Local Anesthetic Effects
35. Development of Hydraulic Oil 46 for Heave Duty Lifters
36. Development of NPK Slow-release Fertilizer
37. Development of Leather Polish
38. Development of Herbal Base Activity Tablet
39. Development of Nutraceutical Products
40. Development of Rose Hair Shampoo

41. Development of Rose Body Wash
42. Disinfectant for Dairy Farms
43. Preparation of Spin Finish Oil for Textile
44. Development of Activit Tablet
45. Development of Herbal Product (Gloven Capsule)
46. Development of Herbal Product (Ginagile Effervescent Tablets)
47. Development of Herbal Product (Oramint Plus Mouth Wash)
48. Development of Herbal Product (Calas Syrup)
49. Development of Lip Tint
50. Development of Liquid Detergent for Infants
51. Development Acid Orange Dye from Sulfuric acid & Beta Naphthol Coupler
52. Extraction of Essential Oil from Ginger and its Stability using Antioxidants
53. Development of Shiner for Shoes
54. Development of Polishing Compound for Surgical Tools
55. Development of Vitamin-C Skin Serum
56. Development of Reactive Violet Dye with Vinyl Sulfone Para Ester & H-Acid
57. Process for the preparation of ready to eat spicy bread
58. Process development for shelf life of Himalayan Pink Salt
59. Anti-dandruff hair tonic
60. Rose candy
61. Preserved sugarcane juice
62. Process development for processing of apricot pulp
63. Process development for the validation of on spot spice adulteration testing kit for PFA
64. RT-PCR based methods are developed for Halal species identification for Cow, Buffalo, Goat, Horse, Donkey, Dog, Boar (Pig)
65. RT-PCR based GMO methods are developed for Soya bean and G1 Garlic
66. Garlic Paste
67. Development of Golden syrup from indigenous sources
68. Chicken cube
69. Papaya leaves extract syrup
70. Natural food color extracted from Rubica cordifolia
71. Garlic Powder
72. Chocolate coating for almond
73. Synthetic vinegar

74. Process for liquid chocolate
75. Hemp Cat Biscuits
76. Hemp Dog Biscuits
77. RT-PCR based GMO method is developed for Soya bean meal-based animal feed
78. Method Development for evaluation of growth promotion in bacterial culture media
79. Moringa Olive Biscuits
80. Meat Tenderizer mix
81. Iron fortified plum fruit leather
82. Development of multigrain flour for diabetic patient
83. Process development for quality assurance of honey salajeet
84. Podina Raita recipe mix
85. Formulation and quality assurance of Honey King salajit plus
86. Germinated mung bean cookies enriched with antioxidants: a functional food
87. Isolation, Identification, Quantification and Confirmation of lactobacillus rhamnose by conventional and PCR methods
88. PCR and qPCR-based method development for the detection of probiotic strain “Lactobacillus”
89. Faba Meat
90. Process for the formulation of classic Pan Masala
91. Gluten free biscuits
92. Development of coffee macadamia nuts Jam
93. Development of wafers from watermelon rind
94. Mango Fruit Drink
95. Mosquito safe guard
96. Hemp ginger tea
97. Process for improvement of shelf life of dates
98. Hemp energy bar
99. Hemp coconut bar
100. Hemp strawberry flavored milk
101. Anti-acne powder
102. Process for preparation of cellulose from post waste textile fabric
103. Dried Ginger flakes
104. Jinjo Lemon drink
105. Development of Apple peel powder Tea
106. Development of process for formulation of cat and kitten food
107. Root Beat Powder
108. Root Beat Powder Drink
109. Strawberry Powder

110. Strawberry Powder Drink
111. Almond Rus
112. Organic mosquito repellent
113. Special Grade Aluminum Bronze Alloy as per ASTM
114. Copper based alloy (CuAl10Fe3) for manufacturing of Electrical components
115. Indigenous Aluminum Bronze alloy with High electrical conductivity
116. Aluminum Bronze alloy (C95400) for Electrical components of Power Distribution
117. Development of Nickel based alloy for Debeaking Blades
118. Haselloy coatings for wear resistyant applications by thermal spraying technique
119. Nickle-Chrome coatings (Wear/Friction resistant) for Cylinder Heads of Power Generation Plants
120. Aluminum based coatings (sacrificial anodic) for sub-marine environments by thermal spraying technique
121. Babbit coatings for corrosion resistance in 3.5% NaCl environments by thermal spraying system
122. Titanium (bio-compatible) coatings for surgical implants by thermal spraying technique
123. Aluminum Based Alloys
124. Cast Iron (Special Grades)
125. Copper based alloys
126. Steel (Special Grades)
127. Conducting Polymers
128. TCO Glass Slides
129. Hot Plate (upto 1000 ^{0}C) temperature
130. Process for Shelf-Life Studies of Phalsa Extract Packaged in Sachet
131. Bio-burden Analysis
132. Lychee Flavored Powder Drink
133. Food Supplement for Bone Health
134. Strawberry Fruit Instant Powder Drink
135. Process for Validation of Paper-Based Test Strips for Milk Adulteration
136. Pineapple Flavored Powder Drink
137. Peach Instant Fruit Powder Drink
138. Carbonated Beverage with Cumin Extract
139. Carbonated Beverage with Lemon Extract
140. Moringa Powder
141. Development of Dark Brown Color from Betel Nuts
142. Garlic Pickle
143. Preparation of Mango-Shilajit Drink Enriched with Natural Minerals and Antioxidants
144. Development and Shelf-Life Study of Ready-to-Use Food (RUTF)
145. Development of Gluten-Free Muffins and Biscuits

146. Extraction of Low-Density Lipopolysaccharides from Fruit Waste
147. Fababean Gluten-Free Baby Food
148. Preparation of Instant Orange Powdered Drink
149. Development of Garlic-Turmeric Tea
150. Fortification of Bread with *Terminalia arjuna* Bark Powder
151. Preparation of Dairy-Based Energy Drink
152. Procedure Development for Extraction of DNA from Animal Bones
153. Development of Garlic-Moringa Tea
154. Development of Low Glycemic Index Breakfast
155. Development of Jamun Carbonated Drink
156. Chia Seed and Watermelon Fortified Cookies
157. Development of Garlic-Cinnamon Tea
158. Process Development for Validation of Strip-Based Milk Adulteration Kit (PFA)
159. Development of Apple-Based Low Glycemic Index Breakfast
160. Development of Garlic Tea
161. Development of Kefir Milk
162. Development of Kefir Chocolate
163. Process Developed for Kefir Grains
164. Development of Garlic-Thymus Tea
165. Process for Shelf-Life Study of Carbonated Drinks
166. Process Developed for Quality Assurance of Taj Khoya Kulfi
167. Food Supplement for Eye Vision Improvement
168. High Electrically Conductive Aluminum Silicon & Magnesium Alloy
169. High Electrically Conductive Material (42100 Series)
170. Special Grade Aluminum Bronze Alloy (ASTM B584)
171. Copper-Based Alloy (CuAl10Fe3) for Electrical Components
172. Indigenous Aluminum Bronze Alloy with High Electrical Conductivity
173. Aluminum Bronze Alloy (C95400) for Power Distribution Components
174. Development of Nickel-Based Alloy for Debeaking Blades
175. Nickel-Chrome Coatings for Cylinder Heads (Wear/Friction Resistant)
176. Aluminum-Based Sacrificial Coatings for Submarine Environments
177. Babbit Coatings for Corrosion Resistance in 3.5% NaCl
178. Aluminum-Based Alloys
179. Cast Iron (Special Grades)
180. Copper-Based Alloys
181. Steel (Special Grades)
182. Conducting Polymers

183. Dye Box Lubricant Powder
184. Medicated Face Serum (Niacinamide + Hyaluronic Acid)
185. Wrinkle-Resistant Finish for Textiles
186. Lime Scale Remover for Radiators
187. Buffer Solution for Finished Fabrics
188. THC (1 mg) Soft Gel Formulation
189. Anti-Acne Medicated Serum
190. Brake Fluid (DOT-4)
191. Radiator Flush
192. DOT-3 Brake Fluid
193. Method for Identification of Active Ingredients in Activity Tablet
194. Alca Blue – Offset Ink Cleaner
195. Process to Maintain pH of Alkaline Fabric
196. Hair Dye Shampoo
197. PVC Mixed Additives
198. Starch Spray for Clothes
199. Development/Refinement of Slack Wax
200. Process to Maintain Fabric pH
201. Artist Color – Green
202. Artist Color – Red
203. Artist Color – Blue
204. Thinner for Shoe Adhesives
205. Shampoo-Based Hair Dye (Dark Brown)
206. Soap Bubble Solution
207. Shoe Shiner
208. Slime (Kids Toy)
209. Leumef Suspension 30/180 mg per 5 mL
210. Immunity-Up Oil
211. Process for Accelerated Stability Studies of Medical Devices
212. Process for Removal of Endotoxin in Mecobalam Ampoules
213. Pyrolysis Oil
214. Clarification of Acid-Treated Pyrolysis Oil
215. Soldering Wax
216. Radiator Flux
217. Minoxidil & Finasteride (Raw Material)
218. Method Development for Estimation of Veterinary Product
219. Low Sodium Salt Product

220. Cleaning Solution for Textile Printing Heads
221. Eco-Friendly Cleaning Solution for Printing Heads
222. Blue Erasable Marker Ink
223. Black Erasable Marker Ink
224. Edge Colour Top Coat (Leather)
225. Automobile Brake Lubricant
226. Soap-Based Facial Cleanser
227. Marble Polish

5) Equipment Developed:

1. Hot Air Forced Aging Oven with 1000 hr
2. Digital Dry Bath
3. Digital Drying Oven 60L
4. Autoclave
5. Heavy Duty Hot Plate with Separate Control
6. Test Tube Block
7. Heavy Duty Hot Plate with Separate Control
8. Hot Air Chamber for Cylinder Testing
9. Heating Mantle 2Lit
10. Heavy Duty Hot Plate 400↑C
11. Orbital Shaker Clump
12. Dry Block
13. UV Trans Illuminator
14. Muffle Furnace 1000°C
15. Muffle Furnace 1000°C
16. Digital Drying Oven 60L
17. Digital Melting Point Apparatus
18. Autoclave
19. Centrifuge
20. Muffle Furnace 1000°C
21. Muffle Furnace 1200°C
22. Digital Magnetic Stirrer
23. Heavy Duty Hot Plate 300°C (Separate control)
24. Heavy Duty Hot Plate 300°C (Separate control)
25. Heavy Duty Hot Plate 300°C (Separate control)

26. Heavy Duty Hot Plate 300°C (Separate control)
27. Rota Mantle 250 ml
28. Rota Mantle 250 ml
29. Rota Mantle 500ml
30. Rota Mantle 500ml
31. Digital Magnetic Stirrer Hot Plate
32. Digital Oil Bath Magnetic Stirrer
33. Digital Rota Mantle 250 mL
34. Muffle Furnace 1000°C
35. Gold Fire Assay Furnace 1200°C
36. Digital Melting Point Apparatus
37. Digital Drying Oven 30L
38. Bio Reactor
39. Random Impact Tester
40. Hot & Cold-Water Bath
41. Growth Chamber
42. Hot Incubator
43. Heavy Duty Hot Plate
44. Sintering Tube Furnace 1400°C
45. Bio Reactor (CSTR)
46. Digital Rectangular Water Bath
47. Air Detoxifier
48. BOD Digester
49. Drying Oven 60L (Digital)
50. Overhead Stirrer
51. Centrifuge
52. High Temperature Tube Furnace 1200°C
53. Thermostatic Dry Bath
54. Electric Resistance Furnace
55. Electric Resistance Furnace

6) Exhibitions/ Conferences/ Workshops/ Trainings/ Seminar/ Focus Group Meetings Organized:

1. Technical Discussion regarding Process Validation of Combination Fire & Smoke Damper
2. Evaluation of Fowler Beds as per provided specification by IRMNCH & Nutrition, Health Department, Lahore
3. Quality assurance/life assessment of Bucket Mounted Vehicles of LESCO

4. ISO Training on Technical Record & Handling of Test & Calibration Requirements
5. One day training session was organized on topic entitled “Technical Records of ISO 17025
6. Safety protocols for staff and building
7. Process Development of Nickel alloy for Debeaking Blade
8. Technical Discussion regarding ILC for ISO-17025:2017 (Mechanical & OES) and Thermal Characterization of materials
9. Development of Al-Bronze alloy (Grade 95300)
10. R&D collaboration and technical support for final year projects regarding the linkage between academia and R&D institutes
11. Process Development of Nickle based alloy for Debeaking
12. Technical Discussion regarding Material Characterization of Surgical Grade Materials as per ISO 17025:2017
13. Development of Al-Bronze alloy (Grade 95300)
14. Technical Discussion for solution of issue of M/s WAA Technology
15. Consultancy services for R&D work of shaving blades by using SEM analysis
16. Root Cause Analysis/Failure Investigation of Coal Hooper Wagons
17. Food Safety and Quality begin with me
18. Failure Investigation of Gear Power Take Off (PTO) and Pin Lower Link of Tractors
19. Technical Discussion regarding Root Cause Analysis of Wagon Hoopers of Pak Railways
20. Technical Discussion regarding Root Cause Analysis/Failure of PTO Gear Assembly of tractors
21. Technical Discussion regarding SEM/EDX analysis of Blades for R&D work
22. Bio-industry: The Future Industry of Pakistan. Industrial- production challenges and opportunities
23. A special lecture by Mr. Saeed Anwar
24. Research Collaboration with Frontier Force (FF)
25. Collaboration with Fangrow
26. Testing of Sanitary Items in compliance with ISO standards for export purposes
27. Process Validation for Fire Rated Doors in compliance with UL 10C & NFP 252
28. Contract of services for destructive testing and material analysis for different projects
29. ISO-17025 Certified and EPA approved Lab.
30. Analysis of Forest Waste
31. Analysis of wastewater from the ISO-17025 Certified Lab.
32. Analysis of wastewater for Oil & Grease test.
33. Analysis of wastewater sample from the ISO-17025 Certified Lab.
34. Mercury Analysis of cream samples
35. Mercury analysis of Beauty Products from the ISO-17025 Certified and EPA approved Lab
36. Analysis of Wastewater from the ISO-17025 Certified Lab

37. Analysis of Cream samples from the ISO-17025 Certified and EPA approved Lab
38. Analysis of Poultry waste
39. Wood samples for Gross Calorific value & NCV
40. Analysis of Wastewater for COD & BOD from ISO-17025 certified Lab.
41. Analysis of Different Beauty Products from the ISO-17025 Certified and EPA approved Lab
42. Mercury Analysis of cream samples from the ISO-17025 Certified and EPA approved Lab.
43. Analysis of Wastewater for COD & BOD from ISO-17025 certified Lab
44. Analysis of Diesel sample

7) MoU / ToR / Job Contracts / Business Contract Signed:

1. To Develop a Process for the Calcination of FLL Ore (Local rock Phosphate & Imported rock) and To Develop a Process for the
   Calcination of FLL Ore (Local rock Phosphate & Imported rock), with Fatima Fertilizer Company Ltd., (FFL)
2. Testing of FCEPL Products (Liquid Tea Whitener, Powder Tea Whitener, Packaged Liquid Milk, Ice Cream & Frozen Desserts, Full Cream Milk Powder, Desi Ghee, Creams, Flavored Milk, Milk Powder Vegetable Fat Based, Cheese (Cheddar & Mozzarella) (MoU)

8) Workshops / Trainings Organized:

- Hands-on Training on Application of FTIR
- Onsite Demonstration of Fermentation Processes at Coway International, Beijing, China
- Training on Method Verification & Validation under ISO/IEC 17025:2017
- Training on ISO/IEC 17025:2017
- Comprehensive Hands-on Training on Fermenter Operation and Maintenance
- Quality Control in Beverage Production
- Training on HPLC (Fat-Soluble Vitamins)
- Training on Calibration of Installed Electromedical and Mechanical Equipment
- ISO/IEC 17025: Non-Conformance, Corrective Action & Root Cause Analysis
- Operational Training of Bio Reactor
- ISO/IEC 17025: Improvement Analysis
- Document Review, Document Control & Quality Objectives
- ISO/IEC 17025: Measurement of Uncertainty
- ISO/IEC 17025: Risk Assessment & Measurement of Uncertainty
- Operation of Impact Tester
- Toxicity Testing Training

- Vegetable & Fruit Dehydration
- Training on Measurement Uncertainty & ISO/IEC 17025:2017
- Training on Testing of Refrigerators
- Awareness of ISO/IEC 17025:2017 Requirements
- Use of Gadgets for Mechanical Cutting
- Testing of Electric Fans & Motors (Performance / Safety)
- Testing of Current Transformers (LT, HT)
- Test Sample Handling & Preparation
- Test Methods / Procedures
- Testing of Cables
- Testing of Lighting Products
- 2D Laser Leveler Use
- Safety Precautions / Measures
- Risk Management
- Internal Audit
- Safety Measures Required for Hand Grinder in Workshop
- Angular Cutting to Set Angle
- Training: Application of Flow Cytometer
- Training: Application of Seq Studio Genetic Analyzer for DNA Sequencing
- Training: DNA Sequencing on Seq Studio & Analysis using Gene Mapper and SeqA 7
- Training on HPLC & GCMS
- Operational Training of Sintering Tube Furnace
- ISO Training: Risk Assessment, SWOT Analysis, Corrective Action & Non-Conformance
- ISO Training: Decision Rule, Statement of Conformity, Opinion & Interpretation in Reporting Results
- ISO Training: Improvement Analysis
- CAS Science Gala UAF – International D-8 Bioinformatics Boot Camp 2025 (Two Weeks): “Eight Nations, One Global Leap – Data Science”
- Training on Ion Chromatography for PO_4 Analysis (ISO 17025 Lab)
- Industrial Bioproduct Development & Bioprocessing

2.3- PCSIR LABORATORIES COMPLEX, PESHAWAR



PCSIR Laboratories Complex, Peshawar

Jamrud road, Peshawar, Pakistan

Tel: 091-9222166

E-mail: plcpcsir@gmail.com

Website: www.pcsir.gov.pk



Name: Mr. Jehangir Shah
Designation: Director General
Tenure: July 2023 to June 2025.

PCSIR Laboratories Complex, Peshawar, established in 1955, is one of the key regional research and development institutions of the Pakistan Council of Scientific and Industrial Research (PCSIR). It was founded with the primary objective of systematically exploring and evaluating the natural raw material resources of the Khyber Pakhtunkhwa (KPK) region and converting them into value-added products to support the country's industrial growth and economic development.

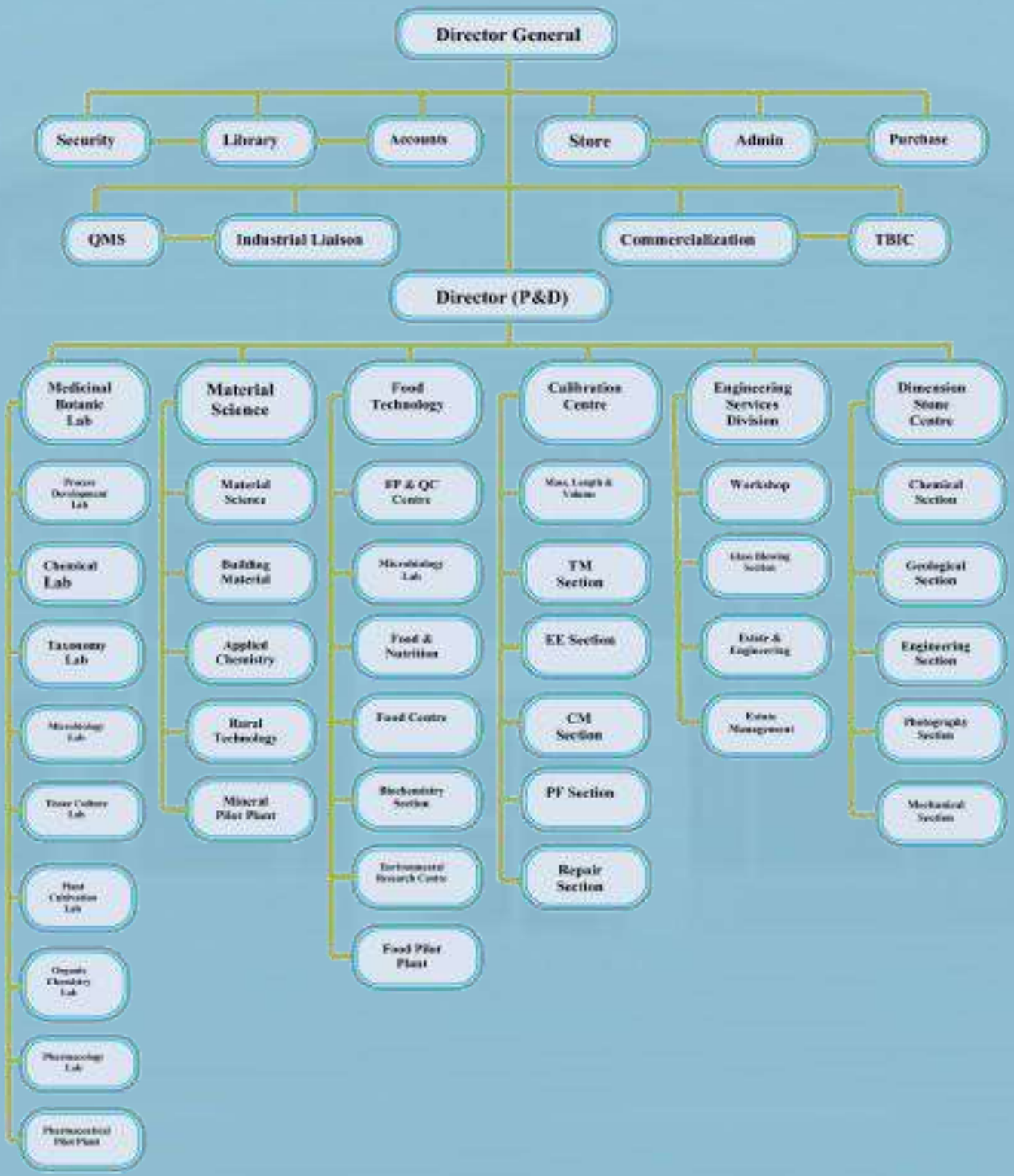
The Complex operates through six major specialized Centres, each dedicated to distinct scientific and technological domains. These Centres collectively provide a wide range of technical services, testing facilities, and consultancy support to local industries, government departments, and non-governmental organizations. Their services are designed to address practical industrial challenges, improve product quality, and promote the efficient utilization of indigenous resources.

In addition to service provision, PCSIR Laboratories Complex, Peshawar plays a significant role in applied research and technology development. The Centres focus on developing cost-effective and locally adaptable technologies based on indigenous raw materials, thereby reducing dependence on imported inputs and strengthening self-reliance in key industrial sectors.

Furthermore, the Complex actively contributes to human resource development by offering research supervision and academic guidance to students from various government universities across KPK. Students pursuing degrees in science and technology disciplines benefit from hands-on exposure to laboratory research, experimental methodologies, and industrial applications, which enhances their academic and professional capabilities.

Overall, PCSIR Laboratories Complex, Peshawar serves as a vital bridge between scientific research, industrial application, and academic development, contributing significantly to regional innovation and national industrial progress.

ORGANIZATIONAL CHART



Important Events organized by PLC

Meeting of the Cannabis Regulatory Committee (CRC)







Honorable Director General, PLC, Mr. Jehangir Shah, and Dr. Hina Fazal, Focal Person for Cannabis, attended the introductory meeting of the Cannabis Regulatory Committee (CRC) held in the Conference Hall of the Directorate General, Excise, Taxation & Narcotics Control, Hayatabad, on 02 June 2025.

The CRC was constituted under the Khyber Pakhtunkhwa (Cultivation, Extraction, Refining, Manufacturing and Sale of Derivatives of the Cannabis Plant for Medicinal, Research, Industrial and Commercial Purposes) Rules, 2025. The meeting was jointly chaired by the Honorable Minister for Excise, Taxation & Narcotics Control, Khyber Pakhtunkhwa, and the Honorable Minister for Agriculture, Khyber Pakhtunkhwa.

Representatives from various government departments attended the meeting and shared their views and recommendations regarding the expeditious implementation of the licensing process for cannabis cultivation and processing in the province. The meeting formally inaugurated the Cannabis Regulatory Committee (CRC) in accordance with the KP Cannabis Rules, 2025.

The Chairpersons highlighted the committee's pivotal role in regulating and overseeing the emerging medicinal, research, industrial, and commercial cannabis sector in Khyber Pakhtunkhwa. The legal and procedural framework established under the KP Cannabis Rules, 2025, was presented as the foundation for the CRC's functions and responsibilities.

Dr. Hina Fazal, in her capacity as the designated Focal Person for Cannabis, provided valuable insights and updates concerning the coordination and implementation of cannabis-related initiatives. The meeting marked a significant milestone in the operationalization of the province's cannabis policy framework.

The discussions underscored the Government's commitment to facilitating a transparent and efficient licensing regime, signaling a transition from policy formulation to practical implementation and industry development in Khyber Pakhtunkhwa.

Agriculture Department Holds Key Meeting on Hemp Policy and Commercialization



A high-level meeting on the Hemp Policy, Commercialization Project, and CBD (Cannabidiol)-Based Alternative Livelihood Initiatives was held on 08 April 2024 in the Committee Room of the Agriculture Department. The meeting was chaired by the Secretary Agriculture and attended by senior officials and stakeholders, including the Director General, Pakistan Livestock Commission (PLC), Mr. Jehangir Shah, and Dr. Hina Fazal, a leading expert in agricultural innovation and cannabis-related research.

The meeting focused on advancing Pakistan's hemp industry through the development of effective policy frameworks, commercialization strategies, and the promotion of CBD-based initiatives aimed at creating sustainable livelihood opportunities for rural communities. The Secretary Agriculture emphasized the importance of establishing a robust regulatory environment to ensure ethical cultivation, processing, and marketing practices while enabling the country to capitalize on emerging global markets for hemp-derived products.

During the session, the PLC delivered a comprehensive presentation on the cultivation, processing, and value-added product development of industrial hemp. The presentation highlighted the crop's significant economic, industrial, and medicinal potential, as well as its capacity to contribute to agricultural diversification and rural development.

Dr. Hina Fazal underscored the importance of science-based policymaking, research-driven cultivation practices, and farmer capacity-building programs to ensure product quality, regulatory compliance, and sustainable sector growth. The participants also discussed key challenges facing the hemp industry, including public misconceptions surrounding cannabis and the need for awareness and education campaigns to distinguish industrial hemp from narcotic cannabis varieties.

The Agriculture Department reaffirmed its commitment to fostering collaboration among government agencies, research institutions, and private-sector stakeholders to support the development of a competitive and sustainable hemp industry in Pakistan. The participants agreed on the need for continued consultations, pilot initiatives, and policy refinement to facilitate the responsible growth of the sector.

The meeting marked an important step toward promoting climate-resilient crops, diversifying agricultural income sources, and unlocking new economic opportunities through the commercialization of industrial hemp. The initiative aligns with broader national objectives of sustainable agricultural development, innovation, and inclusive economic growth.

Visit of the Advisor to Chief Minister on Industries to PCSIR Laboratories Complex, Peshawar for Review of Material Science and Mines & Minerals Act 2025



The Advisor to the Chief Minister on Industries, Mr. Abdul Kareem Tordher, visited the PCSIR Laboratories Complex, Peshawar on 22-04-2025. During the visit, detailed discussions were held regarding the available pilot plant facilities at the Material Science Center, with a focus on advancements in material technology and their industrial applications.

The Advisor engaged in comprehensive deliberations with the Director General, PCSIR, and the Material Science team on key provisions of the Mines and Minerals Act 2025, exploring avenues for collaboration and policy enhancement aimed at strengthening the mineral sector of the region. The discussions emphasized the critical role of scientific research in promoting sustainable mining practices and supporting long-term economic growth.

Both sides focused on the capabilities of the Material Science Center's pilot plant facilities, which support innovation in material technology, including the development of advanced composites, ceramics, and metallic materials. These developments were highlighted for their potential industrial applications in sectors such as manufacturing, construction, and energy, thereby contributing to the growth of local industry.

The Director General, PCSIR, and material science experts reviewed and discussed important clauses of the proposed Mines and Minerals Act 2025, which aims to modernize governance of the mining sector by addressing regulatory gaps, improving community engagement, and strengthening environmental safeguards.

The meeting also highlighted policy reforms intended to streamline regulations, attract investment, and promote ethical mining practices in the mineral-rich areas of Khyber Pakhtunkhwa. The participants emphasized the integration of scientific research, including mineral processing and environmental impact assessments, into policymaking processes.

The session underscored the importance of research and development in driving policy innovation and industrial growth, positioning PCSIR as a key institution in advancing Pakistan's transition toward a technology-driven and sustainable mineral economy.

PCSIR Laboratories Complex, Peshawar Signs MoU with Peshawar Medical College for Concessional Laboratory Services





A Memorandum of Understanding (MoU) was signed between the Pakistan Council of Scientific and Industrial Research (PCSIR) Laboratories Complex, Peshawar and Peshawar Medical College on 14-03-2025.

Under this agreement, the allied hospitals of Peshawar Medical College, namely Kuwait Teaching Hospital, Mercy Teaching Hospital, and Prime Hospital, will provide laboratory services and diagnostic tests in specialized disciplines such as Histopathology, Microbiology, and Molecular Biology at a 20% discounted rate for employees of PCSIR Peshawar.

This initiative is expected to significantly reduce the healthcare-related financial burden on PCSIR employees and their families, thereby improving access to quality diagnostic facilities.

The management of PCSIR Peshawar has highly appreciated this philanthropic and welfare-oriented gesture by Peshawar Medical College, recognizing it as a meaningful step toward employee facilitation and institutional collaboration in the healthcare sector.

Technical Staff from Chashma Nuclear Power Complex Visit AMRE Centre, PCSIR Laboratories Complex Peshawar



On August 30, 2024, technical staff from the Chashma Nuclear Power Complex visited the Additive Manufacturing and Reverse Engineering (AMRE) Centre at the PCSIR Laboratories Complex, Peshawar.

During the visit, the AMRE Centre team provided a comprehensive introduction to all available 3D printing systems installed at the facility. The demonstration showcased the capabilities, technical features, and potential industrial applications of various 3D printing technologies.

The primary objective of the visit was to support the indigenization of the metal 3D printer. In this regard, the AMRE project technical team delivered a detailed briefing to the visiting delegation, highlighting the project scope, operational processes, and installed equipment. The distinguished guests particularly expressed keen interest in the metal 3D printing system and encouraged the team to prioritize detailed discussion on this technology.

Later, the delegation visited various laboratories of the Complex and showed strong interest in the advanced machinery and equipment. The visit emphasized the potential for mutual coordination and collaborative efforts to strengthen research and development initiatives and promote technological advancement.

PCSIR–KPEZDMC MoU on Marble Waste Utilization and Technology Transfer

A Memorandum of Understanding (MoU) was signed on 19 April 2024 between PCSIR Laboratories Complex, Peshawar and KPEZDMC to promote environmentally sustainable use of marble and granite waste through technology transfer.

The agreement, witnessed by Mr. Abdul Karim Tordher, Special Assistant to the Chief Minister of Khyber Pakhtunkhwa, focuses on establishing a mechanical plant for converting marble slurry into useful products. PCSIR will transfer three technologies—Textured Marble, Food Grade Calcium Carbonate, and Coated Calcium Carbonate—for Rs. 3.00 million.

The initiative addresses environmental challenges caused by marble industry waste in Khyber Pakhtunkhwa and aims to promote industrial sustainability. It also includes plans for slurry management systems, sedimentation tanks, and improved waste disposal mechanisms, supporting both environmental protection and economic development.





PCSIR–NAVTTC MoU for CNC Machine Operations Training Program

PCSIR Laboratories Complex, Peshawar and NAVTTC signed an MoU on 26 February 2024 to launch a funded training program in CNC machine operations for 20 selected participants.



The program provides theoretical and hands-on training in CNC setup, programming, tooling, and troubleshooting, developed jointly by PCSIR and NAVTTC experts. Participants will be trained through lectures and practical sessions on CNC machines and assessed through exams and project work. Successful candidates will receive certification along with post-training support for job placement, aiming to enhance technical skills and employment opportunities in the engineering and manufacturing sectors.

One-Day Seminar on Dimension Stones Summit Held at PLC for Knowledge-Based Economy





PCSIR Laboratories Complex, Peshawar organized a one-day seminar titled "Dimension Stones Summit: Uniting for a Knowledge-Based Economy" on 11 June 2024. The objective of the event was to explore the potential and diversification of the marble industry in the context of a modern knowledge-based economy.

The event was graced by Mr. Zahir Shah Toru, Provincial Minister for Food, Khyber Pakhtunkhwa, as Chief Guest, while Mr. Fuad Ishaq, President Sarhad Chamber of Commerce and Industry, attended as Guest of Honour.

In his address, the Chief Guest emphasized the need for close collaboration between scientists, engineers, and industry stakeholders to develop innovative approaches for utilizing the province's vast mineral resources. He noted that Khyber Pakhtunkhwa could generate significant economic benefits from the marble sector through the adoption of modern technologies and advanced extraction techniques. He also appreciated PCSIR's efforts in promoting the marble industry and stressed the importance of a coordinated strategy for economic growth.

Director General PCSIR Laboratories Complex, Mr. Jahangir Shah, highlighted the achievements of the Dimension Stones Centre, which is equipped with advanced machinery for marble cutting and polishing. He also noted that the centre is actively engaged in human resource development in collaboration with NAVTTC, HOPE-87, KP TEVTA, the Department of Industries and Technical Education, Sarhad Rural Support Programme, and other organizations. These training programs aim to equip trainees with modern skills in marble processing, value addition, and production of export-quality marble and mosaic products.

Other speakers, including representatives from APMIA, Mines and Minerals Department KP, KPEZDMC, and academia, emphasized the importance of upskilling and reskilling to enhance the competitiveness of the marble sector in global markets.

The seminar brought together stakeholders from industry, academia, and government to discuss strategies for promoting the marble sector in Khyber Pakhtunkhwa through knowledge-based economic approaches. The brainstorming session focused on innovation, value addition, and export enhancement opportunities.

The event concluded with a collective commitment to strengthen partnerships among stakeholders to develop a sustainable and competitive marble industry in the province, aligned with the vision of a knowledge-based economy.

One-Day Seminar on Adoption of Innovative Techniques for Agro-Food Production and Value Addition









An interactive and awareness-raising seminar on "Adoption of Innovative Techniques for Agro-Food Production and Value Addition" was organized at PCSIR Laboratories Complex, Peshawar on 28 December 2023 under the PSDP project titled "Research, Development & Innovation (RD&I) in Pakistan Council of Scientific & Industrial Research (PCSIR)."

Experts and speakers from various departments of PCSIR highlighted the importance of adopting modern and innovative agricultural techniques, particularly vertical farming, to enhance food production in Pakistan. It was emphasized that due to increasing population pressure and the continuous reduction in arable land, vertical farming offers a viable solution for achieving food security and self-sufficiency.

The discussion also stressed the importance of utilizing indigenous resources for the development of agriculture and industrial sectors, along with promoting export-oriented growth. Participants noted that demand-driven science and technology research, along with skilled human resource development through specialized training, plays a key role in industrialization and socio-economic progress.

It was further highlighted that Pakistan possesses vast natural resources, including manpower, water, hydropower, marine resources, rivers, and mineral wealth, which can significantly contribute to economic development if properly utilized.

The seminar was attended by participants from academia, government organizations, industry, and the farming community, making it a multidisciplinary platform for knowledge sharing and awareness.

1) Processes Leased Out:

1. Process of Red Chili Sauce
2. Pigment Orange -13
3. Process for Production of Cultured marble from marble waste
4. Process for Production of Food grade calcium carbonate from marble waste/slurry
5. Process for Production of Coated calcium carbonate from marble waste/slurry
6. Process for Production of Cultured marble from waste

2) Papers Published

i) International Publications

1. Dr. Mahmood Iqbal, Dr. Manzoor Iqbal, and Shaheen Wali. *Synthesis, Characterization and Application of Karak Bentonite Clay-Graft-Poly (Acrylamide/Co-Acrylic Acid) Superabsorbent Composite and Its Absorption Study for Selected Heavy Metals*. *Journal of the Chemical Society of Pakistan*, 45(3), 2023. Impact Factor (IF): 0.6.
2. Muhammad Ilyas, Dr. Waheed Ur Rehman, and Amin Ur Rahman. *MXene-based 2D $Ti_3C_2T_x$ Nanosheets for Highly Efficient Cadmium Adsorption*. *Journal of Water Process Engineering*, Accepted, 2023. Impact Factor (IF): 7.0.
3. Abdul Wajid Khalil, Zafar Iqbal, Achyut Adhikari, and Javed Abbas Bangash. *Spectroscopic Characterization of Eupalitin-3-O-β-D-Galactopyranoside from Boerhavia procumbens: In Vivo Hepatoprotective Potential in Rat Model*. *Journal of Molecular and Biomolecular Spectroscopy*, 2023. Impact Factor (IF): 4.4.
4. Jehanzeb Khan, Waqas Ahmed, Muhammad Waseem, Wajid Ali, Inayat ur Rehman, Ihtisham Islam, Hammad Tariq Janjuhah, George Kontakiotis, George D. Bathrellos, and Hariklia D. Skilodimou. *Lowari Tunnel Water Quality Evaluation: Implications for Tunnel Support, Potable Water Supply, and Irrigation in Northwestern Himalayas, Pakistan*. *Applied Sciences*, 13, Article 8895, 2023. Impact Factor (IF): 0.44.
5. Javid Ali, Arshad Hussain, Muhammad Siddique, and Zia Ur Rahman. *Evaluation of Some Bioactive Compounds of Azadirachta indica Extracts and Its Application as Safe Fungicide Against Different Plant Pathogenic Fungi*. *International Journal of Engineering, Science and Technology*, 16(1), 44–54, 2024. Impact Factor (IF): 7.155.
6. Waseem Sardar, Gohar Ali, Fengchun Jiang, Ahmad Nawaz, Salman Khan, Muhammad Zubair, Dawar Khan, Mahmood Iqbal, and Taejoo Park. *Systematically Designed g-C_3N_4/rGO/MoS_2 Nanocomposite for Enhanced Photocatalytic Performance*. *Current Applied Physics*, 57, 42–48, 2024. Impact Factor (IF): 2.89.

7. Imran Ud Din, Said Muhammad, Inayat ur Rehman, and Cem Tokatli. *Spatial Distribution of Potentially Toxic Elements, Contaminations and Risk Indices of Water and Sediments in the Darband and Samana Streams, Pakistan*. *Environmental Monitoring and Assessment*, 2023. Impact Factor (IF): 3.3.
8. Imran Ud Din, Said Muhammad, Shah Faisal, Inayat ur Rehman, and Wajid Ali. Heavy Metal(loid)s Contamination and Ecotoxicological Hazards in Coal, Dust, and Soil Adjacent to Coal Mining Operations, Northwest Pakistan. Journal of Geochemical Exploration, 2023. Impact Factor (IF): 4.2.
9. Hayat Ullah, Wajid Ali, Said Muhammad, Danish Ather, Jehangir Ijaz, Inayat ur Rehman, and Imran Ud Din. Heavy Metal(loid)s Contamination of Groundwater in Khyber District, Pakistan: Spatial Dependence, Source Apportionment, and Human Exposure. Environmental Forensics, 2023. Impact Factor (IF): 1.8.
10. Sohail Noor, Amin Ur Rahman, M. Iqbal, and Waheed Ur Rahman. Novel Applications of Precipitated Calcium Carbonate in Food, Pharmaceuticals and Cosmetic Industry. Journal of Population Therapeutics and Clinical Pharmacology, 31(1), 529–542, 2024. Impact Factor (IF): 0.35.
11. Javid Ali, M. Siddique, Arshad Hussain, Javed Abbas, Inayat Ur Rehman, Abdul Wajid, M. Tayyab Gul, Rehman Ullah, Anwar Zeb, M. Akram, M. Younas, and M. Saqib Khalil. Comparative Cytotoxic, Antitumor and Antiproliferative Activities Evaluation of Sea Buckthorn (Hippophae rhamnoides Linn.) Berries Extracts of Pakistan. Journal of Population Therapeutics and Clinical Pharmacology, 31(3), 636–647, 2024. Impact Factor (IF): 1.94.
12. Gohar Rahman, Hina Fazal, Amin Ullah, Saeed Ahmad, Tariq Nadeem, Mushtaq Ahmad, Iftekhar Ahmad, Neeraj Mishra, Sumel Ashique, Gokhan Zengin, and Arshad Farid. Empowering Silver and Copper Nanoparticles Through Aqueous Fruit Extract of Solanum xanthocarpum for Sustainable Advancements. Biomass Conversion and Biorefinery, 2024. Impact Factor (IF): 4.0.
13. Bakht Naz, Aftab Afzal, Hina Ali, Nisar Ahmad, Riaz Ullah, Essam A. Ali, Mohammad Ali, Zahid Ullah, Ahmad Ali, and Shazia Dilbar. Melatonin-Induced Stress Enhanced Biomass and Production of High-Value Secondary Cell Products in Submerged Adventitious Root Cultures of Stevia rebaudiana (Bert.). ACS Omega, 2024. Impact Factor (IF): 4.1.
14. Adnan Khan, Nisar Ahmad, Hina Fazal, Mohammad Ali, Fazal Akbar, Ishaq Khan, Mohammad Tayyab, Muhammad Nazir Uddin, Naveed Ahmad, Mostafa A. Abdel-Maksoud, Ibrahim A. Saleh, Naser Zomot, Hamada Abd Elgawad, Kamran Rauf, Babar Iqbal, Marcelo Carvalho Minhoto Teixeira Filho, Mohamed A. El-Tayeb, and Arshad Jalal. Biogenic Synthesis of Silver Nanoparticles Using Rubus fruticosus Extract and Their Antibacterial Efficacy Against Erwinia carotovora and Ralstonia solanacearum Phytopathogens. RSC Advances, 14, 5754–5763, 2024. Impact Factor (IF): 4.036.

15. Muhammad Saeed, Muhammad Asad, Muhammad Shahzad, Muhammad Akram, and Zohaib Khan. Biochemical Composition of a Smokeless Tobacco Product (NASWAR) Used in Pakistan. Journal of King Saud University – Science, 2024. Impact Factor (IF): 3.18.

ii) National Publications

1. Goher R., M. Akmal, Javid Ali, G.R. Khan, and N. Ali. Grain Yield and Quality Parameters of Wheat Genotypes as Influenced Across an Elevation Gradient. Pakistan Journal of Botany, 55(6), 2023. Impact Factor (IF): 0.75.
2. Javid Ali, Arshad Hussain, Muhammad Siddique, Muhammad Ikram, Muhammad Zahoor, Riaz Ullah, Mohamed A., Naila Gulfam, and Abdul B. Application of Azadirachta indica (Neem) Organic Crude Macerated Extracts Against Postharvest Decay of Fruits Caused by Penicillium expansum, Colletotrichum gloeosporioides and Botrytis cinerea. Notulae Botanicae Horti Agrobotanici Cluj-Napoca, 53(1), 2025. Impact Factor (IF): 1.4.
3. Kamran Ali Shah, Syed Rafiuddin Shah, Waqas Ahmad Khan, Sara Nisar, Syeda Farwa Zaidi, M. Asif, Farah Gul, and Farid Ullah. Comparison of Intravesical Bacillus Calmette-Guérin and Mitomycin C for the Treatment of Non-Muscle Invasive Bladder Cancer. Cureus Journal of Medical Sciences, 2025. Impact Factor (IF): 1.3.

3) Patents Obtained:

Process for the Production of High Purity Food Grade Calcium Carbonate from Marble Waste

4) Equipment Developed:

- Pilot-Plant Set-up for Production of Wood Vinegar
- Drop weight Impact load tester for UPVC Electrical conduit pipe

5) Exhibitions/ Conferences/ Workshops/ Trainings/ Seminar/ Focus Group Meetings Organized:

1. Additive Manufacturing Technologies: a Brief Introduction
2. Webinar ON “THE PATENT cooperation treaty (PCT) and Youth”
3. Patent Application Filling and Drafting
4. Additive Manufacturing Technologies
5. Adaptation of Innovative Technique for Agro Food Production and Value Addition
6. Research Planning and Scientific writing
7. Training on Global GAP
8. 06 Month High Tech training on Advance CNC Sponsored by NAVTTC under PMYSD Program under

9. 06 Month High Tech training on Advance CNC Sponsored by NAVTTC under UNHCR Skills Development Program
10. 06 Month Convectional training on Machinist Sponsored by NAVTTC under UNHCR Skills Development Program
11. Training on Atomic Absorption Spectrophotometer
12. Chemical analysis of Black Tea
13. Antibacterial activity of Bee hive and propolis against Salmonella bacteria.
14. Synergistic antimicrobial activity of bee hive and propolis against Klebsiella bacteria, Training/Housekeeping of animal at animal house
15. Analysis of mushroom sample for antioxidant and extraction
16. The improvement strategies for indigenous steel industry of Pakistan
17. Digitalization of PCSIR Labs. Complex by Software experts

6) MoU / ToR / Job Contracts / Business Contract Signed:

1. Process for Grapes Cider Vinegar, M/s. Hunter Orchards Syed's Farms Hazro, Attock, Pakistan
2. Process of Red Chili Sauce, M/S Yummy Yard House # 105, Street # 9 F-7 Phase 6 Hayatabad, Peshawar
3. To promote industrial sector and youth empowerment through employment & amp; self-employment in local & amp; overseas industry, rendering services for execution of industrial / high-end" skill training component of program titled; prime minister's youth skill development
4. Khyber Pakhtunkhwa Economic Zones Development & Management Company (KPEZDMC), Agreement for the transfer of Culture marble, Food Grade Calcium Carbonate & Coated Calcium Carbonate technologies against a sum of Rs. 3.00 million
5. All Pakistan marble industries association (APMIA), Collaboration between PCSIR, Peshawar, and APMIA to promote research, development, and innovation in the marble and granite sector of Pakistan
6. Process for Production of Artificial marble from marble waste between PCSIR and M/S Brilliant MARS Gujranwala
7. Rendering services for execution of "industrial / high-End" skill training component of program titled; Prime minister's youth skill development to promote industrial sector and youth empowerment
8. Through employment & self-employment in local & Overseas industry February, 2024 between PCSIR and NAVTTC

7) Products Ready for Commercialization:

Lightweight Exfoliated Vermiculite		**Moringa Oil**	
Pain Kill Oil		**Flaxseed Oil**	
Pumpkin Oil		**Neem Oil**	
Grapes Cider Vinegar		**Mustard Oil**	
Magnetic Stirrer		**Foot Operated Hygienic Hand Washer**	
Weather Sheild Distemper		**Manganese Oxide**	
Manganese Carbonate		**Mosaic Table Pieces**	
Apple Cider Vinegar		**Grapes Cider Vinegar**	

2.4- PCSIR LABORATORIES COMPLEX, ISLAMABAD



PCSIR Laboratories Complex, Islamabad

Plot#16, Sector H-9, Islamabad, Pakistan

Tel: 051-9265158

E-mail: npslpcsir@gmail.com

Website: www.pcsir.gov.pk



Name of The Head: Dr. Muhammad Tahseen Aslam
Designation: Director
Tenure: January 2022 - Dec 2024



Name of The Head: Mrs. Razia Kalsoom
Designation: Director/ OIC
Tenure: 1.1.2025 to till date

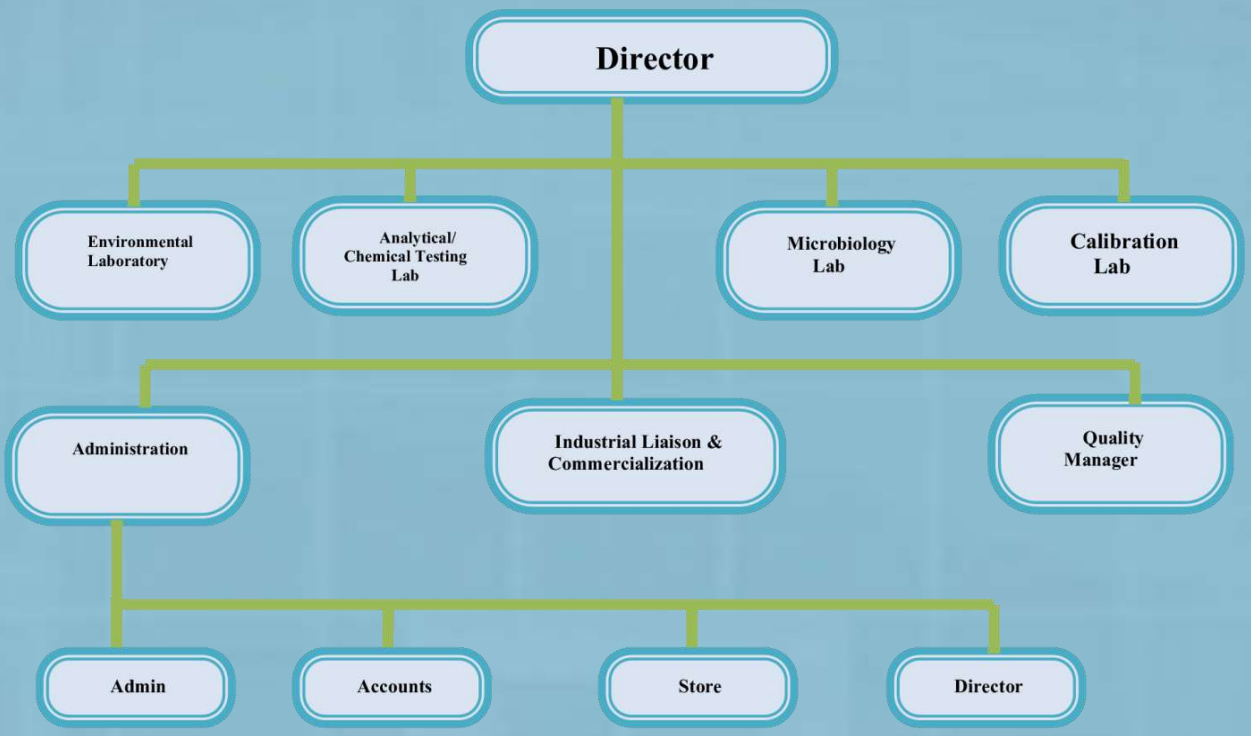
The PCSIR Laboratories Complex, Islamabad was established on 14th January 2022 in Sector H-9, Islamabad with the primary objective of strengthening research and development (R&D) activities and providing advanced analytical testing services to the industrial sector. The establishment plays a key role in supporting the Federal Capital Territory, the Rawalpindi region, and Azad Jammu & Kashmir by offering scientific, technical, and advisory services tailored to industrial and institutional needs.

As a premier national R&D and testing organization under the Pakistan Council of Scientific and Industrial Research (PCSIR), the Islamabad laboratories are actively engaged in providing high-quality analytical services to both public and private sector clients. The key service areas include food testing and safety, material characterization, environmental monitoring, and halal certification-related testing. These services are designed to ensure compliance with national and international quality standards, thereby supporting industry competitiveness and public health protection.

In addition to its industrial support role, PCSIR Laboratories Islamabad serves as an important technical resource for academic institutions. It maintains strong linkages with universities and research organizations and provides essential laboratory and research facilities for postgraduate students, including M.Sc., M.Phil., and Ph.D. scholars. This contribution helps in promoting scientific education, innovation, and capacity building in the country.The complex is structured into multiple specialized laboratories, including the Environmental Laboratory, among others, each focusing on distinct scientific and technical domains. These laboratories are equipped with modern instruments and skilled professionals to conduct advanced research, testing, and analysis in line with global standards.

Through its multidisciplinary functions, PCSIR Laboratories Islamabad continues to play a vital role in bridging the gap between research, industry, and academia. It contributes significantly to technological advancement, environmental sustainability, and industrial development in Pakistan, while fostering a culture of innovation and scientific excellence. Analytical/Chemical Testing Laboratory; Microbiology Laboratory; Calibration Laboratory.

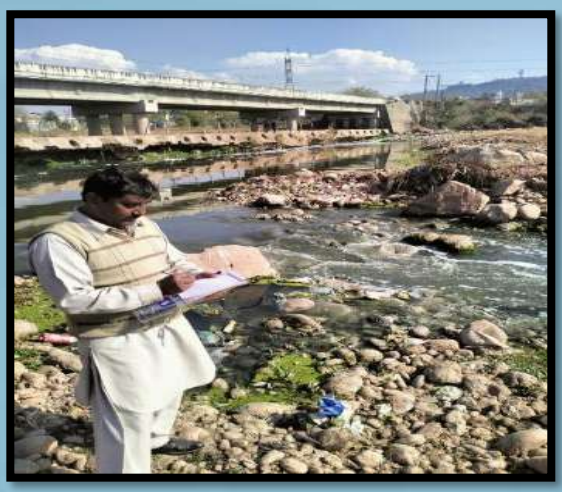
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Important Events Organized by IL

Participation of PCSIR Laboratories Complex Islamabad in Water Quality Assessment of Rawal Lake

As per the directives of the Senate Standing Committee on Climate Change and Environmental Coordination, a joint water sampling and monitoring team was constituted comprising representatives from the Water and Sanitation Agency (WASA), Environmental Protection Agency (EPA), and PCSIR Laboratories Complex Islamabad (PCSIR-IL). The purpose of this coordinated effort was to collect water samples from Rawal Lake and its feeding sources and to carry out a detailed and scientific assessment of water quality to evaluate environmental conditions and potential health risks.





Under this initiative, Dr. Uzma Rashid, Senior Scientific Officer (SSO) and In-Charge Environment, PCSIR-IL, represented the institution and supervised the technical team during field sampling, data collection, and laboratory analysis. She ensured that all procedures were conducted in accordance with standardized protocols to maintain the accuracy, reliability, and integrity of the results. The collected samples covered multiple inflow points, including all notified nullahs contributing to Rawal Lake, as well as pre-treatment and post-treatment samples obtained from the WASA Filtration Plant.

The comprehensive report prepared by PCSIR-IL included detailed analytical data covering physical, chemical, and biological parameters of water quality. These parameters were critically analyzed and compared with the National Drinking Water Quality Standards and Environmental Quality Standards to assess compliance levels and identify areas of concern.

In addition to laboratory findings, the report provided in-depth interpretation of results, highlighting key pollution sources and potential environmental risks affecting the Rawal Lake ecosystem. Evidence-based recommendations were also included, focusing on improving wastewater management, enhancing filtration efficiency, controlling inflow contamination, and strengthening monitoring mechanisms.

The study emphasizes the importance of integrated institutional collaboration and scientific monitoring in ensuring safe drinking water supply. It also serves as a valuable input for policymakers and relevant authorities, enabling informed decision-making for the protection, sustainable management, and long-term conservation of Rawal Lake water resources.

Training Achievements of PCSIR Laboratories Complex Islamabad for Students









PCSIR Laboratories Complex Islamabad successfully organized a series of hands-on training programs for students aimed at strengthening their practical skills and enhancing their exposure to modern analytical and aboratory techniques. These trainings were conducted under the institution's mandate to promote scientific capacity building and bridge the gap between academia and applied research.

A total of four batches of a workshop titled "High-Performance Liquid Chromatography (HPLC): Basics and Practical Demonstration" were conducted during April 2025. The workshop provided participants with fundamental knowledge and practical exposure to chromatographic techniques widely used in chemical, pharmaceutical, and environmental analysis. Batch I was held on 15 April 2025 with 30 participants, followed by Batch II on 17 April 2025 with 22 participants. Batch III was conducted on 22 April 2025 with 15 participants, while Batch IV took place on 23 April 2025 with 12 participants. Through these sessions, students gained hands-on experience in instrument handling, sample preparation, and data interpretation.

In addition, PCSIR Islamabad organized a two-day intensive training program on "Microbiology: From Basics to Practical Applications," designed to provide students with practical laboratory skills in microbiological techniques. The first batch of this training was conducted on 7–8 May 2025 with 38 participants, while the second batch was held on 19–20 June 2025 with 50 participants. The training covered essential areas such as microbial culturing, staining techniques, aseptic handling, and laboratory safety protocols.

These training initiatives reflect PCSIR Laboratories Complex Islamabad's strong commitment to human resource development, scientific education, and capacity building of young researchers. A total of 167 students benefited from these programs, gaining valuable practical experience that will contribute to their academic and professional growth in the fields of chemical and biological sciences.

Participation of PCSIR Laboratories Complex Islamabad in Sustainability Expo 2025 (ORIC-AIOU)

Officers of PCSIR Laboratories Complex Islamabad (PCSIR-IL) actively participated in the Sustainability Expo 2025 held on 16 April 2025 at the main campus of Allama Iqbal Open University (AIOU), Islamabad. The event was organized by the Office of Research, Innovation and Commercialization (ORIC) and focused on promoting sustainability, environmental protection, and green innovation initiatives.

During the expo, PCSIR-IL showcased a range of innovative, eco-friendly, and research-based products developed under its applied research programs. These included Anti-Aging Face Serum, Plantae Hair Toner, Aloe Vera Saffron Gel, and Beetroot Pickle.

The exhibited products highlighted PCSIR's commitment to sustainable development, value addition, and the promotion of natural, science-based solutions in the fields of health, cosmetics, and nutrition. The participation also reflected the organization's ongoing efforts to translate research into commercially viable and environmentally responsible products for public benefit.



1. Process Leased out

1. Multi grains sprouted flour for diabetic patients (MK Smart Solution Islamabad).

2. Process Developed

- Process Development for Preparation of Organic Mango Toffee.
- Purification of Canola oil using Fullers Earth as indigenous source
- Acne Cure (Herbal Powder)
- Formulation of Cucumber-Saffron gel for skin tightening.
- Formulation of balm for hands and cracked foot
- Production of Solar Dried Fruits and Vegetables to Preserve Nutritional Qualities, Functional Properties

3. Paper Published

i) International Publications

1. Aizan Mustafa, Faizullah Khan, Tariq Usman Khan, Shahid Masood, M. Ashraf, Asma Saeed, Alim-un Nissa, and Ammarah Kanwal. *Physio-Chemical Analysis of Drinking Water in Populated Villages of District Skardu*. *Advances in Food Technology and Nutrition Sciences*, 9(1), 17–24. Year: 2023.
2. Aijaz Panhwar, Abdul Sattar Jatoi, Shaukat Ali Mazari, Aftab Kandhro, Uzma Rashid, and Sofia Qaisar. *Water Resources Contamination and Health Hazards by Textile Industry Effluent and Glance at Treatment Techniques: A Review*. *Waste Management Bulletin*, 1(4), 158–163. Year: 2024.
3. Abdullah, Islam ud Din, Uzma Rashid, Aijaz Panhwar, Tehseen Aslam, Fouzia Hussain, Razia Kalsoom, and Muhammad Afzal. *Groundwater Contamination Study of Faisalabad and Sargodha Metropolitan Cities*. *Pakistan Journal of Analytical and Environmental Chemistry*, 23(2), 259–269. Year: 2022.
4. Muhammad Yousaf Channa, Jehanzaib Anwar, Razia Kalsoom, and Syed Hussain Imam Abidi. *Qualitative Analysis of River Sand Sources (Silica Sand, Ravi River Sand, Indus River Sand, and Jhelum River Sand) for Metal Casting: A Comparative Study*. *Engineering Research Express*, 6, Article 035435. Year: 2024. IF: 1.8.
5. Arooj Muneer, Wasim Akhtar, Memoona Samad, Sadia Zafar, Iram Fatima, Syed Hussain Imam Abidi, Razia Kalsoom, and Amir Shahbaz. *Biological Potential of Argyrolobium roseum Jaub. & Spach-Mediated Silver Nanoparticles and Their Effect on the Growth of Wheat Seeds*. *Microscopy Research and Technique*, 1–9, Year: 2024. . IF: 2.4.

6. Arooj Muneer, Wasim Akhtar, Memoona Samad, Sadia Zafar, Iram Fatima, Syed Hussain Imam Abidi, Razia Kalsoom, and Amir Shahbaz. *Biological Potential of Argyrolobium roseum (Camb.) Jaub. & Spach-Mediated Silver Nanoparticles and Their Effect on the Growth of Wheat Seeds*. *Microscopy Research and Technique*. Year: 2024. IF: 2.4.
7. *Jahangir Khan, Anila Sajjad, Mah Rukh, Khalid Khan, Syed Waqas Hassan, and M. Zia. Comparative Growth, Biochemical and Antioxidative Response of Glycine max and Sesamum indicum to MnS Nanoparticles. Biocatalysis and Agricultural Biotechnology, 61, Article 103386. Year: 2025. IF: 4.2.*
8. *Saad Hanif, Anila Sajjad, Rabia Javed, and M. Zia. The Role of Proline and Betaine Functionalized Zinc Oxide Nanoparticles as Drought Stress Regulators in Coriandrum sativum: An In Vitro Study. Discover Plants, 1–17. Year: 2025.*
9. *Iram Fatima, Naila Safdar, Razia Kalsoom, Wasim Akhtar, Syed Hussain Imam Abidi, Gul-e-Saba Chaudry, and Samia Akmal. The Albizia julibrissin and Caesalpinia decapetala Extracts Induce Potential Enzymes and Cell Growth Inhibition via Anti-Acetylcholinesterase, Anti-Lipase, Anti-Glycation and Cytotoxicity Activity. Ars Pharmaceutica, 66(2), 349–360. Year: 2025. IF: 1.3.*
10. *Alveena Sabir, Naila Safdar, Wasim Akhtar, Iram Fatima, and Gul-e-Saba Chaudhry. Therapeutic Potential of Fabaceae Species: A Phytochemical and Bioactivity Investigation. Ars Pharmaceutica, 66(3), 301–313. Year: 2025. IF: 1.3.*
11. *Haram Inam, Arjuman Iqbal Durrani, and Fouzia Hussain. Leaves Extracts-Driven Synthesis of ZnO Nanoparticles for Enhanced Adsorption of Methyl Red Dye. Chemical Papers. Year: 2025. IF: 2.2.*

ii) National Publication

1. *Lubna Liaquat, Phool Shahzadi, Alim-un-Nisa, Zeeshan Ali, and Razia Kalsoom. Extraction and Application of Eco-Friendly Natural Dye from Jamun on Different Fibers Using Rational Combination of Mordants. Journal of the Chemical Society of Pakistan. IF: 0.6. Year: 2025 (year to be confirmed if different).*
2. *Abdullah, Uzma Rashid, Islam ud Din, Muhammad Tahseen Aslam, Farzana Nazir, Ammarah Kanwal, Razia Kalsoom, Fouzia Hussain, Muhammad Afzal, Syed Hussain Imam Abidi, and Niaz Memon. Physicochemical and Pathological Assessment of Groundwater Quality from Sargodha, Pakistan Using Hybrid Multi-Layer Slow Sand Filter: Pre and Post Treatment Analysis. Mehran University Research Journal of Engineering and Technology, 43(1), 82–96. Year: 2024.*
3. *Fouzia Noreen, Ashif Sajjad, Muhammad Tahseen Aslam, Saima Nazir, Khalil Ur Rehman, and Inam Ul Haq. Nutritional, Phytochemical and Content Variation of Essential Trace Elements in Selected Folk Medicinal Plants Around Lahore, Pakistan. Pakistan Journal of Pure and Applied Biology, 12(1), 817–824. Year: 2023.*

4. *Alim-un-Nissa, Hamna Nisar, Phool Shahzadi, Fatima Sajjad, Shahid Masood, Aqsa Khizar, Asma Saeed, Sana Nisar, Hamood ur Rehman, M. Ashraf, M. Adil, and Razia Kalsoom. Production Sources and Potential Applications of Alkaline Water. Pakistan Journal of Chemistry, 13(1–2), 30–36. Year: 2023.*
5. *Badar-Ud-Din Soomro, M. Irfan, M. Yousif, Faraz Khan, M. Bilal Afzal, Junaid Israr, and Ambreen Saddozai. Temperature–Properties Relationship of Martensitic Stainless Steel for Improved Utilization in Surgical Tools. Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences, 60(1), 15–21. Year: 2023.*
6. *Fouzia Noreen, Mahnaz Kareem, Ashif Sajjad, Farzana Anwar, Abdul Saboor, Kulsoom Baloch, Fareeda Marri, Ayesha Lal, and Nazish. Chemical Composition, Anti-Bacterial and Anti-Fungal Activity of Essential Oil of Nannorrhops ritchiana Growing Wild in District Kech, Balochistan. Pure and Applied Biology, 14(2), 446–454. Year: 2025.*
7. *Fouzia Noreen, Mahnaz Kareem, Ashif Sajjad, Farzana Anwar, Abdul Saboor, Kulsoom Baloch, Fareeda Marri, Ayesha Lal, and Nazish. Chemical Composition, Anti-Bacterial and Anti-Fungal Activity of Essential Oil of Nannorrhops ritchiana Growing Wild in District Kech, Balochistan. Pure and Applied Biology, 14(2), 446–454. Year: 2025. (Duplicate of Item 6.)*
8. *Iram Fatima, Tanveer Hussain, Razia Kalsoom, Muhammad Rafay, and Muhammad Akram. Detection of Phytochemicals in Five Medicinal Species Grown in a Xerophytic Environment. Pakistan Journal of Chemistry, 15(3), 65–70. Year: 2025.*

4) ISO 17025:2017 Related activities

- PLI has prepared all the requisite documents for seeking accreditation of PNAC for its 35 scope parameters.
- PLI has launched online application on PNAC portal for pre assessment.

2.5- PCSIR LABORATORIES COMPLEX, QUETTA



PCSIR Laboratories Complex, Quetta

Mustang Road, Near Main Ghundi, Quetta, Pakistan

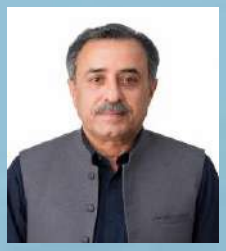
Tel: 0304-9919276

E-mail: qlpcsir@gmail.com

Website: www.pcsir.gov.pk

Name Mr. Mujeeb Ur Rehman
Designation Director
Tenure 3-6-2006 to 17-3-2024

Name Mr. Zaheer Ud Din
Designation Director
Tenure 17-01-2024 to 17-03-2024



Name Eng. Nasir Ali Baloch
Designation Director
Tenure 18-03-2024 to 05-11-2024



Name Mr. Khurram Shehzad
Designation Director/ Sr. Scientific / OIC
Tenure 06/11/2024 To to date

PCSIR Laboratories Quetta was established under the development project titled *"Establishment of PCSIR Laboratories Quetta"* with the objective of promoting scientific research, technological development, and industrial support services in Balochistan. The project was successfully completed in June 2004, resulting in the establishment of three specialized research centres: the Food Technology Centre, the Mineral Technology Centre, and the Chemical Engineering & Pilot Plant Centre. In addition, the complex includes an Administration Block and a well-equipped Library to support research, training, and knowledge dissemination activities.

Since its establishment, PCSIR Laboratories Quetta has been actively engaged in research and development (R&D), analytical testing, consultancy, and advisory services for both public and private sector organizations. The laboratories primarily focus on the fields of food technology and mineral technology, addressing the scientific and industrial needs of the province by providing reliable technical solutions, quality testing services, and process development support.

The laboratories also serve as an important research platform for academia by facilitating M.Sc., M.Phil., and Ph.D. students in conducting research projects and advanced scientific investigations. Through collaboration with universities and research institutions, PCSIR Quetta contributes significantly to human resource development and the promotion of scientific research in the region.

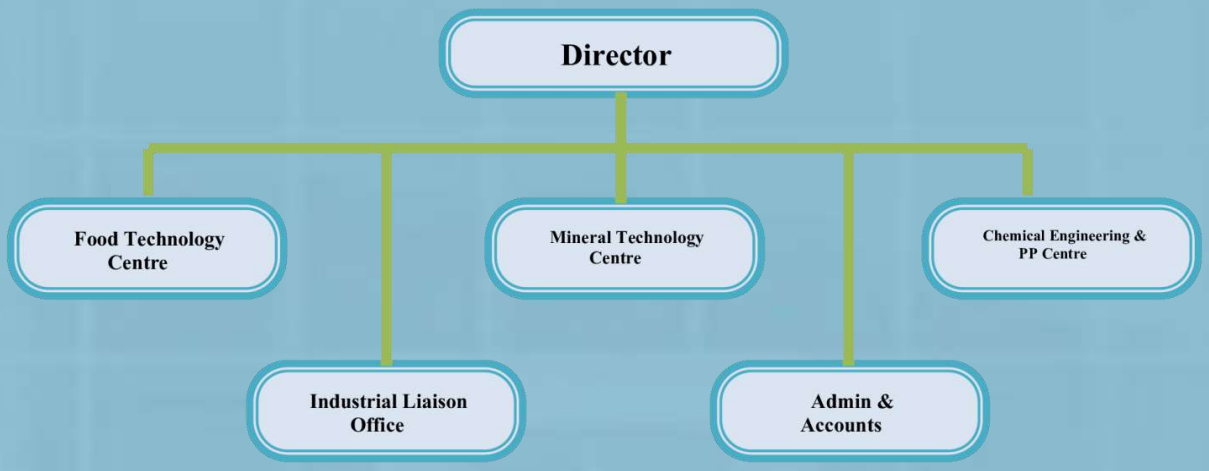
Despite operating with modest resources, the laboratories possess fully functional research and development facilities that have enabled scientists and researchers to develop a number of innovative bench-scale technologies and processes in areas related to food processing, mineral beneficiation, and

chemical engineering. These research outcomes have demonstrated significant potential for industrial application and value addition to local resources.

To further strengthen its role in technology commercialization and industrial development, PCSIR Laboratories Quetta is currently working towards the establishment of pilot plant facilities. These facilities will provide a platform for scaling up laboratory-developed technologies from bench scale to pilot scale, enabling their technical and economic evaluation before commercial adoption. The initiative is expected to facilitate technology transfer, promote entrepreneurship, encourage industrial investment, and contribute to the socio-economic development of Balochistan.

Through its research, testing, consultancy, and technology development activities, PCSIR Laboratories Quetta continues to play a vital role in supporting innovation, resource utilization, industrial growth, and capacity building in the province and across Pakistan.

ORGANIZATIONAL CHAR



Important Events Organized by QL

Visit of Secretary PCSIR to PCSIR Laboratories Quetta



The Secretary, Pakistan Council of Scientific and Industrial Research (PCSIR), visited PCSIR Laboratories Quetta from 16th to 19th May 2024 to review the overall performance, ongoing research activities, and operational functioning of the laboratories.

During the visit, the Secretary held detailed meetings with the management and scientific staff to assess the progress of research and development projects, laboratory services, and administrative matters. Key discussions focused on strengthening institutional efficiency, improving laboratory infrastructure, and enhancing the quality of scientific output.

The Secretary also interacted with scientists and technical teams, emphasizing the importance of applied research, innovation, and effective utilization of available resources to address regional industrial and technological needs. Special attention was given to improving research productivity and expanding service delivery to public and private sector clients.

The visit highlighted PCSIR Headquarters' commitment to strengthening its laboratories, promoting scientific excellence, and ensuring that PCSIR Laboratories Quetta continue to play a vital role in supporting industrial development and socio-economic growth of the region.

Visit of Sardar Bahadur Khan Women University to PCSIR Laboratories Quetta



A delegation comprising 50 students and faculty members from Sardar Bahadur Khan Women University (SBKWU), Quetta, visited PCSIR Laboratories Quetta on 15 July 2023 as part of an educational study tour aimed at enhancing their practical understanding of scientific research and laboratory operations.

During the visit, the participants were given a detailed briefing on the various functions and activities of PCSIR Laboratories Quetta, including research and development (R&D), analytical testing, and technical advisory services. The students were introduced to the role of PCSIR in supporting industrial development through applied sciences and technology-driven solutions.

The delegation was also oriented about the laboratory facilities and ongoing projects in key areas such as food technology, mineral processing, and chemical engineering. Scientists and technical staff explained standard testing procedures, quality control methods, and the significance of laboratory services in ensuring product safety and industrial compliance.

The visit provided the students with valuable exposure to real-world scientific practices and strengthened their understanding of applied research and its role in national development. It also helped foster academic–industry linkages and encouraged students to pursue careers in science, technology, and innovation.

1. Process development and formulation of whey-based vegetable soups and evaluation of their Nutritional properties

Whey a protein complex dived from milk is being acknowledged as a functional food with a number of health benefits. The biological components of whey, including lactoferrin, betaloctoglobulin, alpha lactalbumin, glycolmacropeptide and immunoglobulin demonstrate a range of immune enhancing properties. Whey has the ability to act as an antioxidant, antihypertensive, antitumor, hypolipidemic, antiviral, antibacterial and chelating agent. Today whey is a popular dietary protein supplement purported to provide antimicrobial activity, immune modulation, improved muscle strength and body composition, and to prevent cardiovascular disease and osteoporosis. Several nutritionally important constituents in whey having excellent functional characteristics enhance opportunities for a wide-range application of whey and whey constituents in the food industry.

Dried soup powders have an advantage of protection from enzymatic and oxidative spoilage and flavor stability at room temperature over long periods of time (6–12 months). In addition, they are ready for reconstitution in a short time for working families, hotels, hospitals and restaurants.

2. Study Of Precious Metals and Upgradation of Copper Ore of Balochistan

Huge reserves of copper ore are presents/reported in chagai District of balochistan. Reko Diq, saindak, amuri represents one of the largest copper and gold reserves in the Pakistan having estimated reserves of 5.9 billion tons of ore grading 0.41% copper and gold reserves amounting to 41.5 million. The area has been a subject of research and exploration by mining companies due to its potential for large scale mining operations. Typically focus on such as evolution precious metals as well as upgradation of copper in reko diq copper ore.

The global market has announced copper as a modern energy metal and finds its extensive utilization in the electrical wiring, power transmission lines, alloying, anticorrosive, coating, heat exchangers, refrigeration tubing, etc. Copper ore is primarily beneficiated from sulphide mineral deposits. Due to high-grade copper sulphide deposit exhaustion, the focus has now shifted towards recovery from different lean-grade oxide and mixed ore deposits. Extensive research has been carried out on the flotation of copper sulphide ore as compared to copper oxide and mixed type ores.

3. Technical Reports

- Microbial Production of Pectinase by fermentation
- Isolation, identification and analysis of Probiotics from selective yogurts of Quetta

4. Technical Services

Analytical and Testing Services

Analytical and testing services were provided public and private sector organizations. Test related to food products, drinking water / wastewater and minerals and petrochemicals products have been conducted. 27 clients availed analytical / testing & advisory services for samples, enabling these labs. to generate income of Rs.50.54 million.

5. List of Important Clients Served

Sr. No.	Name of Clients
1.	Superintendent, Customs Dry Port (NLC), Model Custom Collectorate, Quetta
2.	Superintendent, Collectorate of Customs Appraisement, Custom House, Taftan.
3.	Superintendent, Collectorate of Customs Appraisement, Custom House, Chaman.
4.	Superintendent, Customs Railway Dry Port, Quetta
5.	Deputy Director, PSQCA, SDC-Balochistan Reginal Office, Quetta
6.	Commanding Officer, 136 Ordnance Unit, Quetta Cantt,
7.	Public Health Engineering, Quetta
8.	Water World International, Karachi
9.	M/s Salwa Coal, Dukki
10.	Saindak Copper Gold Mines, Saindak
11.	Health Department, Govt. of Balochistan
12.	Mehsood Coal Co. Mach

6. Trainings/ Seminars/Workshops attended:

6.1. Training Received:

- Ms. Hiba Amanat Ali (SO) Mr. Junaid Ahmed (SO) and Mr. Khurrum Shahzad Buzdar (SO) received 05 days online virtual training of Auditor on ISO 45001-2018 occupation health and safety training.
- Ms. Hiba Amanat Ali (SO) received a 05 days online virtual training on Food supply chain in the informal sector from APO Japan.

6.1.2. Training Conducted:

- Four students of BS Mining Engineering of BUITEMS (Balochistan University of Information technology, engineering and management Sciences Quetta) were supervised and facilitated for their final year research work
- A Student of MPhil Biosciences University of Balochistan was facilitated for her thesis research at food technology center.

7. Visits.

Director PCSIR Quetta Visited SBK Women University Quetta

- Engr. Nasir Ali Baloch, Director PCSIR Labs Quetta paid a visit to SBK Women University Quetta to explore avenues of collaboration and mutual facilitation in research endeavors. During his visit Engr. Nasir Ali Baloch met with registrar of the university to discuss potential partnerships aimed at fostering scientific innovation and research excellence among students. The dialogue focused on leveraging the expertise and resources available at PCSIR labs to support and enhance research capabilities of students.

8. Other Visits

- The Director of these labs. visited local industries time to time and offered lab facilities for evaluation of their products.

S. No	Name of Industry
1.	M/s Mratin Dow Marker Limited, Quetta
2.	M/s Aqua Perfect Mineral Water, Jan Mohammad Road, Quetta
3.	M/s Rizwan Oil & Ghee Mills (Pvt.) Ltd. Quetta
4.	M/s Farooq Ghee & Oil Mills (Pvt.) Ltd. Quetta
5.	Department of Mines & Minerals, Balochistan
6.	PSQCA, SDC- Balochistan Regional Office, Quetta

9. Liaison/Collaboration

- PCSIR Laboratories Quetta offers technical guidance and advisory services to organization from public and private sectors, students and researchers as well. During the year under report, these labs. maintained collaboration with the following:
- Centre of excellence in Mineralogy, UOB, Quetta.
- Institute of Botony, UOB, Quetta.
- Institute of Biochemistry, UOB, Quetta.
- Agriculture Collage Quetta
- PPL Kallat Balochistan.
- Merck Marker Quetta
- Sardar Bahadur Khan University.
- Balochistan University of Information Technology and Management Sciences, Quetta.
- Custom collectorate
- DMD Balochistan
- BUITEMS

2.6- PCSIR LABORATORIES COMPLEX, HYDERABAD



PCSIR Laboratories Complex, Hyderabad

Gulshan-e-Shahbaz, Near New Toll Plaza, Hyderabad-Karachi Motorway Location 129 M-9(N), District Jamshoro Sindh, Pakistan

Tel: 022-3018990

E-mail: hlpcsir@gmail.com

Website: www.pcsir.gov.pk



Name of the Head: Engr. Nazir Ahmed Tunio
Designation: Engineer
Tenure: 2022-2023



Name of the Head: Dr. Naheed Kausar
Designation: CSO
Tenure: 15-12-2023 to 09-02-2025



Name of the Head: Mr. Barkat Ali Solangi
Designation: Principal Scientific Officer
Tenure: 10.02.2025 till date

Name of the Head: Engr. Ch: Athar Amin
Designation: Sr. Engineer
Tenure: 11.07.2023 for 2 Month

Name of the Head: Mr. Arif Jamil Khan
Designation: Admin Officer
Tenure: 06.11.2023

Name of the Head: Mrs. Ammarah Kanwal
Designation: Sr. Scientific Officer
Tenure: 03.05.2024

PCSIR Laboratories Hyderabad is a multidisciplinary research and development unit strategically located in close proximity to major industrial hubs, including Nooriabad, Hyderabad, Kotri, as well as surrounding rural areas of Sindh. This advantageous location enables the laboratories to effectively address both industrial and rural development challenges through applied research and technological innovation.

The unit plays a significant role in promoting sustainable regional development by focusing on rural and industrial technologies. Its key areas of work include value addition in agricultural produce, development of solar-based technologies for safe drinking water, and innovative solutions for solar drying and cooking of food products. These interventions are designed to improve living standards in rural communities while also supporting small-scale industries through cost-effective and environment-friendly technologies.

PCSIR Laboratories Hyderabad was originally established in 1985 as the Solar Energy Research Centre with a primary focus on renewable energy research. In response to evolving regional needs and expanding industrial demands, its scope was gradually broadened from a mono-disciplinary setup to a comprehensive multidisciplinary research facility. As a result, it was renamed PCSIR Laboratories Hyderabad in 2003.

Since then, the laboratories have successfully executed several adhoc research projects and have been actively engaged in providing analytical testing, technical consultancy, and advisory services to public and private sector organizations, industries, and individual clients

1) Papers Published

i) International Publications

1. Alim-un-Nisa, Faizullah Khan, Asma Saeed, Ammarah Kanwal, Controlling Enzymatic Browning in Apples: Inhibiting Polyphenol Oxidases Activity, Advances in Food Technology and Nutritional Sciences, 31 December 2023
2. Alim-un-Nisa, Faizullah Khan, Asma Saeed, Ammarah Kanwal, Dehydration of Apricot under different Preservation Techniques, EC Nutrition Research Article, 4th March 2024
3. Faizullah Khan, Ammarah Kanwal, Alim-un-Nisa, Nutritional evaluation of jamun fruit and development value-added product squash, 22nd April 2024

ii) National Publications

1. Abdullah, Uzma Rashid, Islam ud Din, Muhammad Tahseen Aslam, Farzana Nazir, Ammarah Kanwal, Razia Kulsoom, Fouzia Hussain, Muhammad Afzal, Syed Hussain Abidi, Niaz Memon, Physicochemical and Pathological Assessment of Groundwater Quality from Sargodha, Pakistan using Hybrid Multi-Layer Slow Sand Filter: Pre and Post Treatment Analysis, 1st January 2024.

2) Exhibitions/ Conferences/ Workshops/ Trainings/ Seminar/ Focus Group Meetings Organized:

1. Mrs. Saniya Soomro (Scientific Officer) attended 7th international online webinar “strategies for success tips and tricks for elevating your research paper”. Dated: 31st January 2024.
2. Mrs. Saniya Soomro (Scientific Officer) attended “Food Law & Regulations in Pakistan” online webinar by Global Institute of Food Technology Certifications on dated: 30th January 2024.
3. Mrs. Saniya Soomro (Scientific Officer) attended Revised and Amended ISO Standard for Microbial Analysis of Food & Water by the life science business of Merck KGaA, Darmstadt, Germany operates as Millipore Sigma in the U.S and Canada dated: 25th January 2024.
4. Mrs. Saniya Soomro (Scientific Officer) attended ISO 9001 Lead Auditor Training session 1 online dated: 25th January 2024 by Processing and Preservation Professionals Society of Pakistan (PPP)
5. Mrs. Saniya Soomro (Scientific Officer) attended Online training session dated: 17th January 2024 on the topic “Introduction to Food Industry” by GIFT Global Institute of Food Technology Certifications.
6. Mrs. Saniya Soomro (Scientific Officer) attended Online training session dated: 11th January 2024 from the Global institute of Food and Technology. Topic: “Diet therapy & Therapeutic Diets”.

2.7- PCSIR LABORATORIES COMPLEX, FRC, KARACHI



Fuel Research Centre, Karachi
Off University Road, Karachi, Pakistan
Tel: 021-99261963
E-mail: frcpcsirkarachi@gmail.com
Website: www.pcsir.gov.pk



Name Of the Head: Dr. Naheed Kausar
Designation: Director
Tenure: July 1, 2023 To: July 4, 2025



Name Of the Head: Dr. Sofia Khalique Alvi
Designation: Director
Tenure: July 9, 2025 To: To date

The Fuel Research Centre (FRC) of the Pakistan Council of Scientific and Industrial Research (PCSIR) is a premier research and development (R&D) facility dedicated to fuel, energy, and environmental research. As one of the first specialized institutions of its kind in Pakistan, the Centre plays a pivotal role in advancing scientific research, technological innovation, and sustainable energy solutions to meet the country's growing energy demands.

The Centre is actively engaged in research and development activities related to coal, coke, biomass, liquid fuels, and gaseous fuels. Particular emphasis is placed on exploring efficient and environmentally sustainable technologies for power generation from indigenous coal and biomass resources. Through its research initiatives, FRC contributes to addressing Pakistan’s energy challenges by promoting the utilization of local energy resources, reducing dependence on imported fuels, and enhancing national energy security.

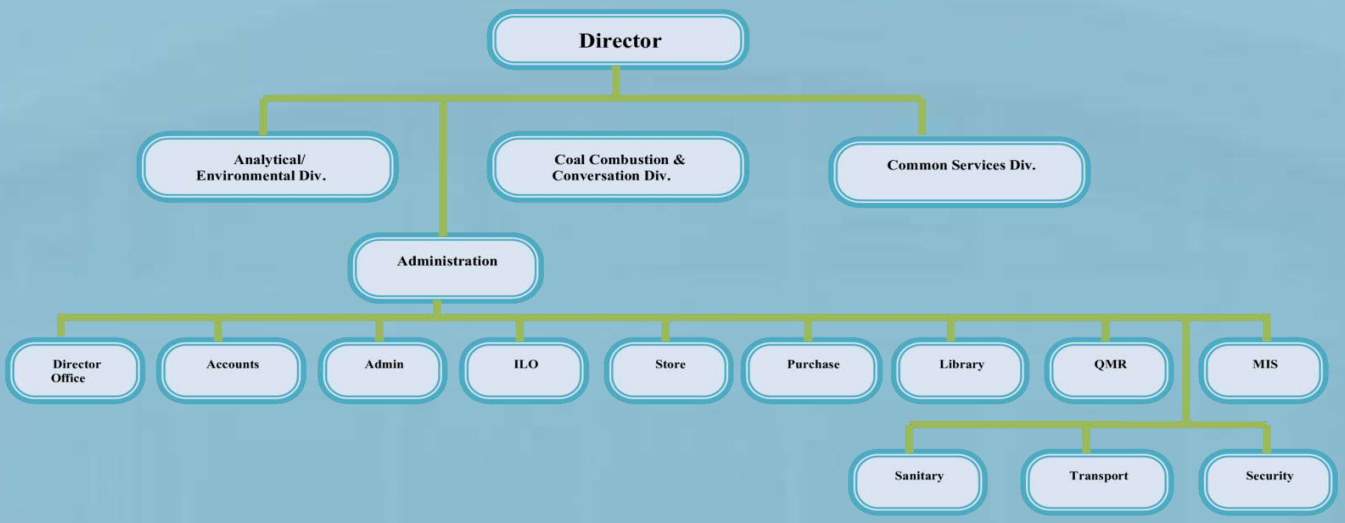
In addition to its research activities, the Centre provides reliable analytical testing, characterization, and consultancy services to industry, academia, and government organizations. These services support quality assurance, process optimization, and the development of innovative fuel technologies. FRC also undertakes studies on fuel quality, combustion efficiency, environmental impact assessment, and emission control technologies to facilitate cleaner and more sustainable energy production.

The mission of the Fuel Research Centre is to promote fuel-related research and development, provide high-quality analytical and technical services, and improve the scientific understanding of solid, liquid, and gaseous fuels. The Centre is committed to addressing critical technical, economic, and environmental challenges associated with the utilization of indigenous coal and other alternative energy resources.

The vision of FRC is to develop research-driven solutions for the efficient utilization of fossil and renewable energy resources and to facilitate the production of clean, cost-effective, and sustainable energy. By transforming indigenous raw materials into efficient energy sources, the Centre strives to support Pakistan’s goal of energy self-sufficiency while contributing to environmental protection,

industrial development, and economic growth. Through innovation, scientific excellence, and technological advancement, FRC continues to play a significant role in building a resilient energy sector and promoting a cleaner and more sustainable future for the country.

ORGANIZATIONAL CHART



1) Process Developed

1. To develop Trichlorotriazines based reactive dye for textile fibers utilizing the mixture of Phenolic compounds extracted from coal-tar (Developed by: Dr. Naheed Kausar CSO)
2. To develop a method to assess the purity of copper wire using Atomic Absorption Spectrophotometer (Developed by: Dr. Naheed Kausar CSO and Mr. Amanat Ali. SO)
3. Coal Briquettes Fabrication from Hanna Urak Coal Mine, Baluchistan for Domestic Utilization (Developed by: Dr. Anila Sarwar& Syed Kabir Shah)
4. Fabrication of High heating value Industrial Fuel from Duki Coal Mines, Baluchistan (Developed by: Dr. Anila Sarwar & Syed Kabir Shah)

2) Publication

i) International Publications

1. Energy assessment of some nuts and dried fruits grown in Pakistan's climate and their role for weight control management, Anila Sarwar, Muhammad Nasiruddin Khan, Syed Kabir Shah, 2023, Journal of Sustainable Environment, 2(1):1-7)

Training topics:

1. Coal processing to obtain value added products and analytical methodology to assess fuel & its value-added products
2. Identification of combustible and flammable liquids
3. Review study of astm for the testing of liquid fuels by classical methods and application in the lab.
4. Proximate and heating value analysis of some waste materials.
5. Conversion of hazardous fuel into environment friendly fuel
6. Zero wastage: a sustainable approach for waste management
7. Potential role of artificial intelligence techniques in coal industry petroleum engineering & polymer & petrochemical engineering
8. Production and process flow diagram for solid / liquid humic acid salts for industrial manufacturing engineering
9. Bio-coal briquettes for industrial chemistry department
10. Recent studies on coal and clean technology; a short review for chemical engineering
11. Analytical Methodology to Assess Solid and Liquid Fuels and its Value-Added Products, Coal Processing to Obtain Value Added Products, Training to 27 students from Centre for Pure and Applied Geology, University of Sindh Jamshoro, Sindh, Department of Chemical Engineering and Department of Energy System Engineering, Quaid-e-Awam University of Engineering and Technology, Nawabshah

ANALYTICAL TESTING/ PRODUCT SUPPLY:

No. of Samples Tested	Product Supply
38 Nos. **Parameters:** **TS:** Total Sulphur **F/C:** Fixed Carbon **T (M):** Total Moisture **HA:** Humic Acid **HRG:** Hydrogen **OXG:** Oxygen **GCV:** Gross Calorific Value **I (M):** Inherent Moisture **VM:** Volatile Matter **S.P. (Solid):** Supply Product **NRG:** Nitrogen **NCV:** Net Calorific Value	• 750 Litre Liquid Humic Acid • 40 kg Solid Humic Acid • 15 Tons Coal Briquettes

2.8- PCSIR LABORATORIES COMPLEX, LRC, KARACHI



Leather Research Centre, Karachi
D-102,S.I.T.E, South Avenue, Karachi
Tel: 021-99333372
E-mail: lrcpcsirkarachi@gmail.com
Website: www.pcsir.gov.pk



Name of the Head: Dr. Kashif Pervez
Designation: Director, LRC / CSO
Tenure: 20-12-2021 to 15-07-2023



Name of the Head: Mr. Barkat Ali Solangi
Designation: Acting Director, LRC / PSO
Tenure: 15-07-2023 to04-03-2024



Name of the Head: Dr. Farman Ahmed
Designation: Additional Director, LRC / PSO
Tenure: 05-03-2024 to 04-04-2025



Name of the Head: Dr. Hafiz Rub Nawaz
Designation: Director. LRC / CSO
Tenure: 05-11-2025 toTill Date

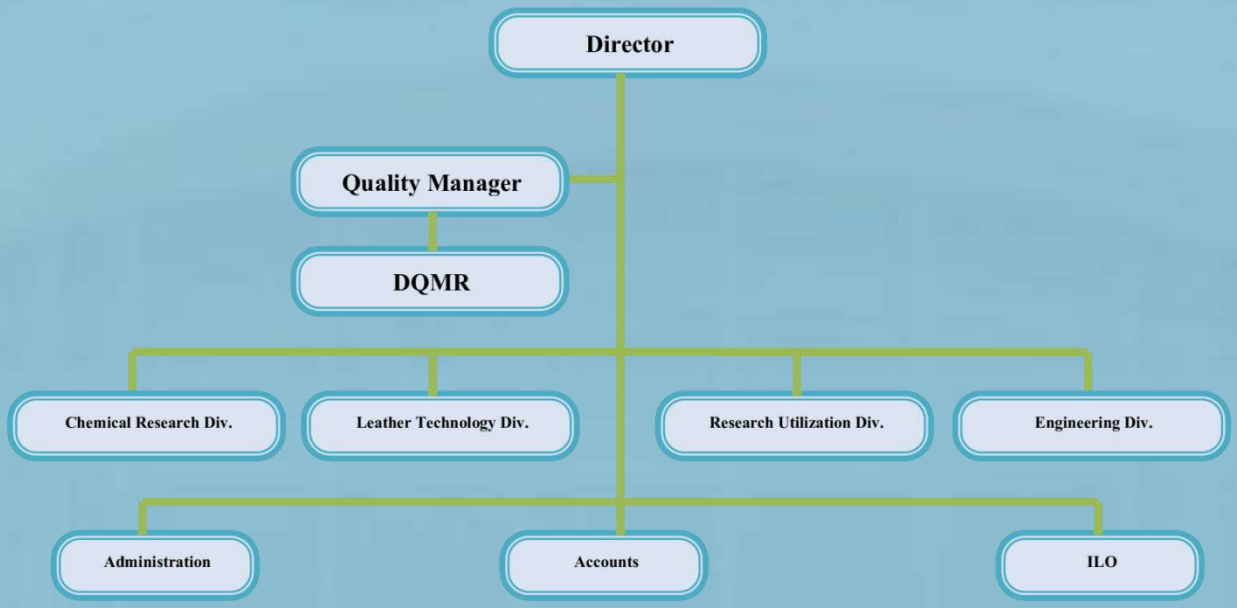
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The Leather Research Centre (LRC), PCSIR Karachi, is a specialized research and development facility dedicated to supporting Pakistan's leather and tanning industry through scientific research, testing, consultancy, and technological innovation. Established in 1959 as a Leather Section under the Ministry of Science and Technology, it was upgraded to a Research Division in 1981 and subsequently elevated to a full-fledged Leather Research Centre at SITE, Karachi, in 1984.

The Centre conducts research on leather processing, tanning technologies, quality improvement, environmental management, and value-added leather products. It also provides technical support, analytical testing, and consultancy services to industry stakeholders to enhance product quality and competitiveness.

LRC is staffed by a multidisciplinary team of scientists, engineers, chemists, and leather technologists whose expertise enables the Centre to address industry challenges through innovative and practical solutions. Through its research, training, and technical services, the Centre continues to play a vital role in the modernization, sustainability, and growth of Pakistan's leather sector.

ORGANIZATIONAL CHART



1) Papers Published

i) International Publications

1. Book: International Cappadocia Scientific Research Congress Liberty Academic Publishes, New York,USA: Cappadocia-Nevsehir, Turkey,432-442, 2023
2. Zahoor Khan, Maryam Shafque, Samuel Tanoeyadi, Barkat Ali Solangi, Sumera Afzal Khan, Nusrat Jabeen, Hafz Rub Nawaz, Sehar Afshan Naz &Taifo Mahmud, "Characterization and Pilot- Beena Zehra, Uzma Nadeem, Sarwat Ismail, Barkat Ali Solangi and Mohammad Kashif Pervez, Effect of different Retaining Agents on Shrinkage Temperature of Leather on *Indones. J. Chem. Stud*. 6(2), 112-118. (July 2023)
3. Dr. Rajkumar Dewani, Senior Scientific Officer, Mrs. Nirmala, The Missing Piece of Evolutionary Puzzle: Interactivism Conference: V. International Cappadocia Scientific Research Congress on Conference Scale Application of the ZMS-2 Serine Protease with Novel Properties for the Eco-friendly Leather Processing "on Applied Biochemistry and Biotechnology. 196;5045-5263. 2024

2) Products ready for Commercialization:

Fatliquor from Vegetable Oil Blend of Castor and Cotton Seed Oil for Leather Industry: Leather and leather products comprise a large part of Pakistan's total exports. Leather products are costly because of the large number of processing steps and chemicals used in its production. Fatliquor is an important chemical used to confer strength durability and softness to leather. Fatliquoring is one of the important steps in leather processing in which the fibers of leather get lubricated and become softened. A fatliquor from the blend of Castor and Cotton seed oil having a 4:1 ratio is developed at lab scale. literature showed good result after application.



Resorcinol Based Synthetic Tanning Agent: A resorcinol based synthetic retaining agent, is synthesized at lab scale which tend to produce the excellent organoleptic properties along with self-colored leather in different fawn shades, after being applied on sheep's crust *during the retanning step of leather processing in conventional way.*



Stingray Fish Leather for Decorative, Protective & other various articles: Stingray fish is available in coastal area of Pakistan. Generally stingray fish is used in poultry feed industry as Proteinous component. Stingray fish has attractive and unique grain structure having beautiful denticles instead of scales. The use of Stingray Fish in different articles enhances the multiple times price and health benefits for blood circulation as a good flexology (Massager in hand and food felexzone).







Lizard look Leathers from Chicken-Paw Skins and their valuable products: Millions of chicken are slaughtered daily to obtain meat and their paw skins are thrown away as a solid waste that creates environmental problems. Due to very attractive texture of this solid waste (Paw), LRC developed a technology to convert into lizard look exotic leather. The use of few pieces of this exotic leather may enhance 100 times value of common products. This technology is very useful for cottage industry with small investment.



Industrial Leather and Technology F\or The Preparation Of Gasket For High Pressure Jack, Oil & Water Seals, Machine Belt etc: This special kind of leather is prepared in developed countries for gasket, washers and designated type of seals for automotive and marine applications.



But unfortunately, such types of leathers are not prepared in Pakistan due to lack of standard technology. Hence these types of leather products are imported from European countries especially from Germany at very high cost. Therefore, LRC has developed the said technology & leather, which is ready to lease out. LRC has also provided leather gasket to Pakistan Air Force for the use in high pressure jacks to lift up aircrafts.





Technology for exotic leather from ostrich skins: At present Ostrich breeding is being setup in many countries including Pakistan by Pakistan Ostrich Company. The main factor of highly expensive and demand of Ostrich leather is that the ostrich skins have unique shapes, excellent strength and attractive grain pattern, which are considered everywhere in the world. But unfortunately no primary technology was available in Pakistan; therefore LRC has developed a complete technology for the conversion of ostrich skin into valuable exotic leather for very demanding products.

2.9- PCSIR LABORATORIES COMPLEX, SKARDU



PCSIR Laboratories Complex, Skardu

Sadpara Road, Skardu

Tel: 05815-920305

E-mail: pcsirdctcskardu@gmail.com

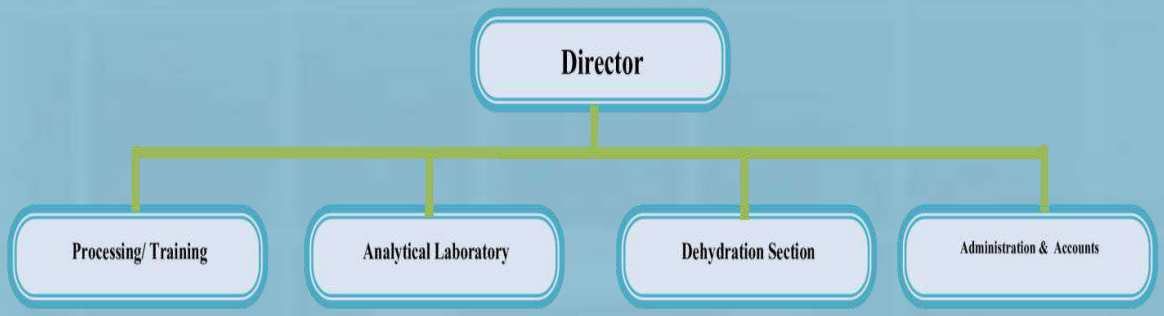
Website: www.pcsir.gov.pk



Name of the Head: Tariq Umer Khan
Designation: Director
Tenure: July 2016 to Continue

The center started working in 1998 under the administrative control of PCSIR Laboratories Complex, Peshawar to impart technical training on processing, preservation, value addition, packaging, transportation and storage of fruits and vegetables. Center is helping rural population of the region in their socio-economic development by imparting training and offering technical help in minimizing the post-harvest losses. Provision of technical assistance in establishment of small cottage industries of processing and preservation of fruit/vegetables. Center is also providing testing facilities to the farmers/students in the field of agricultural raw materials and its value-added products.

ORGANIZATIONAL CHART



1) Papers Published

i) International Publications (Only Impact Factor Publications)

1. A research paper titled "Physio-Chemical Analysis of Drinking Water in Populated Villages of District Skardu" published in Advances in Food Technology and Nutrition Sciences in October, 2023.
2. A research paper titled "Dehydration Techniques for Apricot Fruit" published in E C Nutritional Journal in March 2024.
3. A research paper titled "Nutritional Evaluation of Jamun Fruit and development of value-added product Squash" published in ACTA Scientific Nutritional Health (ISSN:2582-1423) in April 2024.
4. A research paper titled "Paleocene Katisho ultramafic-mafic-intermediate igneous rocks in the Ladakh Batholith, northern Pakistan: Implications for the transition from intra-oceanic to Andean type arc setting" published in Lithos - ISSN 0024-4937 | Science Direct in January 2025.

1) Products Ready for Commercialization

1. Apricot marmalade
2. Apple Fruit Chips
3. Cherry Fruit Tonic
4. Mulberry and Cherry Blended Jam
5. Quince Fruit Leather
6. Soft Stone Sink (Serpentine)
7. Semi-Precious Stone Jewelry

2) Exhibition/ Workshops/ Trainings/ Conference/ Seminars Organized:

1. PCSIR Labs Skardu organized 2 Days Kissan Mela from 1st November to 2nd November in collaboration with Agriculture Department and District Administration Skardu
2. PCSIR Labs Skardu Organized and participated in two days Cherry Festival 2024 in collaboration with Agriculture Department Skardu along with NGOs at Hussain Abad Skardu, 08-09 June 2024.
3. PCSIR Labs participated in two days international conference on "Organic Fruits and Vegetables production in Gilgit Baltistan" at Sharifi Sports Complex Hussain Abad Skardu. PCSIR Labs presented on the topic "Availability of R & D and Testing Facilities for Industries in Gilgit Baltistan"08-09 June 2024.
4. One month training on "Gems & Mineral Cutting and Polishing" started at PCSIR Gem Stone Cutting Polishing Center Skardu dated 02-09-2023 in collaboration with Green Serpentine Cutting and Polishing Center Skardu and concluded on 02-10-2023.
5. 02 Days training on "Fruit Processing" in Collaboration with Agriculture Department Skardu held on dated 28 and 19 August 2023.

6. 02 Days training on “Fruit Processing” in Collaboration with Pak Seabukthorn International Skardu held on dated 06 and 07 November 2023 at PCSIR Labs Skardu.
7. Three days training on preparation of apple pulp, jam and chips provided to 06 participants from local community at PCSIR Labs Skardu in April 2024.
8. Two Weeks training on “Gems Stone Cutting and Faceting” was provided to 25 Participants in collaboration with Pakistan Institute of Fashion Design Lahore at PCSIR Gem Stone Cutting Polishing Center Skardu dated 17- 31 May, 2024.

3) MoU/ ToR/ singed:

1. MoU signed between PCSIR Labs Skardu with Green Serpentine Cutting and Polishing Center for provision of 1-month training on Gems Stone Cutting and Polishing.
2. MoU signed between PCSIR Labs Skardu and Pakistan Institute of Fashion Design Lahore for provision of training on Gems Stone Cutting and Faceting dated 09-05-2024.

2.10- SCIENTIFIC INFORMATION CENTRE, KARACHI



PCSIR Scientific Information Centre, Karachi

PCSIR Laboratories Campus, Sharah-e-Dr. Salimuzzaman Siddiqui, Karachi

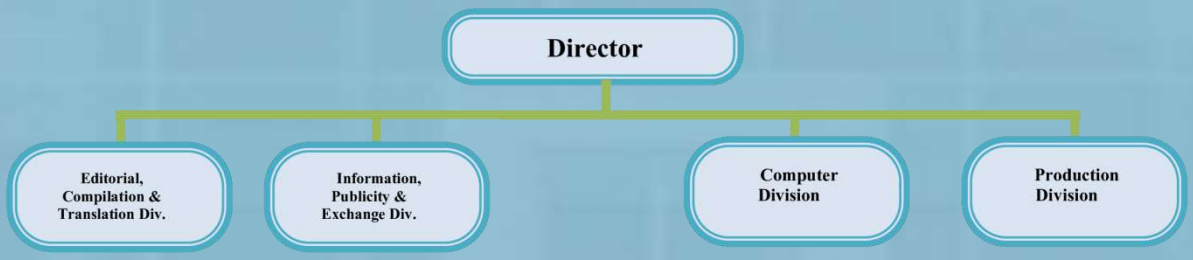
Tel: 021-99261914

E-mail: sicpcsirkarachi@gmail.com

Website: www.pcsir.gov.pk

Scientific Information Centre (SIC) is scientific and technical information Unit of PCSIR Pakistan Council of Scientific and Industrial Research) located in Karachi. Itis recognized as an essential tool to the orderly development of society and publication Centre which works along with the Head Office since 1958. This center is actively engaged in dissemination of R&D results through regular and occasional publications for the scientific community, and publishes on regular basis triennially research journal i-e Pakistan Journal of Scientific & Industrial Research (PJSIR), which deals in different fields of Physical Sciences and Biological Sciences. Other regular publications of PCSIR published by SIC are: PCSIR News Bulletin, PCSIR Annual Report, PCSIR R&D Programme. Beside the regular PCSIR publications, the SIC also published miscellaneous publications of PCSIR units i.e. Test Reports (Accredited and Non-Accredited) log registers, file covers, prospectus guide books of admission forms, technical books, stickers, pension forms, election leaflets, TR forms, visiting cards, service history books etc. SIC has five divisions i.e. (a) Editorial and compilation division (b) Information, publicity and exchange division (c) Computer division (d) Production division (e) Accounts and administration division.

ORGANIZATIONAL CHART



1) Significant Activities:

S. No	A: Annual Work done on PJSIR papers from 1st July-2023 to 30th June 2024	
1	Total No: of Papers received for PJSIR Publications	167
2	Total No: of Papers presents in Processing	307
3	Total No: of Papers Accepted	69
4	**A-1: Total No: of Papers Published from 1st July-2023 to 30th June 2024**	
4-1	In Physical Series: A	45
4-2	In Biological Series: B	54
5	**B: Work done by Computer Section**	
5-1	**Total No of pages composed for PJSIR Biological Sciences**	➢ **PJSIR Vol 66(2) Biological Sciences:** May- August 2023(Total 13 papers were published which contain 99 pages) ➢ **PJSIRVol66(3)Biological Sciences:** September-December 2023 (Total 15 papers were published which contain 113 pages) ➢ **PJSIRVol67(1)Biological Sciences:** January- April 2024 (Total 13 papers were published which contain 102 pages) ➢ **PJSIR Vol 67(2) Biological Sciences:** May-September,2023(Total13paperswere publishedwhichcontain109 pages)
5-2	**Total No of pages composed for PJSIR Physical Sciences**	➢ **PJSIR Vol 66(2) Physical Sciences:** May- August 2022 (Total 11 papers were published which contain 97 pages) ➢ **PJSIRVol66(3)Physical Sciences:** September-December2022(Total13Papers were published which contain 91 pages) ➢ **PJSIR Vol 67(1) Physical Sciences:** January- April 2023 (Total 10 Papers were published which contain 100 pages) ➢ **PJSIRVol67(2) Biological Sciences:** May-September, 2023 (Total 11 papers were publishedwhichcontain105 pages)
5-3	**Total No of pages for Bulletin Edited/Composed/ formatted**	➢ **ThreeIssueNos.471-473**,08Noofpages ➢ **ThreeIssueNos.474-476**,12Noofpages ➢ **ThreeIssuesNos.477-479,**12Noofpages
5-4	**Total No of pages for Research and Development Programme (R&D, 2023-2024) Edited/ Composed/formatted**	➢ **R&DProgramme2023-2024:**157Noof pages
5-5	**Total No of pages for Annual Report 2022-2023 Edited/ Composed/formatted**	➢ **AnnualReport2022-2023:**365No of pages

2) Significant Activities:

S. No	A: Annual Work done on PJSIR papers from 1st July -2024 to 30th June 2025	
1	Total no. of papers received for PJSIR publications	157
2	Total no. of papers present in processing	272
3	Total no. of papers accepted	57
4	**A-1: Total no. of Papers Published from 1st July -2024 to 30th June 2025**	
4-1	In Physical Series: A	47 Papers published
4-2	In Biological Series: B	50 Papers published
5	B: Work done by Computer Section	
5-1	Total no. of pages Edited/ Formatted/Composed/Proof read for PJSIR Biological Sciences	➢ PJSIR Vol 67(2) Biological Sciences: May-August 2024 (Total 13 papers were published which contain 212 pages) ➢ PJSIR Vol 67(3) Biological Sciences: September-December 2024 (Total 13 papers were published which contain 326 pages) ➢ PJSIR Vol 68(1) Biological Sciences: January-April 2025 (Total 13 papers were published which contain 122 pages) ➢ PJSIR Vol 68(2) Biological Sciences: May-August, 2025 (Total 11 papers were published which contain 246 pages)
5-2	Total no. of pages Edited/ Formatted/Composed/Proof read for PJSIR Physical Sciences	➢ PJSIR Vol 67(2) Physical Sciences: May-August 2024 (Total 11 papers were published which contain 204 pages) ➢ PJSIR Vol 67(3) Physical Sciences: September-December 2024 (Total 11 Papers were published which contain 322 pages) ➢ PJSIR Vol 68 (1) Physical Sciences: January-April 2025 (Total 13 Papers were published which contain 124 pages) ➢ PJSIR Vol 68 (2) Physical Sciences: May-August, 2025 (Total 12 papers were published which contain 234 pages)
5-3	Total no. of pages for Bulletin Edited/Composed/ Formatted	➢ Three Issue Nos. 465-467 , 08 No of pages ➢ Three Issue Nos. 468-470 , 08 No of pages ➢ Three Issue Nos. 471-473 , 08 No of pages ➢ Three Issue Nos. 474-479 , 12 No of pages ➢ Three Issue Nos. 480-482 , 12 No of pages
5-4	Total no. of pages for Research and Development Programme (R&D) Edited/ Composed/Formatted	➢ R&D Programme 2024-25: 206 No of pages

2.11- INSTITUTE OF INDUSTRIAL ELECTRONICS ENGINEERING, KARACHI



PCSIR Institute of Industrial Electronic Engineering, Karachi

ST-22/C, Block 6, Gulshan-e-Iqbal, Karachi

Tel: 021-99244581

E-mail: iieepcsir@iiee.edu.pk

Website: www.pcsir.gov.pk

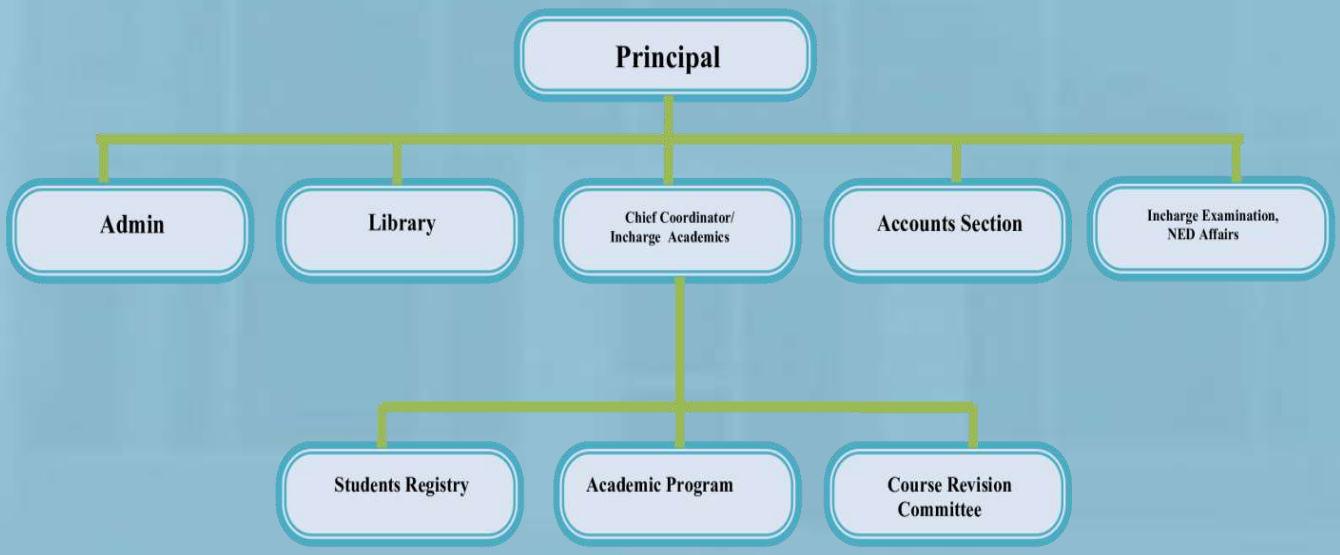


Name of the Head: Engr. Dr. Farah Haroon
Designation: Principal, IIEE;
Tenure: 03-01-2020 till date

Trained and Skilled manpower is a bloodline of Industries and Institutions of any country. Keeping in view the needs of the nation, PCSIR founded Institute of Industrial Electronics Engineering (IIEE) in 1989 in collaboration with SWISS CONTACT Government of Switzerland. The institute was established with aim to prepare trained and skilled manpower for the local Industry in the form of Industrial Electronics Engineering Graduates. IIEE is affiliated with N.E.D. University, Karachi

IIEE with its unique laboratory, workshops and computer facility, is inducting a batch of 47 undergraduates in 1st Year Engineering every year. Graduate Engineers of IIEE are very much sought by the industries/ organizations and those who have so far graduated are gainfully employed throughout the country and abroad

ORGANIZATIONAL CHART



1) Papers Publications by IIEE Faculty Members:

1. Jafri, Syed Riaz Un Nabi, Syed Murtaza Hussain, Asif Ahmed, Syed Asher Hussain Rizvi, Kumayl Hassan Kazmi, and Jamshed Iqbal. "Compact rover surveying and laser scanning for BIM development." Plos one 19, no. 3 [IF:2.7]. 2024
2. Habib. N, Hussain. **S**, Hafee. S. M. A. U, "Securing Pakistan's Cyberspace Cyber Counter Intelligence Strengths, Weaknesses and Strategies", IJIST, Vol. 06 Issue. 04 pp 1586- 1605, 2024
3. Memon, K. A., Jaffer, S. S., Qureshi, M. A., & Qureshi, K. K. Dynamic bandwidth allocation in time division multiplexed passive optical networks: A dual- standard analysis of ITU-T and IEEE standard algorithms. *PeerJ Computer Science, 10*, e477. 2024
4. Jaffer, **S.S**, Hussain, A., Qureshi, M.A. J.Mirza and Qureshi, K.K., "Reliable and cost efficient protection scheme for 5G fronthaul/backhaul network,),Volume 9, issue 3, E14215, Heliyon (IF:3.7] https://doi.org/10.1016/j.heliyon.2023.e14215. 2023
5. A. Arshad, M.Zahid, A. Yasar, Jaffer,S.S, "MIMO Antenna for C-band Applications" 2023 International multi-disciplinary Conference in emerging research trends (IMCERT), indus university Karachi. 2023
6. S.F.Hasany and Sajid Hussain, "Green Synthesis of nano graphite materials from lemon and orange peel: a sustainable approach" conference: ICS23 international symposiumon characterization: at Istanbul,NA,Turkey.
7. Nehal Abdul Rehman, Farah Haroon, "Adaptive Gaussian and Double Thresholding for Contour Detection and Character Recognition of 2D Area Using Computer Vision",Interact Karachi. 2023

1) Final Year Projects Developed in 2023-2024

- Ignite-National Technology Fund by MoIT Funded Projects
- Real Time Neural Signal Processing for Computer Controlling.
- Development of Sensor Based Wearable System for Sign Language to Speech Translation.
- Development of a Multi-Cell Phone Charging System and Power Monitoring with Biometric Security.
- Intelligent Laser Engraving Machine
- Industrial Projects
- Automation and Control of Grease Processing Plant at Target Oil Industries Pakistan Limited.
- Design and Installation of Real Time Thickness Profiling System for Polywood at Pakitex Boards (Pvt) Ltd.
- Upgradation and Automation of Long Hemming Machine for Towel Production at Afroze Textile.

- Energy Parameters Monitoring and Automation at Atlas Autos.
- Inhouse Developed projects
- Three-wheeler Omnidirectional Robot for 2D Spherical Scanning of the Indoor Environment.
- Enhancing Student Performance Through EEG-AI Based Classroom Device.
- Development of Smart Magic Mirror.
- IoT Based Non-Invasive Glucose Monitoring System.

2) Final Year Projects Developed in 2024-2025

The list of the final year project for the IIEE Batch 2021 are shown below.

i)Industrial Projects:

- Automation of Phosphating Plant at Pakistan Machine Tool Factory.
- Smart Production Monitoring System at Liberty Mills Limited.
- Development of Secure Paper Machine.
- Up gradation and Automation of 6-Axis Bending Machine at Jawed Engineering.

ii) Inhouse Developed projects:

- Development of Compatible Interfacing Device for Microprocessor Based System.
- Multi Robot Navigation System for Smart Warehouses.
- Non-invasive EEG Based Control of a Robotic Arm.
- Smart Glasses for Visually Impaired People.
- Food Texture Testing Machine.
- Development of Portable Asthma Diagnostic Device.
- AI Assisted Brain Computer Interface for EEG-to-Text Communication.

3) Exhibitions/Conferences/Seminars Organized & Participated

IIEE actively engaged in several prestigious events, including **TECHNOFEST Pakistan 2024**, **Dawlance Sustainability Hackathon 2025**, **IEEEP Industrial Fair 2025**, **SiMERGE 2025**, and the **PITB Digital Skills Program**. Students achieved remarkable success, securing top positions and significant cash prizes, showcasing their innovation in AI, IoT, sustainability, and business solutions. These participations strengthened industry- academia linkages and highlighted IIEE's commitment to fostering technological excellence.

i) Techno fest 2024 Participation and Winners:

At **TECHNOFEST Pakistan 2024**, held on October 12-13 at Expo Center Karachi, IIEE students showcased exceptional innovation and technical skills. The event, inspired by Turkey's renowned TEKNOFEST, featured competitions in advanced technologies, including AI, robotics, IoT, and smart solutions, attracting participants from across Pakistan. Among the winners, IIEE's final-year project,

"Design and Development of Smart Magic Mirror" earned the **1st prize of PKR 200,000**, highlighting its creativity and functionality in integrating IoT and AI for interactive user experiences. Additionally, **five other IIEE final- year projects secured positions in the Top 25**, each winning **PKR 20,000**. These achievements reflect IIEE's commitment to fostering technological innovation and excellence among its students.

4) Mou, Tors & Agreement.

- **This Agreement** is made between the **National Vocational & Technical Training Commission (NAVTTC)** and the **Institute of Industrial Electronics Engineering (IIEE), PCSIR**, on **12th March 2025**.
- NAVTTC is an apex regulatory body at the national level that regulates, facilitates, sets skills standards, accredits programs, and provides policy direction in the Technical & Vocational Training Sector.

5) Workshops/Training Organized &Attended.

IIEE has conducted a diverse range of **workshops, training sessions, and interactive programs** for students and faculty, focusing on both **emerging engineering trends** and **social awareness**. These initiatives aim to enhance technical expertise while fostering a strong sense of social responsibility and holistic development. **Lecture on Trending Technology: Basics of Solar PV System:**

IIEE has organized an **Interactive Lecture Program** titled **"Trending Technology: Basics of Solar PV System"** on **December 9, 2024**, from **10:00 AM to 1:00 PM**. This training aims to provide a comprehensive understanding of Solar PV systems, covering topics like system efficiency, components, solar site analysis, inverter types, system design, mounting structures, and best practices for installation and commissioning. It targets both beginners and professionals, equipping participants with skills for designing, analyzing, and implementing solar PV systems.



2.11- PAK-SWISS TRAINING CENTRE, KARACHI



PCSIR Pak-Swiss Training Centre, Karachi

PCSIR Labs Campus, Shahra-e-Dr. Salimuzzaman Siddiqui, Karachi

Tel: 021-99261970

E-mail: pcsirpstckarachi@gmail.com

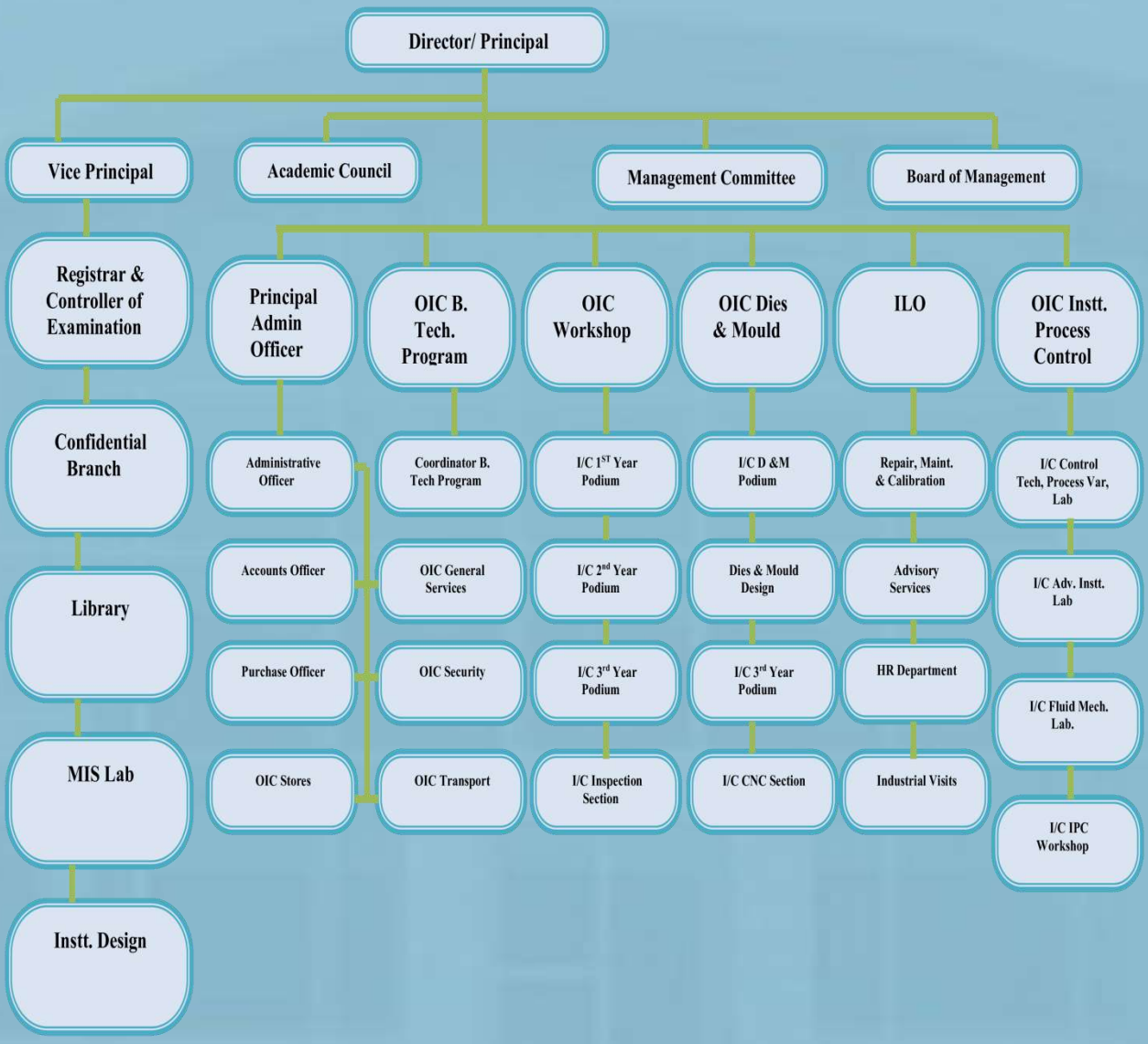
Website: www.pcsir.gov.pk



Name of Head: Syed Farhan Hamid Ali
Designation: Director
Tenure: From October 18, 2022 to Till Now

Pak Swiss Training Centre (PSTC), Karachi a unit of Pakistan Council of Scientific & Industrial Research (PCSIR). The establishment of Pak Swiss Training Centre was to provide technical personnel for the emerging industrial sector in the Country. PSTC came into existence in 1965 and started functioning with introducing a training program of 03 Years Diploma in the discipline of Precision Mechanics and Instrument Technology. Since its inception it has progressed and introduced new training programs in different disciplines. Due to its high standards and recognition, the trained manpower have played their role in national development and capacity building of national industries.
In Morning, 03 Years Diploma Course of Associate Engineer in Mechanical Technology with Specialization in Precision Machining & Instrument Technology for 48 students per year and 04 Years Diploma of Associate Engineer in Mechanical Technology with Specialization in Dies &Mould Technology for 18 students per year and in the Evening 66 students are conducted according to the methods of training followed in Switzerland. The Course is affiliated with the Sind Board of Technical Education, Karachi. Three years Diploma Course of Associate Engineer in Instrumentation and Process Control Technology also initiated in morning, in the year 2005 for a Batch of 30 students from all over Pakistan, now, the seats have been increased up to 40.
In addition to the regular Diploma courses, PSTC is also organizing and conducting the evening short courses (CAD/CAM, PLC, CNC, Electronics& Dies & Mould) of 06 months duration through NAVTTC under Kamyab Jawan Program Scheme of Prime Minister of Pakistan, since 2020.

ORGANIZATIONAL CHART



Important Events Organized by Pak-Swiss Training, Karachi

Teaching Theory Courses:

- Business Management & Industrial Economics.
- Applied Thermodynamics & Energy Conservation.
- Safety Practice Machine control technique.
- Electro pneumatic & Hydraulics Control System.
- Industrial Management & Human Relations

Academia: 2nd Convocation of PSTC Karachi



The Pak-Swiss Training Centre (PSTC), Karachi, celebrated its second convocation on November 14, 2024, awarding diploma certificates to graduates across three technologies and honoring top achievers with appreciation shields. Engr. Farhat Muhammad Khan, Chancellor of Nazeer Hussain University, presided over the ceremony as Chief Guest, while Dr. Hafiz Rub Nawaz, DG KLC, and Dr. Farah Haroon, Principal IIEE, graced the event as Guests of Honor. Graduates attended the ceremony along with their parents, who expressed appreciation for the well-organized event. Engr. Syed Farhan Hamid Ali, Director PSTC, presented a report highlighting the year's achievements and future plans. The event also welcomed the participation of the former Director of PSTC.

MoU's Signed: Pak Suzuki Motors Limited



On November 29, 2024, a Memorandum of Understanding (MoU) was signed between Pak Suzuki Motor Company Limited and Pak-Swiss Training Centre (PSTC), Karachi. The MoU focuses on knowledge transfer, apprenticeship opportunities, internships, and job placements for PSTC students, marking a significant collaboration. The agreement was signed by Mr. M. Ali Lodhi, EO-Operations & IT, along with his management team, and Engr. Syed Farhan Hamid Ali, Director PSTC, along with his team. This partnership is expected to benefit both organizations by fostering the development of a skilled workforce.

Pakistan HVACR Society, Karachi Chapter



On August 7, 2025, PSTC Karachi was invited to sign a Memorandum of Understanding (MoU) with the Pakistan HVACR Society, Karachi Chapter. PSTC was represented by Engr. Syed Farhan Hamid Ali, Mr. Muhammad Zahid Alam, Mr. Nooruddin, and Mr. Azam Ali Noori. From the HVACR Society, Mr. Aley Muhammad (Chairman) and Mr. Farrukh (Coordinator, Student Affairs) participated in the signing ceremony. This collaboration will provide PSTC students with opportunities to learn and explore HVACR technology, marking a significant step toward introducing this emerging field into the institute's technical training programs.

Engro Pakistan Limited Recruitment Drive at PSTC – February 22, 2025



We are pleased to share that Engro Pakistan Limited, a renowned multinational company, conducted a recruitment drive on February 22, 2025. More than one hundred PSTC graduates participated, reflecting the institution's commitment to developing industry-ready talent. This collaboration highlights PSTC's strong reputation for excellence and its ability to attract leading organizations such as Engro Pakistan Limited. We are proud of our graduates and remain committed to providing them with continued opportunities for professional growth.

Build Well (Dubai) Recruitment Drive at PSTC – August 21, 2025



"Build Well", a Dubai-based company, has maintained a long-standing professional relationship with PSTC and has consistently recruited skilled graduates over the years. On August 21, 2025, the company's recruitment team visited PSTC to conduct a formal hiring drive aimed at selecting qualified candidates from the institute's final-year batch. During the visit, structured interviews were held to assess the technical competencies, practical skills, and overall suitability of the students for international employment standards. The recruitment process provided graduates with valuable exposure to industry expectations and professional interview practices. This ongoing collaboration reflects the strong confidence of international employers in PSTC's training quality and competency-based education system. Alhamdulillah, as a result of this

engagement, around five graduates are expected to secure employment opportunities in Dubai, marking another successful milestone in PSTC's efforts to support global career pathways for its students.

PSTC Director Engages with Russian Delegation on Scholarships and Admissions Opportunities – October 21, 2023

On October 21, 2023, Engr. Syed Farhan Hamid Ali, Director PSTC, was invited as Guest of Honor at an exhibition promoting admissions and scholarships in Russian universities. Dr. Masroor Ahmed Sheikh, Chairman SBTE, warmly welcomed the Director PSTC, introduced him to the Russian delegation, and commended his efforts. The Director PSTC held discussions with the Russian representatives regarding admission procedures and government scholarship opportu nities, highlighting promising pathways for PSTC students to pursue higher education in Russia.



PSTC Sports Week 2024 – A Celebration of Energy, Talent, and Team Spirit

The Director PSTC, committed to promoting student physical activities, organized a dynamic Sports Week that generated great enthusiasm among participants. The event commenced on March 01, 2024, with an inauguration ceremony attended by senior faculty members, the Director PSTC, and esteemed guest Mr. Mansoor Hai from KLC. The tournament featured four exciting sports—cricket, futsal, foosball, and table tennis—ensuring a diverse and engaging experience for all participants, while fostering teamwork, healthy competition, and student engagement.



PCSIR High-Level Visit to PSTC Karachi and Appreciation of "Shukria PSTC" Initiative – April 26, 2024

On April 26, 2024, Secretary PCSIR, Mr. Tanvir Ahmed Khan, accompanied by Director (Audit) Mr. Inam-ul-Haq and Ms. Razia Kalsoom, SSO PCSIR Laboratories Islamabad, visited PSTC Karachi to observe ongoing training sessions aimed at enhancing student skills. During the visit, the Secretary PCSIR highly appreciated the "Shukria PSTC" project, an initiative focused on the repair and maintenance of machines launched by PSTC alumni and well-wishers. This proactive engagement by senior officials is expected to further motivate both students and



instructors, fostering a more conducive environment for learning, innovation, and professional growth at PSTC Karachi.

FFBL Contribution of PKR 0.5 Million to PSTC Karachi for Educational Development

Fauji Fertilizer Bin Qasim Limited (FFBL) presented a generous gift of PKR 0.5 million to PSTC Karachi, symbolized through the ceremonial handing over of a cheque. This contribution is specifically intended to enhance educational opportunities and support student development at PSTC.
The FFBL delegation, led by Mr. Muhammad Abdul Baqi, General Manager Plant, included Lt. Col. ® Asadullah Khan, Manager Medical, and Mr. Dabeer-uz-Zaman Khan, Unit Manager TTC. The team reaffirmed their commitment to supporting educational initiatives and strengthening industry–academia collaboration.

Alumni-Led Educational Visit on Precision Machining and Instrumentation – June 10, 2024



On June 10, 2024, Mr. Imran Ehsan, Head of Department at Hawk Technical Training School of Aviation Pvt. Ltd. and an alumnus of PSTC (12th Batch), visited PSTC Karachi along with final-year students. The visit aimed to provide students with practical exposure to precision machining and instrumentation process control.
During the visit, the Director PSTC briefed the participants about the institute's history and its significant contributions to technical education. Mr. Imran Ehsan expressed his gratitude to the Director PSTC for the informative and insightful session. The visit greatly enriched students' understanding of advanced technical processes and industry practices.

1) Seminar / conference

Redefining education by transitioning from rote to conceptual learning through assessments

Director PSTC was honored to attend an awareness seminar on "Redefining Education by Transitioning from Rote to conceptual learning through assessments". At Dawood University of Engineering and Technology. The seminar, organized by the Inter Board Coordination Commission (IBCC), was graced by the presence of Syed Sardar Ali Shah, Education Minister of Sindh, as the chief guest. Engr. Samreen Hussain, Vice Chancellor of Dawood University, served as the host of the event. The seminar highlighted innovative approaches to education aimed at fostering critical thinking and understanding. It brought together educators, policymakers, and experts to discuss transformative strategies.

2) Renewal of Iso 9001-2015 Quality Management System

PSTC is gearing up for ISO 9001:2015 Quality Management System certification for the year 2025-26. After successful completion of three years. That's awesome. By pursuing this certification, we are enhancing our systems and procedures, and making sure our staff and students are familiar with and follow the Quality Management System.

2.1) Benefits of ISO 9001:2015 Certification

1. Improved Quality and Customer Satisfaction: ISO 9001 helps ensure consistent quality in products and services, meeting customer expectations and enhancing satisfaction.

2. Increased Efficiency: By establishing clear procedures for every activity, you minimize errors and process failures.
3. Enhanced Credibility and Competitiveness: ISO 9001 certification demonstrates your commitment to quality, boosting your reputation among clients and partners.Key Aspects of ISO 9001:2015
4. Focus on Leadership and Risk-Based Thinking: The standard emphasizes leadership involvement and risk management.
5. Process Approach and Continual Improvement: ISO 9001 encourages a process-based approach to quality management and promotes ongoing improvement.

PSTC Road Map

Development of ORIC Center

Pak-Swiss Training Centre (PSTC), Karachi, has formally submitted a proposal to the PCSIR Head Office for the establishment of an Office of Research, Innovation, and Commercialization (ORIC) at the institute. This initiative is planned in collaboration with the Dynamic Research Institute's ORIC Division.

Once approved, the ORIC will serve as a dedicated platform to promote applied research, foster innovation, and strengthen linkages between academia and industry. The centre will provide opportunities for students and faculty to engage in innovative projects, commercialization initiatives, and industry-driven solutions. Through this step, PSTC aims to enhance its academic and research capacity while contributing to national socio-economic development.

MoUs Sign With Gatron & Thermoplas industry

Pak-Swiss Training Centre (PSTC), Karachi, has signed multiple MoUs with various industries to strengthen industry–academia linkages and support students in their career development. These collaborations have already proven valuable in providing opportunities for employment, internships, and apprenticeships. Continuing this initiative, PSTC is now in the process of signing MoUs with Gatron Private Limited and Thermoplas Company. These upcoming partnerships will further enhance opportunities for students by connecting them with leading industrial organizations. Such initiatives reflect PSTC's commitment to equipping graduates with practical exposure and ensuring their smooth transition into the professional world.

3 Years DAE in Precision Machining & Instrumentation Technology

Pak-Swiss Training Centre (PSTC), Karachi, has secured official affiliation with the Sindh Board of Technical Education (SBTE). Previously, the centre had been operating on an endorsement basis since its inception. This significant development now enables PSTC students to obtain officially recognized certifications. As a result, graduates are eligible to pursue higher education and access employment opportunities both locally and internationally. The affiliation ensures that the skills imparted at PSTC meet standardized educational criteria, thereby enhancing students' prospects in the global job market.

3 Years DAE in Dies & Mould Technology

Pak-Swiss Training Centre (PSTC), Karachi, has secured official affiliation with the Sindh Board of Technical Education (SBTE). Previously, the centre operated on an endorsement basis since its inception. This significant development now allows PSTC students to obtain recognized certifications. Consequently, graduates can pursue higher education and seek employment opportunities both locally and internationally. The affiliation ensures that the skills acquired at PSTC meet standardized educational criteria, thereby enhancing students' prospects in the global job market.

Equipment Developed

Build Well Plastic Industries LLC (Dubai) – Contribution of 3D Printer to PSTC

Build Well Plastic Industries LLC, a Dubai-based company, recently conducted two highly successful recruitment drives at PSTC Karachi.

Impressed by the caliber of PSTC graduates selected through rigorous tests and interviews, the company recognized the exceptional quality of training provided by PSTC.

During discussions with PSTC Industrial Liaison Officer, Mr. Nooruddin, the company expressed its desire to donate a 3D printer to further enhance practical training facilities. The state-of-the-art 3D printer has now been received and installed at PSTC.

In order to maximize its effective use in teaching and learning, two dedicated technical staff members have been nominated for comprehensive training. This will enable them to guide students in utilizing this advanced technology for educational and skill development purposes.

Exhibitions/ Conferences/ Seminar Organized

Book Carnival

PSTC hosted its inaugural two-day Book Carnival on January 09–10, 2024, featuring a diverse range of materials, including technical and reference books, safety equipment, student uniforms, and technical geometry accessories. The event, held at the PSTC lawn, was inaugurated by Mr. Abdul Munaf Sheikh (First Batch, 1965) and Mr. Anwer Soorti (14th Batch).

Notably, students' projects were also displayed, showcasing creativity and innovation, and receiving appreciation from parents and attendees. Mr. Sarwar Karim, Vice Chairman PSTC OBA, also visited the Book Carnival. The Director PSTC was commended for successfully organizing and executing this well-received event.

Seminar at Mehran University, Jamshoro

Today, a workshop was conducted by PSTC Karachi at Mehran University of Engineering and Technology (MUET), Jamshoro, in collaboration with the IEEE IMS MUET Student Branch Chapter and the Department of Electronic Engineering. The workshop was organized with the support of IEEE ComSoc. The Director PSTC, along with faculty members of the Electronic Department of PSTC, was invited to conduct the workshop. The invitation extended to PSTC by Mehran University was a commendable gesture, reflecting their commitment to fostering knowledge sharing and academic collaboration.

MoU / ToR Signed:

MoU Signing with NAVTTC
MoU Signing with Hamdard University
MoU Signing with NAZEER
MoU Signing Manufacturing PVT. Ltd

Work Shop/ Trainings Organized

Workshop on Time Management

Today, on August 2, 2023, Ms. Umaimah Muzzamil, General Manager of Pharmevo Private Limited, was invited as an inspirational speaker for the NAVTTC Prime Minister's Youth Skill Development Program Batch IV at PSTC, Karachi. Her session left a strong impression on the students. To commemorate the session, a memento was presented by the Director PSTC. She appreciated the Director's efforts and shared positive remarks about PSTC.

Management and Leadership Development

On December 14, 2023, NILAT (Government of Sindh) hosted a transformative three-day workshop on Management and Leadership Development, featuring distinguished sessions led by top executive directors from reputable industries and renowned speakers. The Director General KLC, along with the

team of PCSIR KLC, actively participated throughout the event. Additionally, the Director PSTC Karachi, Engr. Hammad Ahsan, and Mr. Azam Ali Noori attended the comprehensive training. The impactful program concluded with a certificate distribution ceremony, marking the successful culmination of insightful and enriching sessions.

Customized 45-Day Training Program for M/S Unified Flex Packaging Technologies (Canada) at PSTC – Certificate Distribution Ceremony

PSTC, renowned for its practical training and technical skill development, was approached by the Canadian company M/S Unified Flex Packaging Technologies.
In response, PSTC designed a customized 45-day training course tailored specifically to meet the company's requirements, ensuring maximum relevance and delivering high-quality training through experienced faculty.
On February 23, 2024, the certificate distribution ceremony was held, during which the CEO of the company was also present. He personally thanked the Director PSTC and the PSTC Industrial Liaison Officer, expressing satisfaction with the training and pledging to send more staff in the future for similar programs. Certificates were awarded to five engineers who successfully completed the training, and the CEO presented a souvenir to PSTC leadership in appreciation of their efforts.

GSP+ILS

The three-day training AT NILAT attended by PSTC senior staff members, Muhammad Zahid Alam (Chief Instructor), Noor Uddin (Chief Instructor), Bahar Muhammad (Chief Instructor), Hassan Mehdi Mirza (Purchase Officer) nominated by Director PSTC, holds significant importance. It focused on GSP+ status of Pakistan and International Labor Standards (ILS), enhancing their understanding and proficiency in these crucial areas. This investment in training ensures a well-informed and skilled team, contributing to the organization's effectiveness and adherence to global standards. The initiative reflects a commitment to staying updated on key topics for better organizational performance.

ISO 14001-2015 Environmental Management System

To reaffirm the importance of enhancing the knowledge and skills of technical staff, three PSTC technical staff members attended a three-day training program on the ISO 14001:2015 Environmental Management System Standard and Environmental Legislation at NILAT. The training equipped the participants with valuable knowledge and skills to promote environmental sustainability and ensure regulatory compliance within the organization.

2.12- PRECISION SYSTEM TRAINING CENTRE, LAHORE



PCSIR Precision System Training Centre, Lahore

Ferozepur Road (adjacent to NBP), Lahore
Tel: 0 4 2 - 9 9 2 3 1 7 9 7
E-mail: pcsirpstclahore@gmail.com

Website: www.pcsir.gov.pk



Name of the Head: Engr. Tariq Waheed Qureshi
Designation: Director
Tenure: October 21, 2022 to date

Precision Systems Training Centre – Lahore (PSTC – Lahore) was established in 2007 considering the requirement of the local industry for introducing training programme in Mechanical and Instrument Technology.

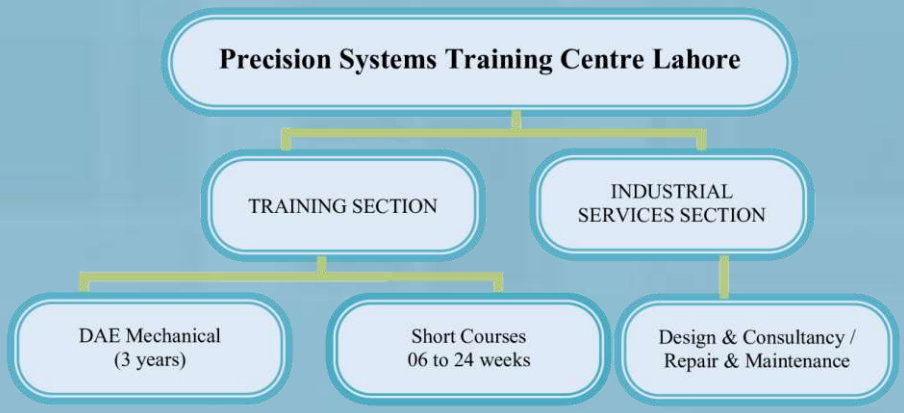
Objectives are to provide the foundation for development and generation of technical know – how and to organize and conduct training in the following fields:

i. DAE in Mechanical Technology with specialization in Precision Mechanical & Instrument Technology (3 years)

ii. DAE in Mechanical Technology with specialization in Dies & Moulds Technology (3 years)

iii. Short term courses of 06 to 24 weeks duration for Engineer & Technicians employed in the industries.

ORGANIZATIONAL CHART



Academic Activities:

1. Gold Medalist in DAE Annual Examinations throughout Punjab.

It is a matter of pride that two PSTC students enrolled in DAE programs in Precision Mechanical & Instrument Technology (3 years) and Dies & Mould Technology (4 years) secured first position in the Annual Examination 2024 across Punjab. In recognition of this achievement, the Punjab Board of Technical Education awarded them gold medals and merit certificates.



2. Merit Scholarships Awarded by Punjab Board of Technical Education.

Twelve students of PSTC Lahore secured distinctions in the Annual Examinations for the DAE programs in Precision Mechanical & Instrument Technology (PMIT) (3-year course) and Dies & Mould Technology (DM) (4-year course). In recognition of their outstanding academic performance, the Punjab Board of Technical Education (PBTE), Lahore, awarded them merit scholarships.







3. Pass outs.

The 16th batch, comprising 43 trainees enrolled in the DAE program in Mechanical Technology with specialization in Precision Mechanical & Instrument Technology (PMIT) (3-year course), and the 15th batch, comprising 13 trainees enrolled in Mechanical Technology with specialization in Dies & Mould Technology (DM) (4-year course), successfully completed their training in April 2025. Throughout their academic tenure, the trainees received comprehensive theoretical instruction and extensive hands-on training in modern manufacturing technologies, precision machining, instrumentation, dies and mould design, quality control, and industrial practices.

The successful completion of these programs reflects PSTC Lahore's commitment to producing highly skilled technical professionals capable of meeting the evolving demands of local and international industries. The graduates demonstrated strong technical competence, practical expertise, and professional discipline, making them highly sought after by employers.

As a result of the industry-oriented training provided at PSTC Lahore, a significant number of graduates have secured employment in well-reputed industries and organizations across various sectors, including manufacturing, engineering, automation, maintenance, tooling, and process industries. Many graduates have also obtained employment opportunities abroad, contributing to Pakistan's skilled workforce and enhancing the institute's reputation at the international level. Their success serves as a testament to the quality of training imparted at PSTC and its continued role in human resource development for industry.

4. Job Fair at PSTC-Lahore.

As human resource development is one of the primary objectives of the Centre, PSTC Lahore is committed to providing high-quality technical training aligned with the needs of industry. As a result, several leading industries and organizations regularly conduct recruitment tests at PSTC Lahore and recruit its graduates. Some of these industries and organizations are as follows:

1. Sprint Oil & Gas, Pvt. Ltd.
2. SPEL, Pvt. Ltd.
3. Zahoor Die Casting, Pvt. Ltd.
2. GMS, Pvt. Ltd.
4. Qadri Bros, Pvt. Ltd.
6. Precision Forging, Pvt. Ltd.





5. Introduction / Development of Curriculum for DAE in Dies & Mould Technology (3 years) with the approval of National Vocational & Technical Training Authority (NAVTTC).

PSTC Lahore's DAE in Dies & Mould Technology was previously a four-year program, which reduced student admissions despite strong industry demand for the field identified by NAVTTC/GIZ skill gap analysis. To address this issue, PSTC introduced a revised three-year DAE program in Dies & Mould Technology from the 2024–25 session. The updated, industry-aligned curriculum was developed in consultation with stakeholders and approved by NAVTTC, making it nationally recognized and better aligned with market needs.

6. Sports Week

Sports help improve both mental and physical health, and students often experience increased energy levels and improved well-being through participation in sports activities. In this regard, a Sports Week was held at the Centre in February 2025, during which students actively participated in various sporting events. A concluding ceremony was also arranged to distribute trophies and certificates among the winners of different competitions.





7. Examination Centre Established by "Punjab Board of Technical Education".

PSTC Lahore has been established as an examination centre by the Punjab Board of Technical Education (PBTE) for the DAE 1st Annual Examination 2025. More than 250 students are appearing in the said examinations at this centre.

2.13- PCSIR CAST-METAL & FOUNDRY TECHNOLOGY (CM&FT) CENTRE, DASKA



PCSIR Cast-Metal & Foundry Technology (CM&FT) Centre, Daska

Small Industries Estate (SIE) Daska, District Sialkot
Tel: 052-6625045
E-mail: pcsirpcmftdaska@gmail.com
Website: www.pcsir.gov.pk



Name of the Head: Engr. Abdul Wahab
Designation: Sr. Engr/OIC
Tenure: 17/08/2020 to 26/09/2026

The Cast Metals & Foundry Technology Centre, Daska, is a Public Sector Development Programme (PSDP)-funded project established at the Punjab Small Industries Estate, Daska. The project was executed at a total capital cost of Rs. 304.7 million, which includes Rs. 95.00 million as Foreign Exchange Component (FEC). It was initiated in January 2005 and successfully completed in December 2011.

Since its inception, the Centre has emerged as a key technical support institution for the engineering sector, particularly the cast metals and foundry industry. It is dedicated to strengthening industrial competitiveness by providing a wide range of technical, advisory, and developmental services. Through its facilities and expertise, the Centre contributes significantly to industrial problem-solving, quality enhancement, and process optimization.

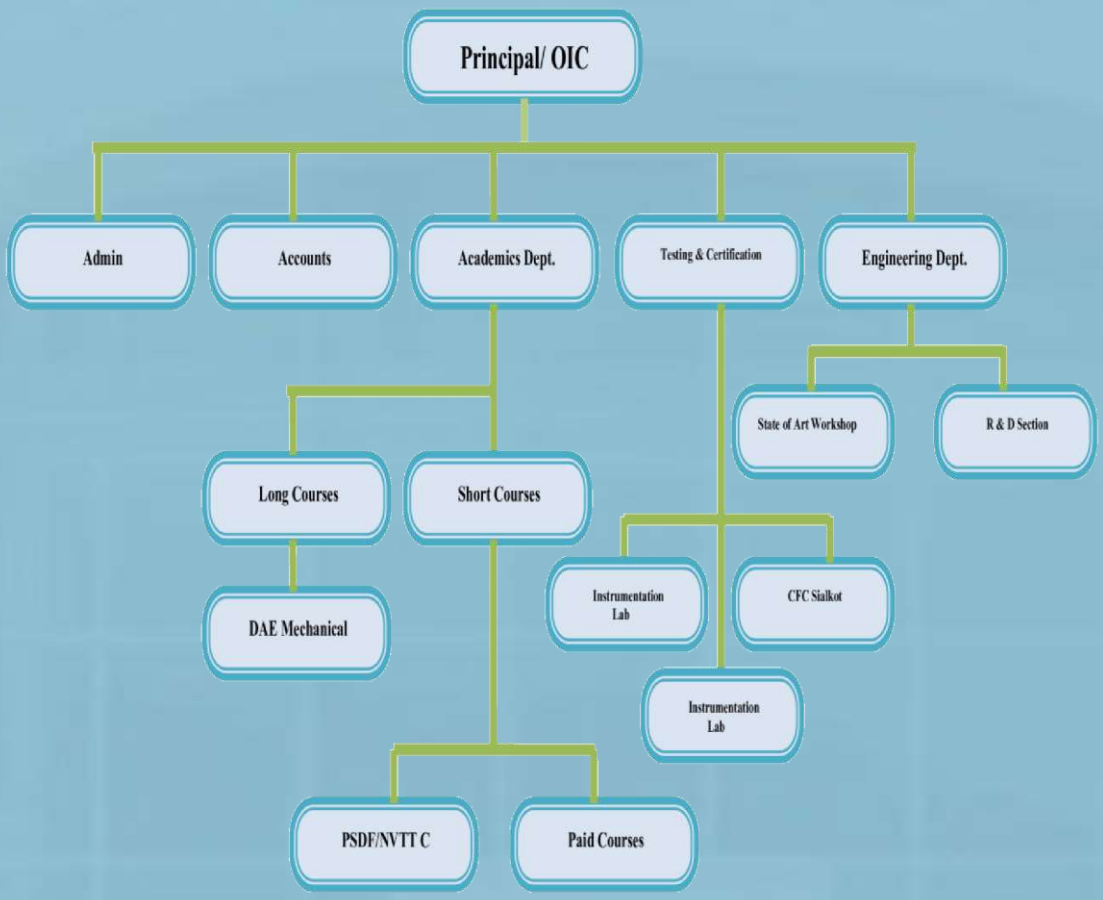
The Centre plays an important role in bridging the gap between industry and academia by supporting applied research, innovation, and skill development initiatives. It actively engages with research scholars, technical institutions, and industrial enterprises to promote modern foundry practices and advanced metallurgical techniques.

Overall, the Cast Metals & Foundry Technology Centre, Daska, serves as a vital platform for industrial advancement, fostering technology transfer, capacity building, and sustainable growth in the metal casting and foundry sector.

The Centre actively promotes industrial projects and facilitates research scholars, academic institutions, and industries in the following key areas:

- Provision of highly trained and skilled human resources to relevant institutes and engineering industries.
- Sharing of technical information, research literature, and industrial know-how related to Cast Metals Foundary Technology.
- Design and delivery of customized training programs for professionals and employees in the metal casting and foundry industry.
- Product design, development, and process improvement in collaboration with joint venture (JV) partners and industry stakeholders.
- Chemical analysis of metallic samples using a world-class Optical Emission Spectrometer (OES) for precise material identification.
- Conducting comprehensive physical and mechanical testing, including hardness, tensile strength, and impact testing.
- Heat treatment of metallic components using modern facilities such as muffle furnaces, induction hardening systems, and controlled heat treatment processes.
- Technical consultancy services for process optimization, quality improvement, and production efficiency in foundry operations.
- Facilitation of research and development (R&D) projects for students, researchers, and industrial partners.
- The Centre comprises a well-equipped Academic Block, Administrative Block, Workshop Building, and Hostel facility to support training and residential needs of trainees and visitors.

ORGANIZATIONAL CHART



1) Conduction of Short Courses in Collaboration with NAVTTC

Academic Year	Course	Enrolled students
2023-24	Advanced CAD/CAM	45
	Advance CNC	45
	Machinist	20
	Total	**110**

2) Conduction of Short Courses in Collaboration with PSDF

Academic Year	Course	Enrolled students
2023-24	2D 3D Drafting using Auto CAD	89
	CNC Machine Operator	50
	Total	**139**

3) MoUs / JV's Agreements/Collaborations:

PCSIR has established a Common Facility Centre (CFC) at SIMAP, Sialkot. The objective of the centre is to provide technical services and testing facilities to stakeholders. A number of industries have been served, and more than 4,000 analytical tests have been conducted to date.

PCSIR also established a Sample Collection Centre (SCC) at the Gujranwala Chamber of Commerce and Industry in 2014 to facilitate sample submission and improve access to testing services for industrial clients.

Contact Us

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