



معهد البحوث الصناعية  
INDUSTRIAL RESEARCH INSTITUTE  
INSTITUT DE RECHERCHE INDUSTRIELLE

# ANNUAL REPORT 2024

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## Our continued dedication and effort keep us at the heart of support for Lebanon's productive sector

*Message from*

**Dr. Bassam Frenn**, *Director General*



Looking back on 2024, Lebanon faced one of its most challenging years in recent memory. Political stagnation, economic strain, and mounting security concerns placed tremendous pressure on the country. A prolonged presidential void, a deepening banking crisis, and the deterioration of basic public services affected the daily lives of citizens. The escalation of conflict added further human and material losses across multiple sectors.

In the face of these difficult conditions, the Industrial Research Institute (IRI) remained fully operational and committed to its mandate.

Driven by a strong sense of public responsibility, IRI continued to play a stabilizing role in Lebanon's industrial ecosystem. Despite our headquarters being located near targeted areas, and sustaining direct damage, our staff stayed on the ground, dedicated to delivering services without interruption. Their resilience reflects the discipline and shared values that define our team.

Throughout the year, IRI worked closely with ministries, public institutions, and private sector partners to strengthen the industrial sector. We provided hands-on technical support, advanced laboratory services, and expert consultation. In doing so, we helped enhance production, improve quality standards, and modernize distribution and

export mechanisms.

IRI's leadership followed a clear, results-oriented strategy focused on continuity, responsiveness, and operational resilience. This consistent approach reinforced our essential role in supporting national industry through periods of uncertainty.

On the international front, we broadened our collaborations with key institutions across Europe and beyond. These partnerships not only enhance our technical capabilities but also create new opportunities for Lebanese industry to innovate and expand.

At IRI, we do not know fatigue, fear, or hesitation. Our work is guided by national values, our loyalty is to Lebanon, and our goal is clear. We believe in industrial renewal as a path to economic recovery, through job creation for youth, consumer protection, and support for local production.

Today, the Industrial Research Institute remains a trusted partner to Lebanon's productive sectors. Our identity is national, and we continue to work with steady, clear purpose to support business growth, contributing, step by step, to Lebanon's recovery.

## IRI: ITS PURPOSE & FUNCTION

The Industrial Research Institute is a Lebanese institution for studies, industrial research, and scientific testing and analysis. IRI is a non-profit, non-commercial, public utility organization having an independent legal personality with the right to own, purchase, sell, insure, accept donations, take loans, and engage in litigation and similar activities. IRI was founded in 1953 as per an international agreement and was linked to the Ministry of Industry pursuant to Article 3 of Law n° 642 of June 2, 1997. IRI is governed by private law, and its bylaws and internal and financial regulations.

IRI enjoys financial and administrative independence and is subject to post-auditing by the Court of Accounts in what concerns the contributions of the government to IRI.

IRI's headquarters are located in Hadat, and it is entitled to establish branches in all parts of the Lebanese Republic and abroad.

IRI is an independent national research center, and combines:

- Knowledge, expertise, and specialization
- Scientific material and equipment
- Data and technical documents.

IRI offers specialist scientifically reliable services to the national economy as well as existing industry and those which can be established with the aim of industrial development. The services include:

- Consultations
- Studies and research
- Testing, metrology, and analysis.

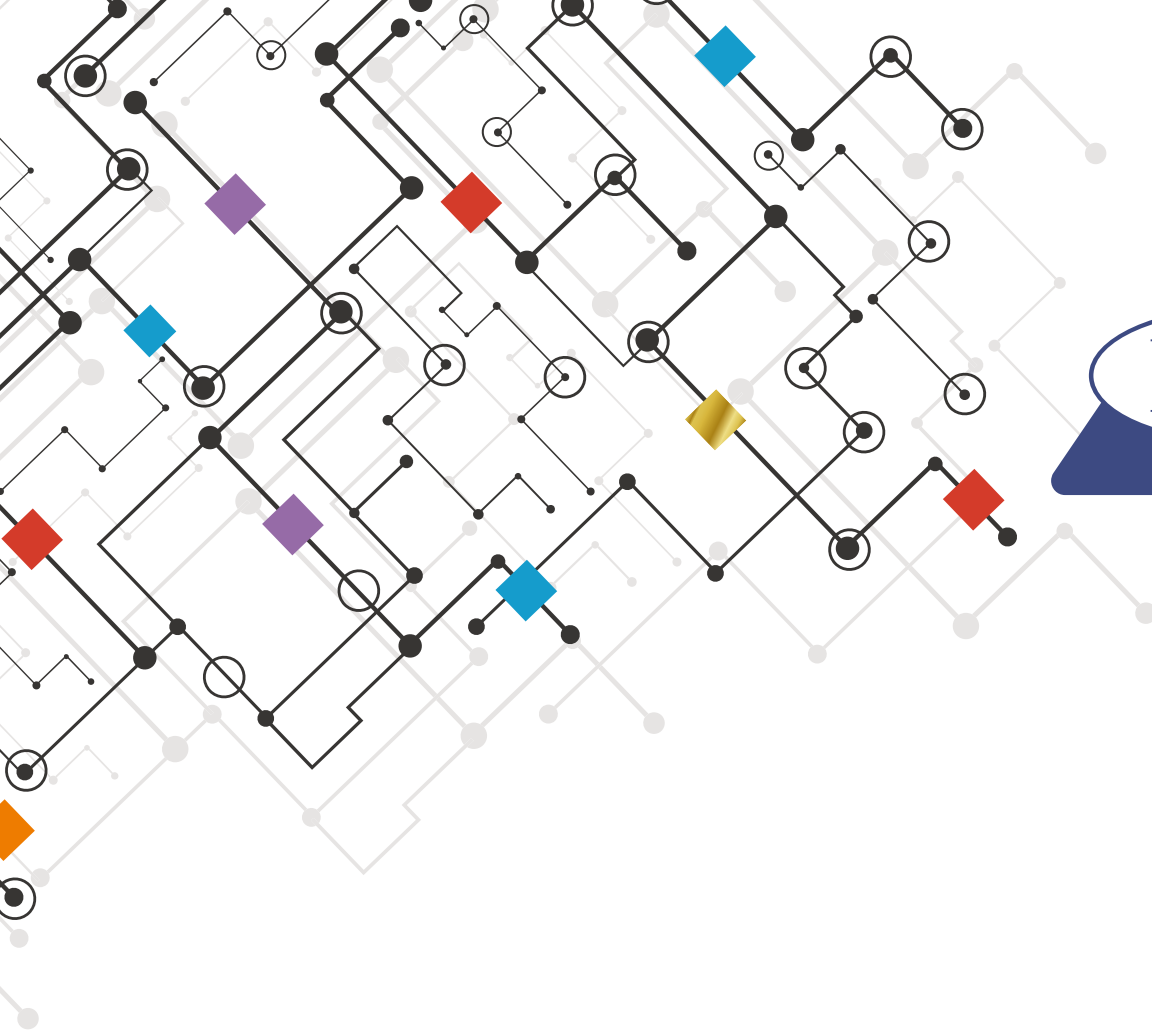
IRI, through its activities and operations, seeks to achieve the following goals:

- Conducting research and studies to enable the establishment of new industries
- Conducting research and studies on various materials and items to learn their properties and determine their uses and applications
- Offering specialist consultations on technological, administrative, and economic matters related to existing industry with the aim of industrial development and encouraging the creation of new industries
- Offering internationally accredited services in testing, analysis, and metrology related to materials and items, and issuing certificates of quality and conformity certificates
- Collaborating with national and international official bodies, and economic institutions and trade unions with the goal of fostering economic development.

IRI brings together a reliable body of experts, specialists, and engineers in many fields to carry out its activities, supported by another body of administrators, accountants, and clerks who undertake administrative tasks and other internal services.

## OUR ETHICAL STANDARDS

In carrying out its functions, the Institute adheres to ethical and professional standards whereby it safeguards the clients' best interests. Furthermore, IRI regards as the client's property any information, processes, patent or techniques developed during work with the client and safeguards such matters in complete secrecy.



# GENERAL PUBLIC ACTIVITIES



*The activities of the Industrial Research Institute have revolved around various themes, projects, and programs, ranging from engaging in pharmaceutical analyses, marking a pioneering and qualitative step in this domain, to the development and modernization of the wine sector, aiming for a fresh and distinctive transformation beyond the conventional approach with the goal of expanding the sector's size and global reach. Dr. Frenn affirms that these initiatives are part of a developmental and modernizing trajectory that the institute has pursued for 25 years and continues to uphold, driven by the administration's commitment to providing the best and fastest services to safeguard citizens and society.*

## PM MIKATI DURING THE OPENING OF THE PHARMACEUTICAL LABORATORY AT IRI: GIVING UP IS NOT AN OPTION

### FRENN: “A NEW ACHIEVEMENT KEEPING PACE WITH MODERN TECHNOLOGICAL ADVANCEMENTS AND THANKS TO INTERNATIONAL PARTNERSHIPS

**August 5, 2024**

Prime Minister Najib Mikati inaugurated the “Pharmaceutical Laboratory” at the Industrial Research Institute, in the presence of the Ministers of Industry, Public Health, and Agriculture, along with Dr. Bassam Frenn, the Director General of the institute, and several senior officials, as well as heads of industrial, sectoral, medical, and pharmaceutical associations and unions.



**Dr. Frenn** welcomed Prime Minister Mikati and the attendees, saying, “Today, we celebrate a new achievement that adds to the successes we have accumulated over the past quarter-century, thanks to the policies we have applied, the international partnerships we have established, and the flexibility we have adopted in keeping pace with modern technological advancements.

“The institute is a key partner in Lebanon’s economic activity, assuming its responsibilities with distinction, pride, and honor. Having risen from the ashes, it quickly filled the void, climbed to the ranks of leading institutions in Lebanon and the region, and became a trusted reference for ministries, with both the public and private sectors relying on it for studies, research, and internationally accredited laboratories.

“We have worked under difficult and challenging conditions, never ceasing to receive stakeholders, handle inquiries, or hold meetings across various departments. Neither bombings deterred us, nor road closures obstructed our determination, nor did the COVID-19 pandemic prevent us from being present in our offices. We remained

committed to: serving citizens and facilitating their affairs, contributing to economic growth, and preserving the bridge we built to strengthen and modernize industry. This is implemented through three main axes: consultancy and research, laboratory testing and issuance of compliance certificates, and regulatory oversight via sample collection at border crossings to enforce laws and decrees requiring certain products to undergo laboratory testing to ensure compliance with relevant Lebanese standards.

“We have succeeded in enforcing regulations, preventing the entry of non-compliant goods, and ensuring their return to their country of origin to curb unfair competition with national production and legally imported goods. We have spared Lebanon from becoming a dumping ground for rejected and non-compliant products globally. However, it pains us that smuggling at border crossings remains unchecked, as goods enter as if invisibly, by magic. This phenomenon severely damages the economy and fosters a parallel illicit economy alongside the formal one. Addressing this issue requires decisive action to suppress and



halt such activities as an inevitable rescue measure.”

“We are about to inaugurate the Pharmaceutical Laboratory, an initiative we spearheaded. This represents a major achievement in pharmaceutical and healthcare safety. In coordination with the Minister of



Industry, to whom I extend my regards, and the Minister of Public Health, we deemed it essential not to overlook this domain, which Lebanon has lacked for years. The demand for establishing a pharmaceutical laboratory has grown significantly, leading to repeated calls for its creation. This step marks a quantum leap in regulating imported medicines, protecting locally produced pharmaceuticals from unfair competition, and addressing the concerns of doctors, pharmacists, and citizens regarding the vast array of available drugs—their sources, types, and quality. Here, our new laboratory plays a crucial role in collaboration with the Ministry of Public Health, equipped with cutting-edge technology and highly qualified personnel, aiming to restore the essential trust between patients and their medications.”

He concluded, “The wait to rebuild this lost confidence has been long. At the Industrial Research Institute, our mission is to restore trust, and we will fulfill our role to the fullest.”

Afterward, the Prime Minister inaugurated the “Pharmaceutical Analysis Laboratory” and toured its facilities alongside the ministers.

### **Mikati**

In his speech for the occasion, the Prime Minister stated, “In the past few months, every time we

inaugurated a new project, we were asked, ‘Is this really the right time?’ Nonetheless, we are determined to embrace life because giving up is not an option. We will continue to fulfill our responsibilities and work to shield the country from any potential risks.

“I am pleased with this gathering and with the report that shed light on several key aspects, and I hope for further achievements.” Pointing out that “the efforts made by the institute’s director, along with constructive collaboration with the Ministers of Health, Industry, and Agriculture, aim to safeguard the health and well-being of citizens. It is extremely important that the institute’s quality seal remains in place, as it provides the public with the trust they need.”

### **El-Abiad**

The Minister of Health stated, “I am pleased to stand before you today for the inauguration of the Pharmaceutical Laboratory at the Industrial Research Institute. This step reaffirms the government’s commitment to public health and significantly supports the Ministry of Public Health’s strategy to ensure high-quality medication for patients. Here, I would like to highlight three key points:

“First, the establishment of this laboratory marks a crucial milestone in the Ministry of Public Health’s strategy to ensure the quality of



imported medicine. It also plays a vital role in strengthening local pharmaceutical production, providing high-quality medication at an affordable cost, especially by increasing the production of generic drugs. With local pharmaceutical analysis capabilities, we can accelerate production, reduce costs, and improve access to essential medicines. This is not merely a logistical improvement but a decisive step toward self-sufficiency and reducing reliance on external sources. By doing so, we make medications more accessible and affordable for every citizen in Lebanon. I must also commend the local pharmaceutical industry for its invaluable role during the financial and health crises, ensuring the availability of chronic disease medications and demonstrating remarkable expertise and dedication to both the country and its people.

“Second, we cannot overlook the importance of developing strong local capabilities. This laboratory, along with the Central Public Health Laboratory project currently under development, the laboratories of the Lebanese University, and the network of reference laboratories cooperating with the ministry, together form the backbone of our national laboratory infrastructure. Each of these institutions plays a vital role in enhancing Lebanon’s ability to respond to health challenges effectively and independently. They provide the essential infrastructure for precise testing, research, and development. Collectively, these

laboratories represent an integrated network of excellence that will contribute to health security and advance our healthcare sector. I would like to reiterate the significance of the central laboratory project within the Ministry of Public Health, which we hope to inaugurate next year, God willing.”

“Let us reflect on the symbolism of this important occasion. These ministries and this government are working to rebuild and strengthen public infrastructure, even in times of scarcity, conflict, and hardship affecting Lebanon and the region. This relentless effort amidst chaos is a testament to resilience and determination. It demonstrates that as ministries and as a government, we are committed to a long-term vision for the health and well-being of our nation. We do not merely react to crises—we are laying the foundations for a sustainable and adaptable healthcare system. By reinforcing and rebuilding public institutions, we reaffirm our commitment to serving the greater good and ensuring that citizens receive the highest standards of care.”

He concluded, “Today’s inauguration stands as a beacon of hope and a testament to unwavering dedication to progress and resilience. It sends a clear message that we will continue to build and invest in the future of our nation, regardless of the challenges we face. Let us move forward together toward a healthier, stronger, and more self-sufficient Lebanon.”



**Bouchikian**

The Minister of Industry stated, “I commend you, Mr. Prime Minister, for sponsoring this celebration and inaugurating the Pharmaceutical Laboratory at the Industrial Research Institute, an institute that has become a reference and an economic force contributing to growth, progress, and prosperity.

You are overseeing, Mr. Prime Minister, a truly national, economic, industrial, and health-related event, in the presence of esteemed guests and experts in the pharmaceutical industry, including those involved in importing and utilizing medications. Despite the exceptional circumstances we are facing, where we live hour by hour to confront risks and tackle challenges, I take great pride, as Minister of Industry, in what the Industrial Research Institute has accomplished and in the dynamism of its Director General, Dr. Bassam Frenn.

“Since its founding in 1953, the Institute has been a pioneer in the Arab world and the Middle East. Today, it conducts scientific and applied industrial research, laboratory testing, measurement, and

physical and scientific analysis. Its activities are internationally recognized and trusted.

“Over the past period, we worked hard to fill the gap in pharmaceutical testing, ensuring that medications undergo the necessary checks and laboratory analyses to confirm their safety and compliance with standards. This initiative led to the establishment of this laboratory, funded independently, joining the institute’s 15 laboratories internationally accredited by the highest global authorities. Given my own experience in the field of medical and hospital equipment, I consider today’s achievement a major milestone in the Lebanese pharmaceutical and agricultural medication sectors. It aligns with a strategic work plan and a coordinated roadmap between the Ministries of Industry and Public Health, the Industrial Research Institute, the Lebanese Standards Institution (LIBNOR), the syndicates of doctors and pharmacists, the association of pharmaceutical manufacturers, and the union of medicine importers. Soon, the Lebanese Accreditation Council (COLIBAC) will also join this integrated framework.



“Regarding local pharmaceutical production, there are now around ten factories producing various advanced medicines to combat complex diseases, epidemics, and more. These products are designated for the local market, while export opportunities have expanded significantly to Arab, European, and African markets. I strongly encourage business leaders to invest in this

sector, it holds great promise and benefits from a supportive and incentivizing governmental environment.”

He concluded, “Achievements in Lebanon do not cease; they materialize even in the most difficult times. Nothing is impossible for the Lebanese people, whose creative human resources excel even more under pressure.”

## THE INDUSTRIAL RESEARCH INSTITUTE HOSTS AN INDUSTRIAL-ENVIRONMENTAL MEETING

### FRENN: “TO ENHANCE COOPERATION WITHIN THE INSTITUTE’S CAPACITIES AND ADVANCED LABORATORIES”

July 11, 2024

The Director General of the Industrial Research Institute, Dr. Bassam Frenn, hosted an industrial-environmental meeting attended by the Minister of Industry in the caretaker government, MP Georges Bouchikian, the Minister of Environment in the caretaker government, Dr. Nasser Yassin, along with senior officials from relevant ministries and administrations, and a team from the institute.

The discussions focused on ways to strengthen cooperation with the Industrial Research Institute, enhance the memorandum of understanding between the Ministry of Environment and the institute, and reaffirmation by the Ministers of Industry and the Environment of the importance of utilizing the institute’s advanced capabilities through its specialized centers and 14 integrated laboratories covering various production sectors. These

include laboratories for civil engineering, electrical testing, microbiological analysis,



chemical and physico-chemical testing, water analysis, leather and textiles, mechanical engineering, grains, flour, and bread, petroleum derivatives, paints, packaging, solar energy, and calibration services, many of which have been internationally accredited since 2004, in addition to the accreditation that the institute also holds for inspection and sampling activities.

Additionally, the meeting addressed decisions



No. 1/99 and No. 1/2024, dated 01/07/2024, which pertain to establishing environmental mechanisms for the cement industry and licensing procedures for the rehabilitation of cement, limestone, and gypsum quarries, and

the important role that the Industrial Research Institute plays in the implementation process, given its scientific and national expertise. It was also agreed to form a joint technical committee for follow-up.

## THE FIRST LEBANESE FORUM ON WINE SCIENCE AT THE INDUSTRIAL RESEARCH INSTITUTE

### FRENN: “WINE IS A HIGH ADDED PRODUCT THAT REQUIRES SUPPORT AND PROTECTION”

**March 20, 2024**

The National Institute for Vine and Wine, established under Decree No. 5638 dated 19-9-2019, organized, in collaboration with the Industrial Research Institute, a scientific forum titled “The First Lebanese Forum on Wine Science.” The official session was attended by Dr. Bassam Frenn, Director General of the Industrial Research Institute; Engineer Louis Lahoud, Director General of the Ministry of Agriculture; Zafer Shawi, Chairman of the Board of the National Institute for Vine and Wine; along with several senior officials, IRI board members from both the public and private sectors, and

representatives from various groups, including wine producers from different Lebanese regions, universities, scientific research institutions, laboratories, chambers of commerce, industry and agriculture, the Association of Industrialists, employees from public administrations and institutions, as well as university students. The forum featured an official session and three scientific topics:

1. An overview of wine-related activities.
2. Wine production under current climatic conditions.
3. Innovative technologies in winemaking.



National and international speakers in the three scientific sessions presented available information derived from studies they had participated in related to discussed topics, allowing for discussion and the formulation of appropriate recommendations for each topic.

The official session was opened by Shawi, who outlined the institute's vision and strategy, presenting the Board's accomplishments to date and its plans before the end of its term in late 2024. These include conducting a geographic survey in collaboration with the Directorate of Studies and Coordination at the Ministry of Agriculture, compiling a list of national experts in wine production, and continuing sector-related initiatives for the industry's advancement.

Dr. Frenn welcomed the guests and emphasized the significance of Lebanese wine as a product that embodies science, knowledge, and refined taste



while integrating both agricultural and industrial components. He highlighted that wine production holds the highest added value in Lebanon, warranting its protection and continuous support. This commitment was formalized through a cooperation agreement between the Industrial Research Institute and the National Institute for Vine and Wine.

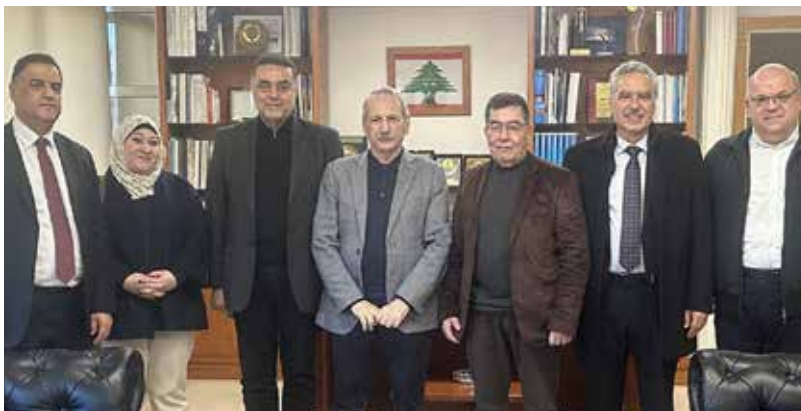
The speakers also discussed the importance of wine as an industry that offers vast opportunities for export and global expansion.



## LEBAJICA AND IRI COOPERATION IN FOOD SAFETY AND ENVIRONMENTAL MANAGEMENT

February 6, 2024

In a groundbreaking move, the Lebanese Industrial Research Institute (IRI) and LEBAJICA joined forces to address Lebanon's pressing challenges in food safety and environmental sustainability. This dynamic collaboration, generously funded by the Japan International Cooperation Agency (JICA), has set its sights on utilizing advanced UV-Vis Spectrophotometer Equipment for applied research and testing.



### Tackling Challenges Head-On:

Lebanon grapples with a perfect storm of food safety issues, environmental concerns, and a financial crisis impacting agricultural production. The LEBAJICA and IRI partnership, powered by JICA's support, aims to fortify food and environmental quality control measures. The initiative is ready to elevate Lebanon's adherence to local and international market standards, mitigating health risks linked to excessive food additives, food fraud, and examining metal concentrations in environmental effluents.

LEBAJICA, in tandem with IRI, envisions supporting the food safety system, propelling industrial development, and championing environmental stewardship. The cutting-edge UV-Vis Spectrophotometer has four pivotal components - a light source, monochromator, sample holder, and detector - facilitating quantitative analyses of molecular and ionic species in solution.

### Key Outputs Unveiled:

#### 1. Applied Research and Testing of Different Food Products:

- In-depth analysis and quantitative measurements of chemical substances across various food products.

- Identification of functional groups, organic compounds, and inorganic metals, driving applied research.

#### 2. Environmental Analysis:

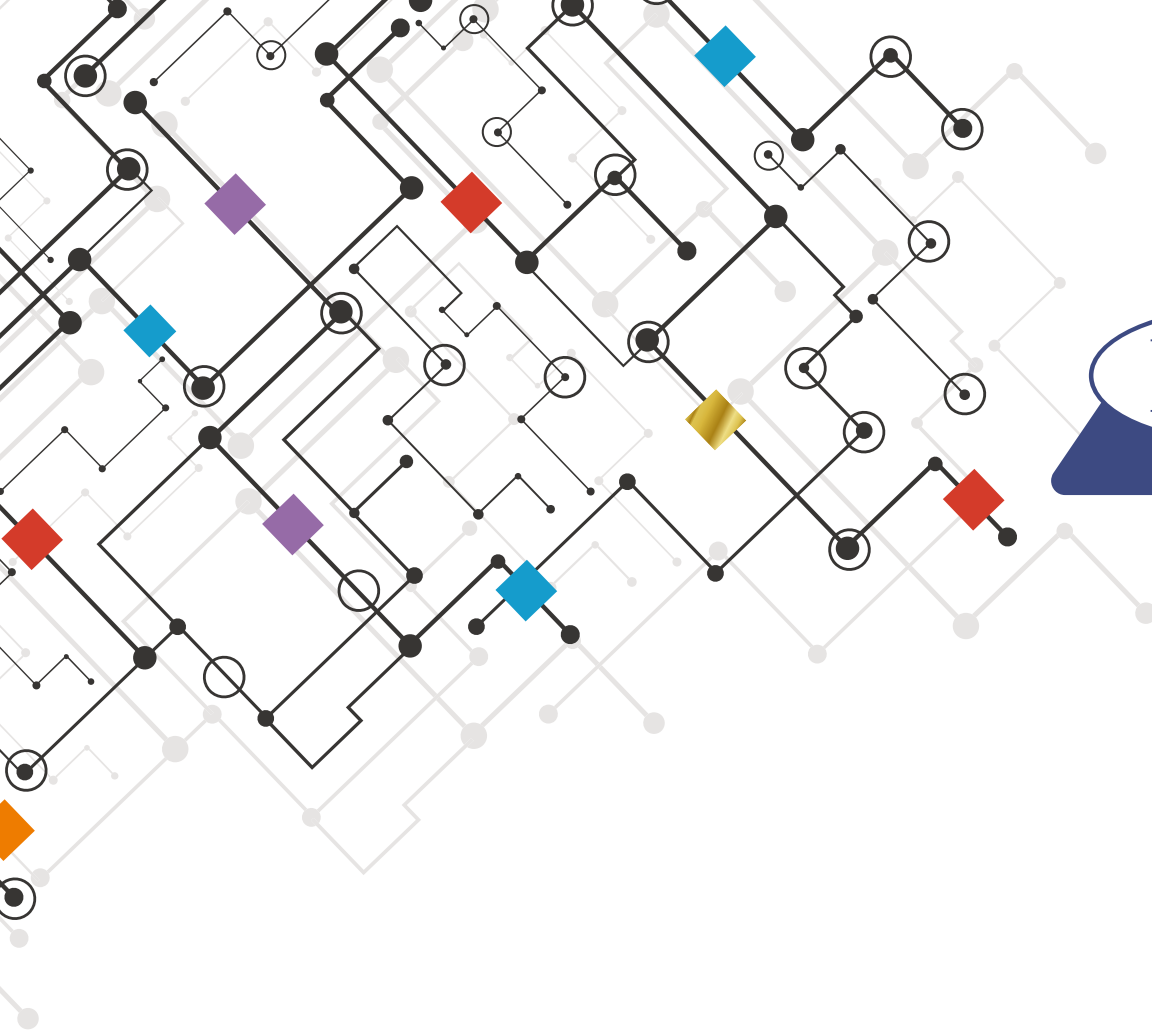
- Robust assessment of environmental impact, with a spotlight on water resources.
- Determination of chemical species concentrations in environmental effluents.

### Empowering Minds:

To ensure a ripple effect, LEBAJICA and IRI arranged a comprehensive training and workshop event. IRI experts underwent intensive training by the equipment supplier, transforming them into adept trainers. These trainers then passed their knowledge through engaging workshops for students at the Lebanese University's Faculty of Health Sciences and industry professionals. The workshops focused on the UV-Vis Spectrophotometer's role in quality control within both the food and environmental domains.

This collaboration signifies a monumental stride forward for Lebanon, promising advancements in food safety, industrial development, and environmental management.





# LABORATORY SERVICES, OBSERVATIONS & ACTIVITIES



*As is well known, the Industrial Research Institute carries out a wide range of activities. Its laboratory services stand out as the institute boasts state-of-the-art laboratories equipped with advanced equipment that have earned it international recognition. It operates 16 specialized laboratories across various fields, where engineers, technicians, and specialists conduct testing using modern methodologies. These professionals continuously undergo training programs in Lebanon and abroad to maintain their expertise. The institute is committed to elevating the quality of its services across all departments, ensuring that both its staff and administration progress in harmony. Under its leadership, strategic expansion plans are devised with foresight and awareness of the evolving needs of the Lebanese economy. Through its ongoing partnerships with key economic sectors, the institute plays a vital role in fostering growth and prosperity.*

The tests, examinations, and verifications were distributed as follows:

- 262,601 conformity testing and analysis procedures were conducted by the institute's laboratories in 2024, reflecting an increase of 13,556 procedures compared to 2023—approximately a 5.16% rise. Additionally, external inspections totaled 228, along with 654,426 domestically manufactured gas cylinders.
- Standardization and calibration tests amounted to 32,244 assessments conducted on 3,242 samples.

- The institute reviewed 34,250 files to verify the compliance of imported goods at Lebanese border entry points with mandatory specifications.

The institute reinforces its role as a scientific institution capable of meeting the needs of both the public administration and the private sector, ensuring the completion of scientific and technical tests across various fields with precision and expertise. Additionally, it remains committed to conducting economic research and studies in all relevant sectors.

## Tests and Analyses

Despite challenging conditions, the institute successfully increased the volume of tests and analyses conducted throughout 2024. This achievement further underscores the dedication of the Director General, whose guidance has helped foster a highly committed and diligent team. As a result, the institute's laboratory activities saw a 5.44% increase compared to 2023. The electrical laboratories experienced the highest growth, with a 10.26% increase, representing 37% of total tests conducted. Although activity in chemical laboratories rose by 1.72%, they

accounted for 32% of total analyses. Civil engineering and soil laboratories followed with 12%, while microbiological tests represented 10%. Petroleum and paint labs accounted for 3%, while the central laboratory for grain, flour, and bread research made up 4%. Textile and leather labs contributed 1% of the total tests.

A total of 42,329 samples of various types were analyzed.

Additionally, the welding laboratory conducted 1,803 tests.

Laboratory activity appeared according to the statistical tables as follows:

### Chemical and Physical Chemistry laboratories

The total number of tests in Chemical and Physical Chemistry laboratories was 83,000 tests, with an increase of 1,400 or 1.68%, representing around 32% of the total laboratory activities.

### Microbiology laboratory

The number of tests conducted in the Microbiology laboratory was 26,000, representing around 10% of total tests.

### Textile, leather and rubber laboratories

Tests and analyses in these laboratories was 2,980 tests, representing around 1%. This represents a decrease of around 3% in view of the huge drop in the importation of textiles and fabrics.

### Petroleum derivatives laboratory

The activity at the Paint and petroleum laboratory decreased by 1,480 tests, or 15%, and amounted to 8,500 tests representing around 3%

of the total number of tests

## Civil engineering laboratory

The activity at the Civil Engineering and Soil laboratory increased by 1% to reach 32,330 tests compared to 32,019 tests the previous year, and represented 12% of the total laboratory activity.

## Electrical laboratory

The activity at the Electrical Laboratory increased by 8,952 tests to reach 96,328 tests, representing around 37% of the total tests.

## Central Laboratory for Grain, Flour and Bread Research

Due to the close collaboration between the

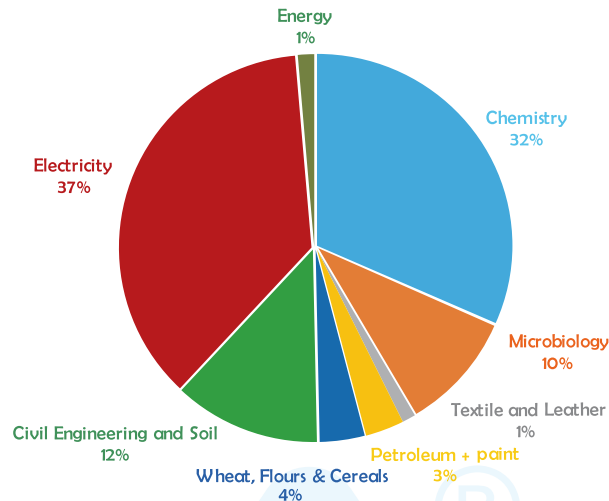
Ministry of Economy and Trade and the Industrial Research Institute, the laboratory conducts testing on imported wheat on behalf of the ministry. Additionally, it performs various analyses on most imported and locally manufactured products. The number of tests conducted at the Central Laboratory for Grain, Flour, and Bread Research reached 9,896, reflecting an increase of 1,996 tests, which accounted for approximately 4% of the total tests.

## Lebanese Welding Center

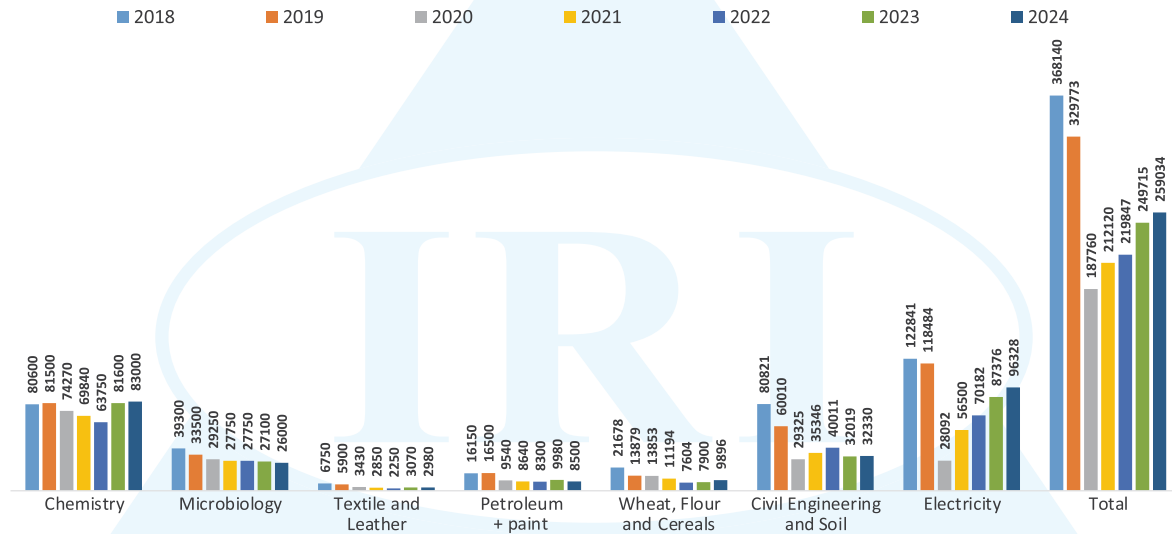
Inspections on welding reached 1,803 inspections

## NUMBER OF TESTS BY LABORATORY

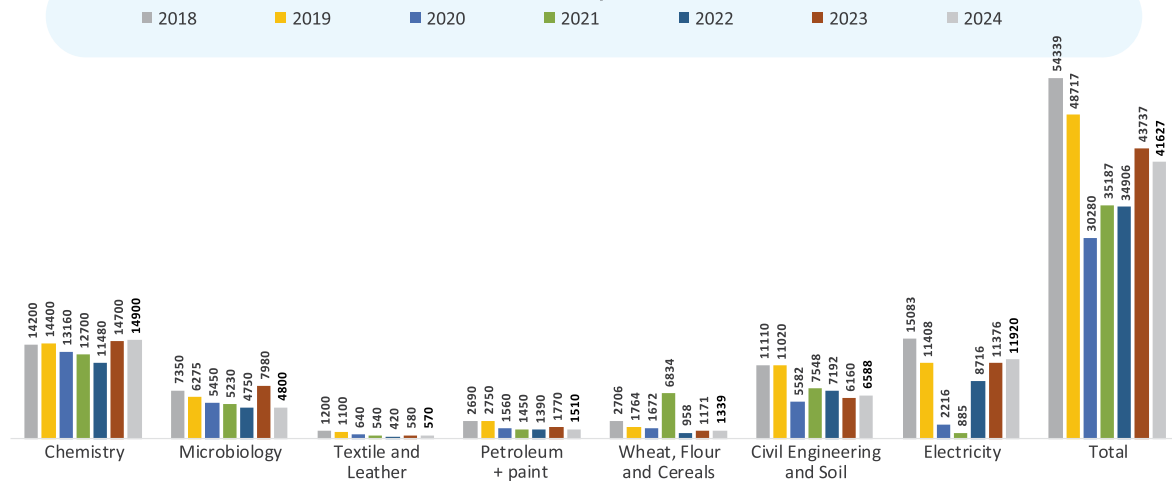
Year	2024	2023	2022	2021	2020	2019
Chemical and physico-chemical	83,000	81,600	63,750	69,840	74,270	81,500
Microbiological analyses	26,000	27,100	27,750	27,750	29,250	33,500
Textile, leather and rubber	2,980	3,070	2,250	2,850	3,430	5,900
Paint, Petroleum and derivatives	8,500	9,980	8,300	8,640	9,540	16,500
Central Laboratory for grains, flour and bread research	9,896	7,900	7,604	11,194	13,853	13,879
Civil Engineering	32,330	32,019	40,011	35,345	29,325	60,010
Electrical	96,328	87,376	70,182	56,500	28,092	118,484
Energy	3,567	-	-	-	-	-
Total	262,601	249,045	219,847	212,120	189,653	332,076
Welding	1,803	2,364	670	1,315	1,893	2,303



## Tests



## Samples



## Metrology and Calibration Laboratories

The activity of various measurement laboratories (metrology) declined in 2024 by 11% compared to 2023, with a total of 32,244 tests conducted, down from 36,582 in the previous year.

These laboratories received 3,242 measurement devices.

The tests were distributed across the fields of temperature, pressure, force, mass, dimensions, and electricity.

The development of these laboratories' activity is as follows:

### Temperature

The temperature laboratory received 691 devices, on which 7,650 tests were conducted, marking a decrease of 1,620 tests (17.5%).

### Pressure

The number of pressure testing devices delivered was 61, with a total of 488 tests performed—an average of 8 tests per device, which remains the standard practice.

### Force

The Force measurement laboratory received 5 devices for testing their force, with 48 tests conducted, averaging 9.6 tests per device.

### Mass

A total of 1,962 mass units were tested, and underwent 19,822 tests, an average of approximately 10 tests per unit.

### Dimensions

The number of dimension units increased to 334, and the number of tests reached 2,664, averaging 8 tests per unit.

### Electricity

Tests on Electrical equipment declined in 2024 to 183 devices, with 1,464 tests conducted—an average of 8 tests per device.

### Miscellaneous Tests

Miscellaneous tests amounted to 48 tests across 6 devices.

## MEASUREMENT AND CALIBRATION

TOTAL ACTIVITY	2024		2023		2022		2021		2020		2019	
	Units	Tests	Units	Tests	Units	Tests	Units	Tests	Units	Tests	Units	Tests
Temperature	691	7650	927	9270	617	6150	437	4356	440	4400	533	5330
Pressure	61	488	47	376	64	512	25	200	29	232	18	144
Force	5	48	5	48	5	40	2	16	5	60	9	108
Mass	1962	19822	2155	21824	1599	15420	1269	11883	996	9288	1228	11532
Dimensions	334	2664	370	2960	273	2184	186	1,488	143	1144	187	1,496
Electricity	183	1464	257	2056	79	632	39	380	51	408	38	304
Other tests	6	48	6	48	3	40	17	136	24	192	38	304
<b>Total</b>	<b>3,242</b>	<b>32,244</b>	<b>3,768</b>	<b>36,582</b>	<b>2,642</b>	<b>25,048</b>	<b>1,975</b>	<b>18,459</b>	<b>1,688</b>	<b>15,724</b>	<b>2,051</b>	<b>19,218</b>



## EXTERNAL INSPECTION

ACTIVITY	YEAR	2024	2023	2022	2021	2020	2019
LPG Storage Tanks		82	126	247	120	126	79
Inspection/Verification		25	11	19	38	45	39
Fuel Tanks Inspection and Calibration		102	188	102	121	137	161
Boiler Inspection		6	0	0	0	0	0
Fuel Station		13	0	0	0	0	0
<b>Accessories (Valves, regulators, ie...)</b>		<b>228</b>	<b>291</b>	<b>368</b>	<b>279</b>	<b>308</b>	<b>279</b>
Inspection and monitoring of locally-produced gas cylinders		654,426	580,262	555,409	85,267	424,168	672,262
Inspection and monitoring of imported gas cylinders		0	0	0	0	0	0
Inspection and monitoring of exported gas cylinders		83,999	110,928	115,821	0	0	0

## VERIFICATION OF CONFORMITY ACTIVITIES INCREASE TO 34,250 FILES

Conformity assessment activities continued to rise in 2024 compared to 2023, indicating the institute's efficiency, speed, and competence across various border checkpoints. This rise was reflected in the number of customs files subject to conformity assessment by the institute, reaching 34,250 files, up from 32,440 files in 2023 - an increase of 1,810 files, equivalent to 5.5%.

The evaluation activities were distributed according to the types of imported products as follows:

follows:

- The number of conformity-assessed customs files in the country of origin under the institute's mechanism reached 262 files.
- The number of files subjected to conformity assessment totaled 24,155, while files exempt from mandatory standards after review amounted to 10,095.
- Non-compliant files numbered 845, of which 781 were corrected, while 64 were rejected.

Distribution of Files by Type of Imported Goods based on their significance as follows:

### Chemical Materials

A total of 5,866 files were recorded in 2024, compared to 4,670 in 2023, an increase of 1,196 files (20%). These files account for approximately 17% of the total.

### Photovoltaic Systems

The number of photovoltaic system files reached 1,202, representing about 3.5% of the total.

### Electrical Equipment

This category accounted for 23% of the total customs files, with 7,888 files, marking a decline of 135 files (1.5%).

### Medical Equipment

Representing about 14.6% of the total, the number of medical equipment files rose to 5,005 in 2024 from 4,708 in 2023, an increase of 297 files (6.3%).

### Construction Material Files

These files dropped from 2,050 in 2023 to 1,719 in 2024—a decrease of 331 files, or around 16%. They represent 5% of the total.

### Textile Files

The number of customs files for textile imports reached 2,204 in 2024, compared to 2,044 in 2023- an increase of 160 files (7%). This category accounts for 6.4% of total customs files.

### Paint Files

A total of 1,843 files were recorded, making up 5.3% of the total. This marks a decrease of 44 files (2.3%) compared to the previous year's 1,887 files.

### Common Files

The number of common files increased from 3,608 in 2023 to 4,449 in 2024, an increase of 841 files (19%), representing 13% of total customs files.

### Other file categories include:

Vehicles: 1,194 files (3.5%), Mechanical Equipment: 554 files (1.6%), Approved Files from Country of Origin: 262 files (0.7%), Energy: 31 files, Elevators: 265 files, Pressure Equipment: 132 files.

## CUSTOMS FILES BY SECTOR

Types of files	Pre-shipment assessment	Chemistry	Photovoltaic systems	Electricity	Furniture	Medical Devices	Elevators	Mechanic	Power	Paint	Pressure equipment	Civil Engineering	Textiles	Transport vehicles	Welding	Shared Files	Grand Total
Totals	262	5,866	1,202	7,888	1,598	5,005	265	554	31	1,843	132	1,719	2,204	1,194	38	4,449	34,250
Subject files	262	3,834	1,078	4,867	1,129	4,342	92	333	28	457	68	1,648	1,637	968	33	3,379	24,155
Non-subject files	0	2,032	124	3,021	469	663	173	221	3	1,386	64	71	567	226	5	1,070	10,095
Percent non-subject files %	0.00	34.64	10.32	38.30	29.35	13.25	65.28	39.89	9.68	75.20	48.48	4.13	25.73	18.93	13.16	24.05	29.47
Non-conforming files	0	93	10	510	17	94	0	3	9	10	3	64	10	0	22	0	845
Precent non-conforming files %	0.00	2.43	0.93	10.48	1.51	2.16	0.00	0.90	32.14	2.19	4.41	3.88	0.61	0.00	66.67	0.00	2.47
Corrected files	0	71	9	477	17	94	0	3	9	4	3	64	8	0	22	0	781
Rejected files	0	22	1	33	0	0	0	0	0	6	0	0	2	0	0	0	64

## FILES BY GATE

*Beirut Port accounted for 64.58% and the Airport 25.23%*

### Beirut Port

22,122 files processed in 2024, compared to 20,683 in 2023, an increase of 1,439 files (6.5%). These files represent 64.58% of the total

port increased to 2,233 in 2024 from 2,002 in 2023 - an increase of 231 files (11.5%), accounting for 6.5% of the total.

### Masnaa Border Crossing

A total of 1,173 files were evaluated in 2024, up from 698 in 2023, an increase of 475 files (68%), representing 3.4% of the total.

### Beirut Airport

The number of files assessed for conformity and arriving via Beirut Airport totaled 8,642 in 2024, down from 9,051 in 2023, a decrease of 409 files (4.5%), representing around 25.23% of the total.

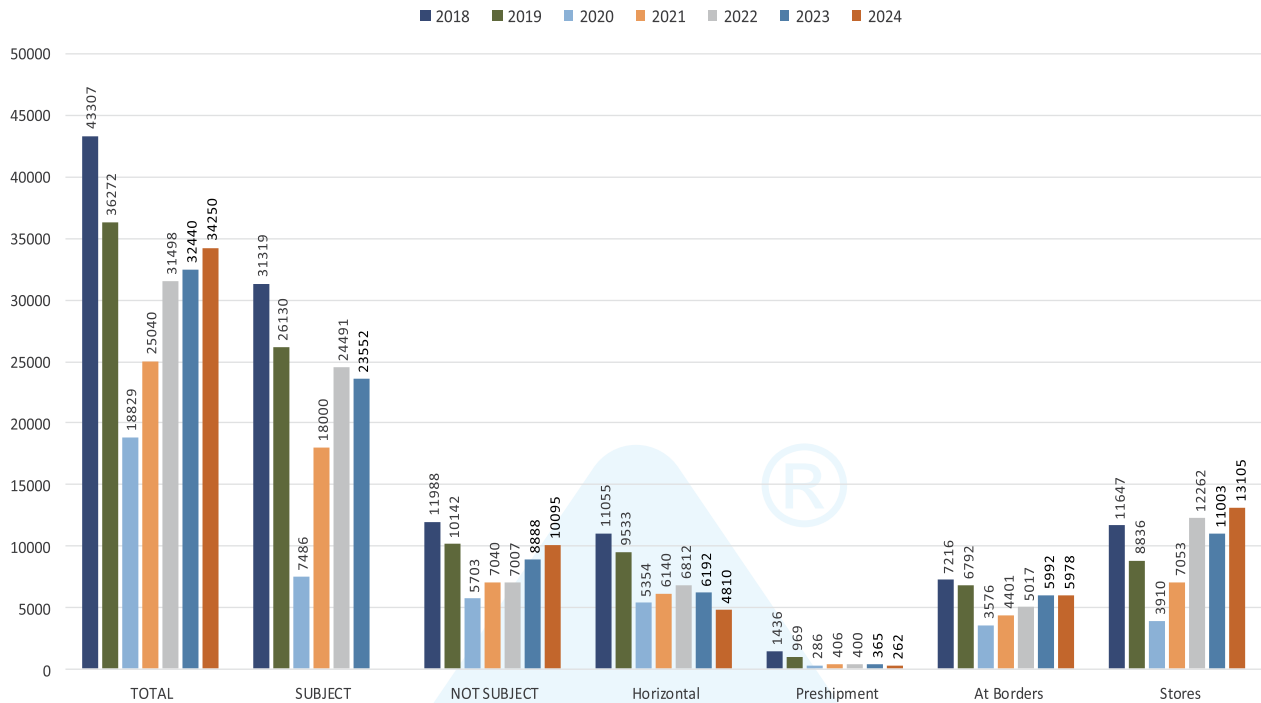
As for the remaining gateways, the processed customs files passing through them amounted to 72 files via Abboudieh and 6 files at the Port of Sidon.

### Port of Tripoli

Customs files assessed for conformity in Tripoli

## CUSTOMS FILES BY BORDERS ENTRY

Types of files	Pre-shipment verification	Chemical	PV systems	Electrical	Furniture	Medical devices	Elevators	Mechanical	Energy	Paint	Pressure Equipment	Civil engineering	Textile	Transport vehicles	Welding	Shared files	Totals
Masnaa	0	119	260	269	12	5	0	67	0	182	1	33	105	40	0	80	1,173
Arida	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2
Beirut	262	3,930	739	4,937	1,242	1,131	193	444	27	1,383	106	1,554	1,810	1,018	36	3,310	22,122
Saida	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
Tripoli	0	196	111	636	213	16	1	6	4	124	9	110	186	98	1	522	2,233
Airport	0	1,608	92	2,046	128	3,853	71	24	0	140	16	17	76	36	1	534	8,642
Aboudiye	0	13	0	0	2	0	0	13	0	14	0	5	21	2	0	2	72
<b>Grand Total</b>	<b>262</b>	<b>5,866</b>	<b>1,202</b>	<b>7,888</b>	<b>1,598</b>	<b>5,005</b>	<b>265</b>	<b>554</b>	<b>31</b>	<b>1,843</b>	<b>132</b>	<b>1,719</b>	<b>2,204</b>	<b>1,194</b>	<b>38</b>	<b>4,449</b>	<b>34,250</b>
<b>Average / Day</b>	<b>1.07</b>	<b>24.04</b>	<b>4.93</b>	<b>32.33</b>	<b>6.55</b>	<b>20.51</b>	<b>1.09</b>	<b>2.27</b>	<b>0.13</b>	<b>7.55</b>	<b>0.54</b>	<b>7.05</b>	<b>9.03</b>	<b>4.89</b>	<b>0.16</b>	<b>18.23</b>	<b>140.37</b>



## AUTHENTICATION CERTIFICATES

The Industrial Research Institute continues to enhance and support Lebanon's industrial sector. By the end of 2024, it had granted: 11 industrial institutions the ISO 9001 quality management certification, 2 institutions the ISO 14001 environmental management system certification, 2 institutions the ISO 13485 medical device quality system certification, one HACCP certification, one ISO 22000 certification, and one ISO 27001 certification.

### Product Certification

A total of 34 products received quality certifications from the Industrial Research

Institute, distributed across 11 manufacturing companies.

### Lebanese Welding Center Certifications

In accordance to Law No. 423/2002, which "designates the Industrial Research Institute as the accreditation body authorized to issue conformity certificates in all forms of welding," the institute granted 319 competency certificates for welding through the Lebanese Welding Center, 15 trainees completed welding training courses, and 1 certification in Non-Destructive Testing (NDT) was issued to an inspector who completed the relevant course.

## NEW EQUIPMENTS 2024

### Electrical Laboratory

#### Lithium Battery Tester:

This device is designed for testing lithium and similar batteries used in off-grid applications, offering precise measurements of their voltage, capacity, and overall performance. It helps ensure the reliability and longevity of batteries by providing detailed insights into their condition under various operating conditions.



#### DC Circuit Breaker Tester:

This device is designed to test DC circuit breakers, providing accurate measurements of their trip characteristics and performance under load. It helps ensure the reliability and safety of circuit breakers in DC electrical systems by simulating real-world conditions.



#### Micro-ohmmeter:

This micro-ohmmeter is designed to calculate the electrical resistance of AC and DC cables by measuring the voltage drop across its ends, ensuring optimal conductivity and identifying potential issues in the cables. It provides accurate readings for low-resistance measurements, helping to assess the quality and integrity of cable connections.



## Metrology laboratory

### Gauge Blocks

The gauge blocks set (0.5 to 100 mm), Grade 0, from Mitutoyo is used to calibrate calipers, micrometers, height gauges and other gauge blocks.



### Multifunction Calibrator

The multifunction calibrator 4000, from Transmille is an instrument used to generate, simulate and measure a wide range of calibration signals for the calibration and testing of various measurement and control instruments. This instrument is capable of producing multiple types of signals, such as voltage, current, resistance, frequency and temperature



### Mass Comparator

The mass comparator XPR6U from METTLER TOLLEDO is a highly precise balance used to calibrate masses with a nominal value of up to 5g





## Soil, Civil and Mechanical Engineering Laboratories

In early December, the Soil, Civil and Mechanical Engineering Laboratories received a set of new equipment designed to enhance the quality assessment of cement-based construction materials. The air entrainment meter, which complies with EN 413-2, is used to measure the volume of entrained air in fresh concrete mixtures—a critical factor for ensuring freeze-thaw durability and workability. Complementing this, the newly arrived mold is specifically designed for water retention tests on mortar; this test evaluates the mortar's ability to hold water during curing, which is vital for proper adhesion and long-term performance. Additionally, the plunger penetration apparatus, used in conjunction with a calibrated 2 kg cast iron weight, enables us to assess the consistency and workability of fresh mortars by measuring the depth of penetration under standardized conditions. Collectively, these tools allow for a comprehensive evaluation of both concrete and mortar properties, ensuring that our construction materials meet the required standards for durability and performance.



### The Plunger Penetration Apparatus

The Plunger Penetration Apparatus designed to measure the consistency of fresh mortar. It consists of a steel base with a recess to house the test cup and a vertical column holding the penetration plunger assembly, the apparatus measures the depth of penetration into the mixture under a specified load. This test is essential for quality control, ensuring that the mixture will work as expected.

### The Air Entrainment meter 0.75 liter :

The Air Entrainment meter 0.75 liter as specified by EN 413-2, is a compact apparatus designed to measure the percentage of Air Content in Fresh Mortar. It includes a hand-operated pump to apply test pressure and valves with a screw to reset the pressure to 0%. The meter includes a stable manometer for accurate readings and is equipped with calibration tubes. This device ensures precise determination of Air Content, which is essential for the durability and workability of Mortar and Concrete.



### Rigid Plastic Mould, Cast Iron 2kg and Filter Paper :

Rigid Plastic Mould, Cast Iron 2kg and Filter Paper is a tools used for determining the water retention of masonry cement. After having complete consistency, remix the mortar remaining and then carry out the test. The water retention is the mass of water retained in the mortar after the suction treatment and expressed as a percentage by mass of its original water content.



## The Lebanese Welding Center

### Teledyne ICM X-Ray Control Units:

Being designed on the basis of industrial PC boards (tropicalized SMD technology) equipped with the 80286 INTEL processor, the SITEX SCU286 standard control unit to be connected to X-Ray generators designated for welding inspection offers a degree of reliability rarely attained with industrial equipment manufactured in small batches.

Its transistor power circuit enables the operator to have virtually no knowledge of the characteristics of the network or the generating set to which it is connected. Like all the generators in the range, the SCU286 is guaranteed IP65 weatherproof. It achieves all its nominal performances between -25° and +55°C ambient temperature.

To guarantee the accuracy of the radiological parameters the SCU286 has a system for direct measurement of the high voltage delivered by the X-ray generator.

Based on this data the control system maintains the stability of milliamperes and kilovolts to within  $\pm 0.5\%$  in any selection range.

Because they are virtually exempt from fluctuations in the power supply, SITEX units offer a totally constant quality of exposures.

The brand new control units can be connected to the actual available machines in the Lebanese welding center D2258 (directional beam), D2506 (directional beam) and C3005 (panoramic beam) to perform the welding inspection on-site and in-house.



## Physical Chemistry Laboratory

### Agilent Gas Chromatography (GC) 8890 with Waters Xevo TQ Mass Spectrometer (MS)

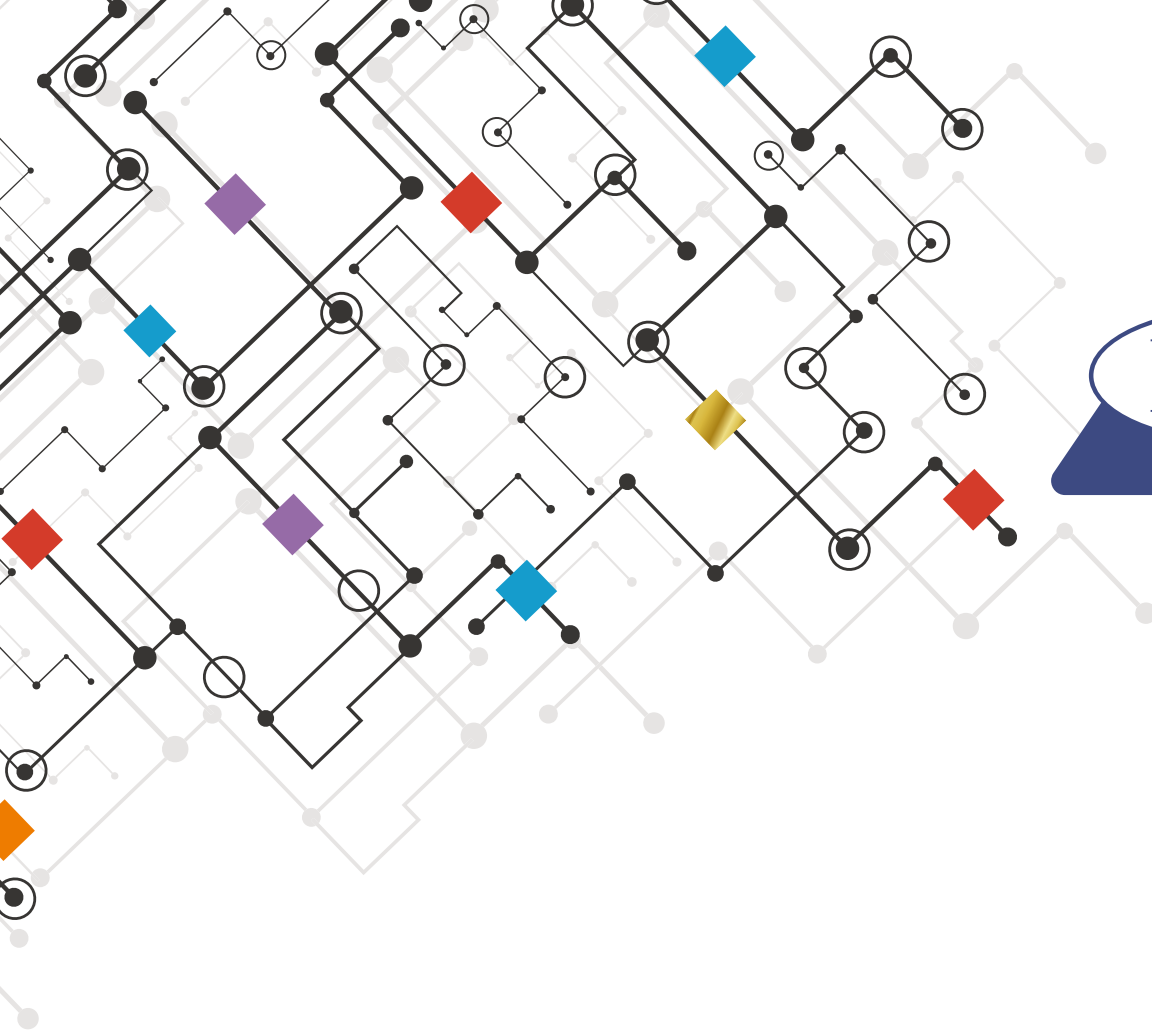
The Agilent 8890 GC is interfaced with a Xevo TQ GC Mass Spectrometer to provide comprehensive analytical capabilities for identifying and quantifying compounds in complex mixtures. This combination is typically used in laboratories focused on complex chemical analysis where both separation and precise detection are critical, such as in environmental, food, pharmaceutical, or clinical testing.



### Waters ACQUITY UPLC (Ultra Performance Liquid Chromatography) system with a tandem quadrupole mass spectrometer Xevo TQ-S micro

This is a powerful setup often used for high-sensitivity, high-resolution analysis in various applications, including environmental analysis, clinical diagnostics, food testing, and pharmaceutical research. It is beneficial for achieving precise, high-resolution separations, often when analyzing complex mixtures or trace-level compounds.





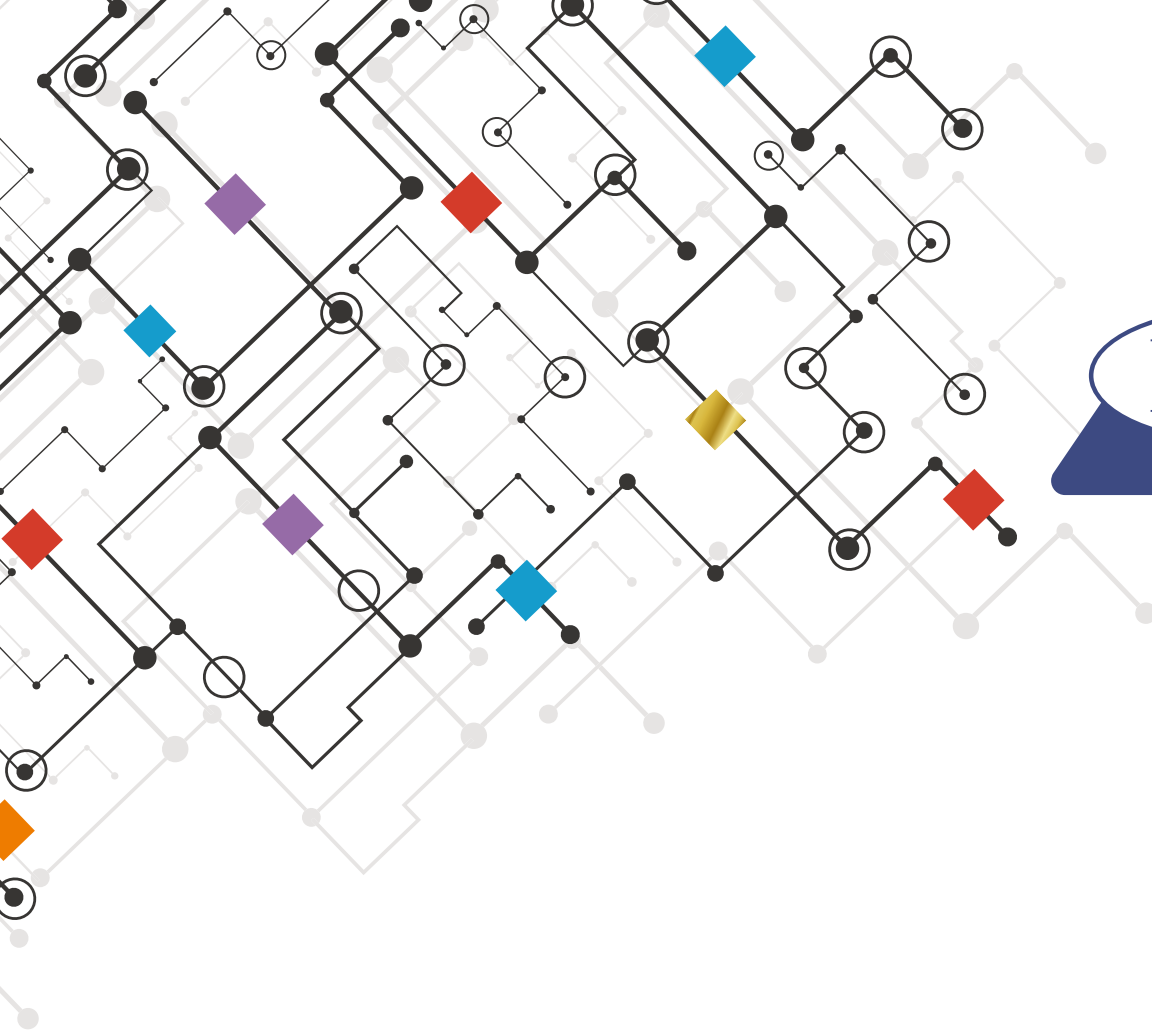
# IRI'S INVESTMENTS

## EXPANDING THE INSTITUTE'S INVESTMENTS IN 2024

*At a time when various Lebanese institutions adopted austerity measures and limited spending due to the country's difficult circumstances, the institute overcame this phase thanks to the success of its policies. It did not hesitate to expand investments throughout 2024.*

The key initiatives in this regard included:

- Completing the modernization of the institute's transportation fleet at an estimated cost of \$213,000.
- Purchasing equipment and supplies for the metrology laboratory at an estimated cost of \$200,000.
- Acquiring equipment and supplies for chemical and physical chemistry laboratories at an estimated cost of \$623,000.
- Procuring equipment and supplies for the inspection and monitoring unit at an estimated cost of \$45,000.
- Purchasing equipment and supplies for the Lebanese Welding Center at an estimated cost of \$32,000.
- Acquiring equipment and supplies for the electricity laboratory at an estimated cost of \$15,000.
- Purchasing equipment and supplies for soil and civil engineering laboratories at an estimated cost of \$4,000.
- Completing the outfitting of the institute's new building at an estimated cost of \$200,000.



# INTERNATIONAL ACCREDITATION

## IRI IN FIGURES 1000 DOCUMENTS, 30 INDICATORS, 42 AUDITORS AND 464 MAN-DAYS OF AUDIT.

## IRI CONDUCTED SINCE INITIAL ACCREDITATION IN 2004 MORE THAN 2600 PT TESTS FOR 1300 PARAMETERS WITH A SUCCESSFUL RATIO OF 97%

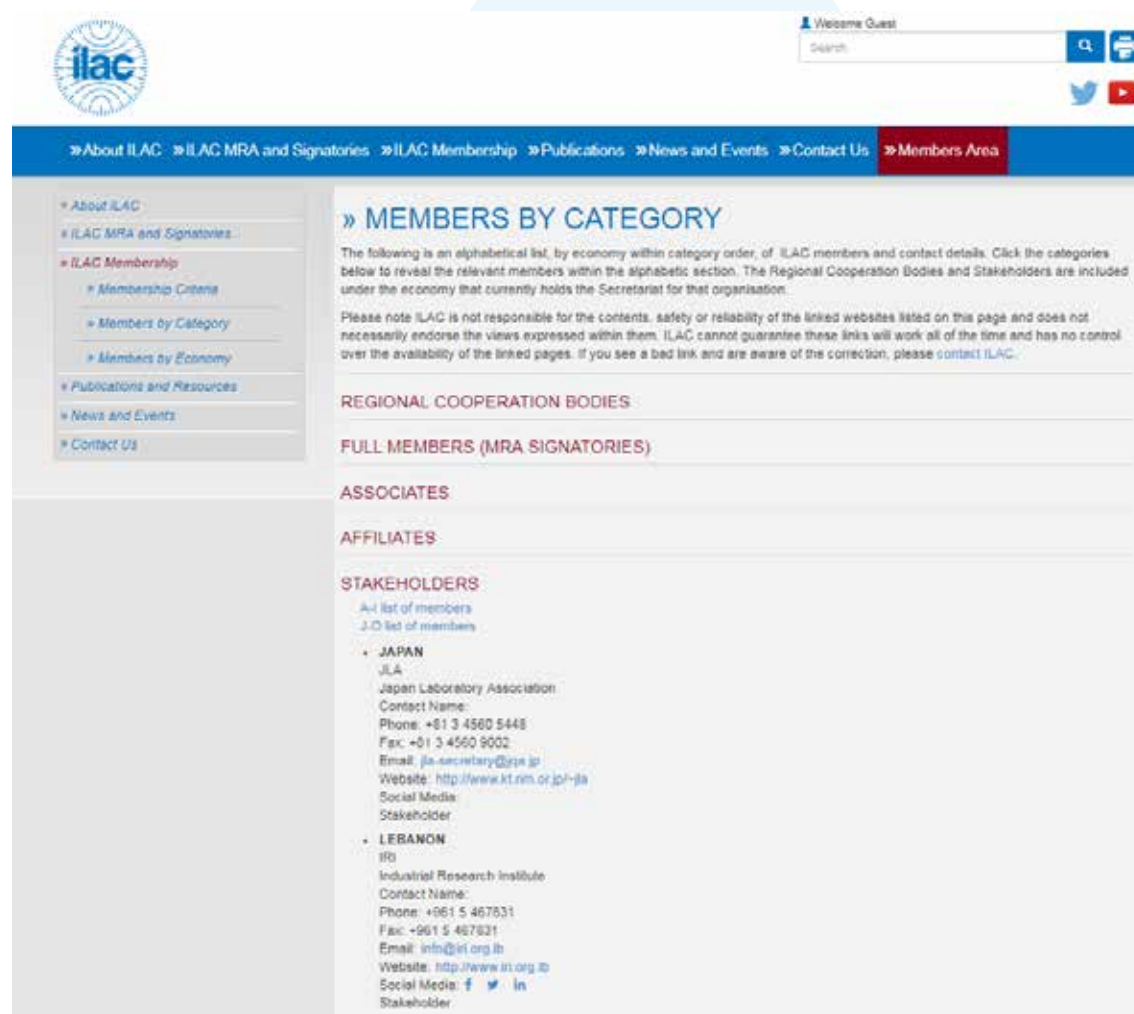
### Quality management overview

The quality management section personnel, assisted by 42 trained auditors, keep and maintain a sound quality management system in accordance with ISO 17025 (testing and calibration) & ISO 17020 (inspection) requirements.

With 1000 controlled documents, 30 Key

Performance Indicators continuously monitored and 464 man-days of audits and assessments performed, the competence of IRI was recognized from the most rigorous accreditation bodies in the world (successively DAKKS and ANAB).

All of the accreditation organizations mentioned



The screenshot shows the ILAC website interface. At the top, there is a navigation bar with links: About ILAC, ILAC MRA and Signatories, ILAC Membership, Publications, News and Events, Contact Us, and Members Area. The main content area is titled "MEMBERS BY CATEGORY" and includes a list of categories: About ILAC, ILAC MRA and Signatories, ILAC Membership, Membership Criteria, Members by Category, Members by Economy, Publications and Resources, News and Events, and Contact Us. The "MEMBERS BY CATEGORY" section also includes a description of the list and a note about ILAC's responsibility for the content. Below this, there are sections for REGIONAL COOPERATION BODIES, FULL MEMBERS (MRA SIGNATORIES), ASSOCIATES, AFFILIATES, and STAKEHOLDERS. The STAKEHOLDERS section lists JAPAN (JLA) and LEBANON (IRI) with their respective contact information.



above are full members in the international organizations IAF and ILAC and signatories of mutual recognition. This make the institute's reports and results trustable and recognized all over the world.

Also, the Industrial Research Institute is a stakeholder member in the international organization ILAC since 2014.

Moreover, IRI regularly participates in international proficiency testing rounds to validate its results. Until date, 2605 tests were done for 1300 parameters with a successful ratio of 97%.

This robust quality management system enabled the Industrial Research Institute to become accredited according to ISO 17025 (since 2004) & ISO 17020 (since 2017) requirements. This helped the Institute to be a key player in the

National Quality Infrastructure and earn the confidence of the most prestigious national and international organizations thus enhancing its network of partnership. Furthermore, the Institute is working towards achieving accreditation according to ISO 17065 (product certification) requirements.

Details of the scopes of accreditations are available on the website: <http://iri.org.lb> in the accreditation section and on the ANAB accreditation body website: <http://anab.ansi.org>

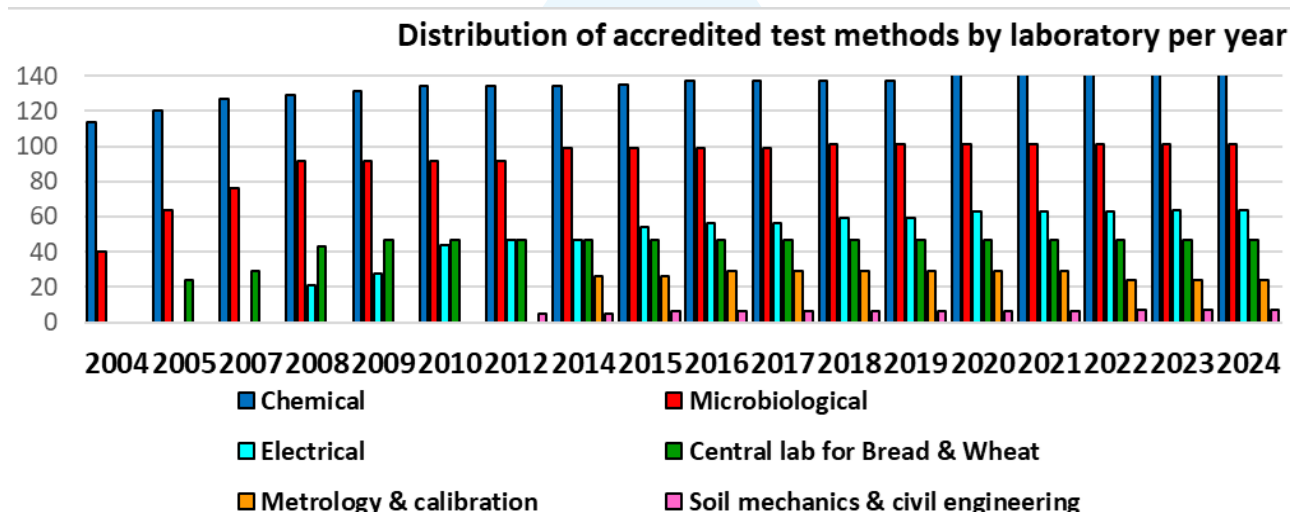
The scope of accreditation according to ISO 17020 requirements covers the inspection of imported goods subject to National decrees, inspection of goods for export as well as inspections according to customers' specific requirements. It covers the following:

Items, Materials OR Products Inspected	Type and Range of Inspection	Methods and Procedures
Electrical Appliances Food Ceramic Tile Sanitary Wares Oil Cosmetic Glass Diapers Notebook Medical Items Solar Water Heaters Fire Extinguishers Gas Cylinders New Boilers Tires Photovoltaic	Qualitative and /or Quantitative  Inspection of New Products	Internal Procedures: PR/CFM/03 IT/CFM/04 IMP/CFM-e/01 to 04 IMP/CFM-h/01 to 39 IMP/CFM-s/02 & 03 IMP/CFM-n/01 to 03 IMP/CFM-r/01 to 07& 09 IMP/CFM-v/01 IMP/CFM-d/01 to 03 Customer-Provided Inspection Requirements

## INTERNATIONAL ACCREDITATION

The scope of accreditation according to ISO 17025 requirements covers over 385 test methods in different fields as detailed below:

- **Chemical, physic-chemical and microbiological testing** of food and animal feeding stuff, vegetable oils, water for human consumption & waste water, cosmetics, wet wipes & baby diapers,
- **Electrical testing** of household appliances, electrical products, luminaires, lamps, lead acid batteries, circuit breakers & energy meters,
- **Physico-chemical and rheological testing** of grain, flour, cereals, pulses, feed, milled products & by products in bulk and sacs,
- **Mechanical calibration** of conventional masses (class E2 & lower), balances (on-site & in permanent laboratories) and temperature.
- **Physico-mechanical testing** of cement and ceramic tiles.





## CERTIFICATE OF ACCREDITATION

**The ANSI National Accreditation Board**

Hereby attests that

**Industrial Research Institute  
Lebanese University Campus, IRI Building,  
Hadath (Baabda)  
Beirut, Lebanon 11-2806**

Fulfills the requirements of

**ISO/IEC 17020:2012**

In the field of

**INSPECTION**

This certificate is valid only when accompanied by a current scope of accreditation document.  
The current scope of accreditation can be verified at [www.anab.org](http://www.anab.org).



Jason Stine, Vice President

Expiry Date: 29 August 2025

Certificate Number: AI-2499



An inspection body's fulfilment of the requirements of ISO/IEC 17020:2012 means the inspection body meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid inspection results (refer to joint ISO-ILAC-IAF Communiqué dated Sept 2013).



## CERTIFICATE OF ACCREDITATION

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**Industrial Research Institute  
Lebanese University Campus, IRI Building,  
Hadath (Baabda) Beirut, Lebanon 11-2806**

Fulfills the requirements of

**ISO/IEC 17025:2017**

In the fields of

**TESTING and CALIBRATION**

This certificate is valid only when accompanied by a current scope of accreditation document.  
The current scope of accreditation can be verified at [www.anab.org](http://www.anab.org).



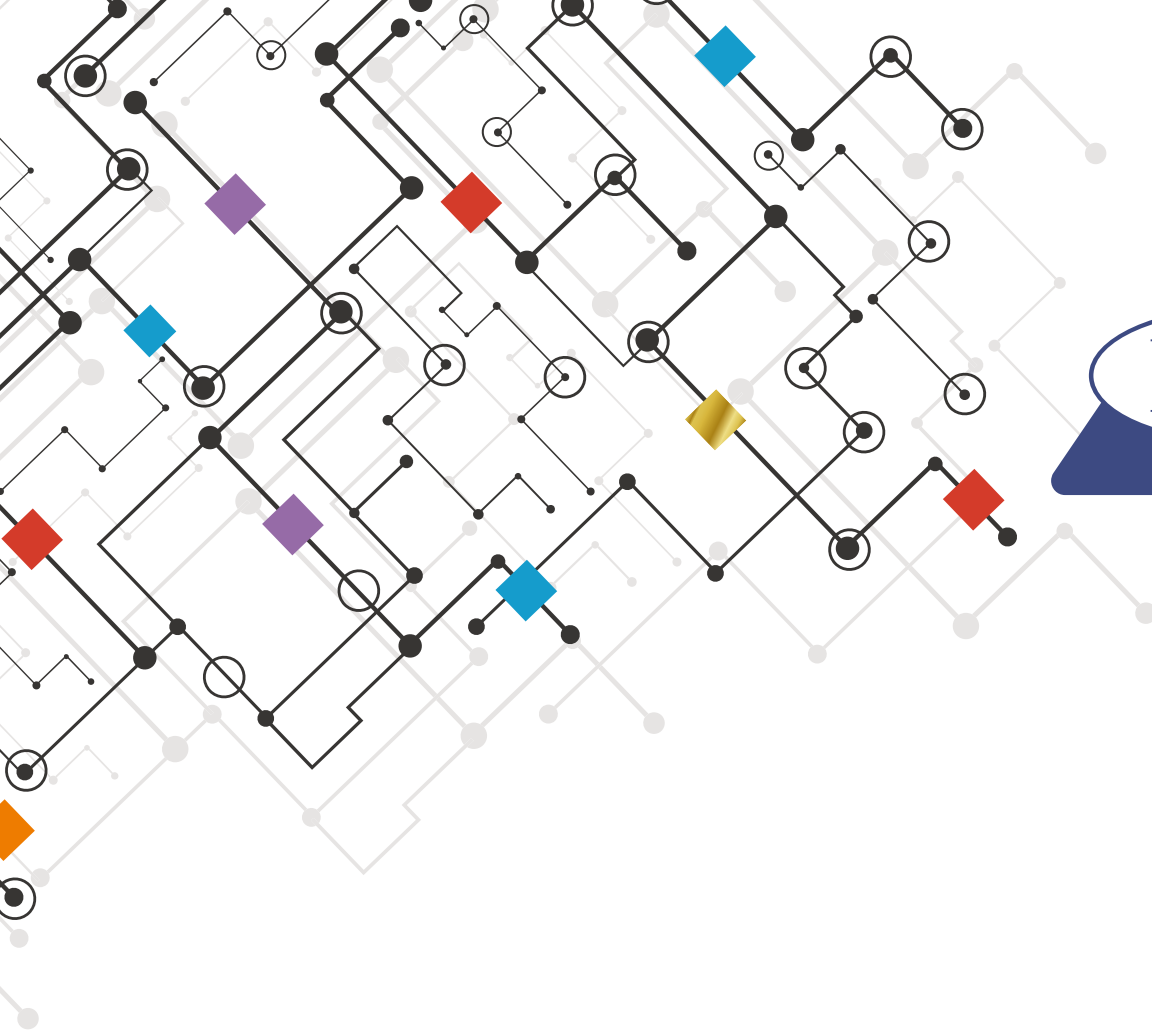
Jason Stine, Vice President

Expiry Date: 29 August 2026

Certificate Number: ACT-1898



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory  
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



# INTERNAL & EXTERNAL ACTIVITIES



*The Industrial Research Institute is actively and effectively present in both external and internal relevant activities. Its officials participate in conferences, seminars, and workshops, where they present research papers and propose recommendations that are adopted by attendees. These initiatives stem from accumulated expertise and continuous skill development. The Industrial Research Institute stands as a key player in international, regional, Arab, and local forums.*

## THIRD MEETING OF THE ADVISORY COMMITTEE ON INDUSTRIAL DEVELOPMENT RIYADH – KINGDOM OF SAUDI ARABIA 22 – 24 OCTOBER 2024

Due to the escalating economic crisis in Lebanon, and to maintain its involvement and external partnerships, the Industrial Research Institute opted for continuous participation, primarily through remote communication when in-person attendance was difficult. This was the case with its participation in the third meeting of the Advisory Committee on Industrial Development, held in Riyadh, Saudi Arabia. Lebanon was represented by Selim Kfoury, the institute's Deputy Director General and Administrative and Financial Director. Participants discussed Arab industrial integration strategies, along with topics related to solar energy, artificial

### REPORT AND RECOMMENDATIONS OF THE THIRD MEETING OF THE ADVISORY COMMITTEE ON INDUSTRIAL DEVELOPMENT RIYADH – SAUDI ARABIA, 22 – 24 OCTOBER 2024

With a distinguished hosting by the Ministry of Industry and Mineral Resources in the Kingdom of Saudi Arabia, the Advisory Committee on Industrial Development held its third meeting in Riyadh at the ministry's headquarters from October 22 to 24, 2024. The meeting took place both in person and via remote communication, with the participation of representatives from the following countries:

*(Attached, list of participants)*

- Ministry of Industry and Advanced Technologies – United Arab Emirates
- Ministry of Industry and commerce – Kingdom of Bahrain
- Ministry of Industry and Mineral Resources – Kingdom of Saudi Arabia
- Ministry of Industry – Republic of Sudan
- Ministry of Industry and Minerals – Republic of Iraq
- Ministry of Commerce, Industry, and Investment Promotion – Sultanate of Oman
- Ministry of Commerce and Industry – State of Qatar
- Ministry of Industry – Republic of Lebanon (via video-conferencing)
- Ministry of Industry and Minerals – State of Libya
- Industrial Development Agency – Arab Republic of Egypt (via video-conferencing)

- Ministry of Commerce and Industry – Kingdom of Morocco
- Ministry of Industry and Trade – Republic of Yemen

The meeting was attended by representatives from the Gulf Organization for Industrial Consulting, along with the Arab Organization for Industrial Development, Standardization, and Mining (the committee's rapporteur).

At the beginning of the meeting, Engineer Tawfiq Al-Rabihi, Deputy Director General of the Arab Organization for Industrial Development, Standardization, and Mining (AIDSMO), welcomed the participants and conveyed greetings from Engineer Adel Saqr Al-Saqr, the Director General of the organization. He then delivered a speech on his behalf, expressing gratitude and appreciation to King Salman bin Abdulaziz Al Saud and Crown Prince Mohammed bin Salman for their efforts in supporting Arab cooperation and partnerships to achieve comprehensive and sustainable economic development. He also extended his thanks to Minister Bandar bin Ibrahim Al-Khorayef, Minister of Industry and Mineral Resources of Saudi Arabia, for his sponsorship of the organization and continuous support of its activities, and to all Arab countries for their cooperation and support for the Organization, making it possible for it to fulfill its work programs in the best circumstances.



Appreciation was also given to Engineer Al-Badr bin Adel Foudeh, the chairman of the meeting, for his collaboration and efforts, as well as to the members of the Advisory Committee on Industrial Development for responding to the invitation to participate. Additionally, he thanked the Gulf Organization for Industrial Consulting (GOIC), led by CEO Ahmed bin Mohammed Al-Mohammed, for its efforts and cooperation with the organization in drafting the Arab Industrial Integration Strategy, and welcomed its representatives attending the meeting. He emphasized the important role of the Advisory Committee on Industrial Development in fostering industrial cooperation among Arab countries and strengthening strategic coordination. He also highlighted key topics on the committee's agenda, including following up on the progress on the Arab Industrial Integration Strategy, noting that with the guidance of the steering committee and cooperation among Arab member states, the technical advisory team has successfully applied several phases of the project. He then turned his attention to digital transformation and artificial intelligence, which were identified as essential tools for driving innovation and growth across economic sectors. These technologies provide unprecedented opportunities for the industrial sector, enhancing efficiency, productivity, and opening new pathways for innovation and development. Finally, he reaffirmed that these topics were included in the meeting agenda due to their significance in strengthening the industrial sector and the necessity of exploring opportunities to leverage digital transformation and AI applications in the industrial sectors of the Arab States.

Dr. Ahmed Al-Zawawi, Assistant Deputy of the Ministry of Industry and Mineral Resources in the Industrial Development Agency, delivered a speech on behalf of Engineer Al-Badr bin Adel Foudeh, the chairman of the meeting. He welcomed the participants and expressed gratitude to the Arab Organization for Industrial Development, Standardization, and Mining for its efforts and active role in strengthening cooperation among Arab countries to achieve comprehensive and sustainable

industrial development. He also extended deep appreciation to the committee members for their dedication in guiding and overseeing the organization's activities, enabling it to fulfill its noble mission of achieving industrial integration. Al-Zawawi emphasized that the participation of industry ministry representatives in this meeting reflects a shared commitment to advancing industrial integration among Arab nations, fostering deeper collaboration and coordination for sustainable industrial growth. He stressed that Saudi Arabia places great importance on strengthening Arab and regional partnerships across various sectors, including the industrial sector, which serves as a key driver of national economies. He pointed out that there are vast opportunities to develop the industrial sector and enhance its competitiveness, as Arab countries possess valuable resources and capabilities that position them for leadership in multiple sectors. He noted that coordinated efforts will help achieve common aspirations. He pointed that the meeting agenda included significant topics such as following up on the ongoing progress of the Arab Industrial Integration Strategy, digital transformation, artificial intelligence applications in the industrial sector and stressed the need to increase focus on these areas and highlighted that the meeting would feature leading Arab experiences in digital transformation and AI applications, which could serve as a source of inspiration to propel the region toward a more prosperous and diverse future.

After that, the agenda was approved as follows:

- Item One:** Follow-up on the implementation of recommendations from the second meeting of the advisory committee.
- Item Two:** Industrial development plans, programs, policies and strategies in Arab countries (Arab experiences).
- Item Three:** Presentation of related decisions issued during the 65th session of the organization's executive council.
- Item Four:** Presentation of related decisions issued during the 28th session of the organization's general assembly.

**Item Five:** Follow-up on the progress of the Arab industrial integration strategy project.

**Item Six** Digital transformation and artificial intelligence applications in the industrial sector.

**Item Seven:** Date and location of the fourth advisory committee meeting.

A drafting committee was formed from Saudi Arabia and Oman, along with the Arab Organization for Industrial Development, Standardization, and Mining as the committee's rapporteur.

The meeting featured two presentations by AIDSMO and GOIC on the progress of the Arab industrial integration strategy project, the measures taken, and the completed phases so far. Additionally, leading Arab experiences in digital transformation in the industrial sector were presented by representatives from the United Arab Emirates and Egypt, while representatives of Saudi Arabia and Oman provided insights into the use of artificial intelligence applications. Participants contributed to enriching the discussions and engaged positively with the agenda topics, resulting in the following recommendations:

**Item 1: Follow-up on the implementation of recommendations from the second meeting of the advisory committee**

1. Expressing gratitude to the Arab Organization for Industrial Development, Standardization, and Mining for its efforts in following up on the recommendations of the second meeting of the Advisory Committee on Industrial Development.
2. Emphasizing the importance of the participation of all Arab country representatives in the meetings of the Advisory Committee on Industrial Development, and inviting the organization to ensure implementation.
3. Calling on ministries of industry that have not yet appointed a representative to the Advisory Committee on Industrial Development to do so and provide the organization with their contact details (name, job title, mobile number, email).
4. Urging committee members to adhere to the

timelines included in the recommendations of the Advisory Committee meetings, and to respond and comment to correspondence from the Arab Organization for Industrial Development, Standardization, and Mining within the specified deadlines.

5. Stressing the importance of coordinating the Arab position in regional and international forums and meetings to serve the common interests of Arab countries, and the need to enhance Arab presence in the technical committees of international organizations related to industrial development. Countries are invited to submit their nominations for membership in the boards of directors, technical committees, and executive committees of these organizations to support and coordinate efforts in this regard.

**Item 2: Presentation of related decisions issued during the 65th session of the organization's executive council**

1. Taking note of the executive council's decisions regarding the Advisory Committee on Industrial Development and the Arab Industrial Integration Strategy project, while reaffirming the committee's commitment, along with the designated technical advisory team, to continue following up on the implementation of these decisions.
2. Expressing gratitude to the Arab Organization for Industrial Development, Standardization, and Mining for its effective follow-up on the implementation of the executive council's decisions.

**Item 3: Presentation of related decisions issued during the 28th session of the organization's general assembly**

1. Taking note of the decisions of the organization's general assembly regarding the Arab Industrial Integration Strategy project and reaffirming the committee's commitment to continuing the follow-up on the implementation of these decisions.
2. Expressing gratitude to the chairman and members of the working team tasked with drafting

the general framework for the Arab Industrial Integration Strategy, which was approved by the organization's general assembly, for their valuable efforts and contributions in completing this document, which serves as a foundation for developing this important project.

3. Extending thanks to the Arab Organization for Industrial Development, Standardization, and Mining for its effective follow-up on the implementation of the general assembly's decisions.

### **Item 4: Follow-up on the progress of the Arab Industrial Integration Strategy project**

1. Commending the constructive and productive collaboration between the Arab Organization for Industrial Development, Standardization, and Mining (AIDSMO) and the Gulf Organization for Industrial Consulting (GOIC) in preparing the document for the Arab Industrial Integration Strategy project, and valuing the efforts made by both organizations and the achievements realized in developing this important initiative.
2. Expressing appreciation to the ministries responsible for industry and mining in Arab countries that have designated representatives to cooperate with the technical advisory team composed of representatives from AIDSMO and GOIC. Encouraging these representatives to continue their cooperation with the team by providing updated data, statistics, and required documents, and reviewing additional statistics and data compiled by the technical advisory team from national and international sources available in shared electronic files assigned to each country's data, ensuring their validation and adoption.
3. Emphasizing the importance of cooperation between the ministries responsible for industry and mining in Arab countries and the technical advisory team assigned to prepare the document for the Arab Industrial Integration Strategy project by supplying updated data, statistics, and required documents. Inviting ministries that have not yet provided AIDSMO with the name of their representative to designate one and submit

their contact details to facilitate coordination and schedule a remote (virtual) meeting with the advisory team, following the approach taken with other ministry representatives.

### **Item 5: Digital transformation and artificial intelligence applications in the industrial sector**

Developing the role of small and medium industries in economic and social development

1. Expressing gratitude to the representatives of the ministries responsible for industry for their presentations during the meeting on their countries' pioneering experiences in digital transformation (United Arab Emirates and Egypt) and artificial intelligence applications in the industrial sector (Saudi Arabia and Oman).
2. Commending the proposed topics included in the meeting agenda and inviting ministries responsible for industry to take the initiative in suggesting topics of importance to the Arab region during committee meetings, with the aim of reviewing them and issuing relevant recommendations.
3. Emphasizing the importance of strengthening cooperation, partnerships, and coordination among digital transformation centers in Arab countries.
4. Stressing the need to develop policies, programs, and plans to support and accelerate digital transformation in industrial sectors, maximize its benefits, and provide the necessary mechanisms for implementation.
5. Calling on Arab countries to provide AIDSMO with their strategies and plans for digital transformation and artificial intelligence applications in the industrial sector to facilitate knowledge-sharing and utilization.
6. Highlighting the importance of benefiting from the expertise and experiences from international and regional organizations in the field of digital transformation in the industrial sector and developing joint training programs that benefit from global experience in this field.
7. Reinforcing the need to coordinate research, development, and innovation efforts in relevant areas, activate linkages between industry,

academic institutions, and scientific research centers, strengthen cooperation among innovation and entrepreneurship ecosystems, and inviting AIDSMO to include a discussion on research, development, and innovation in the industrial sector in the agenda of the next committee meeting.

8. Emphasizing the importance of capacity-building in the field of evaluating factory readiness for digital transformation by training and certifying assessors and benefiting from training courses offered by the Arab Institute for Industrial and Mining Training and Consulting, affiliated with AIDSMO.

#### Item 6: Date and location of the fourth meeting of the Advisory Committee on Industrial Development

*Rapporteur*

**Dr. Amir Al-Rifai**

Head of Industrial Development Department  
Arab Industrial Development,  
Standardization and Mining Organization  
Meeting Rapporteur

*President*

**Engineer Al-Badr bin Adel Foudeh**

Acting Deputy of the Ministry for Industrial Development  
And General Supervisor  
on the Industrial Empowerment Agency  
Ministry of Industry and Mineral Resources  
Kingdom of Saudi Arabia  
Meeting Chairman

*Approval*

**Eng. Adel Sakr El-Sakr**

Director General  
Arab Industrial Development,  
Standardization and Mining Organization

1. Expressing gratitude to the Ministry of Industry and Mineral Resources in the Kingdom of Saudi Arabia for hosting the third meeting of the Advisory Committee on Industrial Development at its headquarters in Riyadh and for its efforts in preparing and organizing this meeting.
2. Welcoming the invitation from the Ministry of Industry and Minerals in Libya to host the fourth meeting of the Advisory Committee on Industrial Development during the first half of 2025. Coordination between the organization and the ministry will take place in this regard.

The committee will hold its next meeting at the Organization's headquarters, with the possibility of hosting it by one of the member states during the first half of 2024.

### LIST OF PARTICIPANTS IN THE THIRD MEETING OF THE ADVISORY COMMITTEE FOR INDUSTRIAL DEVELOPMENT RIYADH, KINGDOM OF SAUDI ARABIA, 22 – 24 OCTOBER 2024

#### 1- United Arab Emirates

<b>H.E. Mr. Usama Amir Fadl</b>	Assistant Deputy of the Ministry for Industrial Accelerators Sector Ministry of Industry and Advanced Technologies	ofadhel@moiat.gov.ae	(+971) 50 9756667
<b>H.E. Ms. Fatima Issa Al-Mheiri</b>	Deputy Director Science and Technology Adoption and Development Department	falmheiri@moiat.gov.ae	(+971) 55 9933333

## 2- Kingdom of Bahrain

<b>H.E. Eng. Ibtissam Issa Al Shenoo</b>	Head Department of Industrial Operations	ofadhel@moiat.gov.ae	(+971) 50 9756667
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## 3- Kingdom of Bahrain

<b>H.E. Dr. Ahmed Zawawi</b>	Assistant Deputy for Industrial Development Agency	ofadhel@moiat.gov.ae	(+971) 50 9756667
<b>H.E. Dr Walid Basuliman</b>	Deputy Director for Science and Technology Adoption and Development	w.basuliman@mmim.gov.sa	
<b>H.E. Mr. Sououd Ali Al Taleb</b>	Director of Small and Medium Factories Development Department		(+966) 5800999046
<b>H.E. Mr. Abdallah Majid Al Qunaissi</b>	Portfolio manager General Directorate for Entrepreneurship and Small and Medium Factories Development Ministry of Industry and Mineral Resources	A.algunaisi@mim.gob.sa	(+966) 501351341

## 4- Republic of Sudan

<b>H.E. Ms. Iman Jaafar Hassan Abdel Rahman</b>	Director of Industrial Production supplies Department Ministry of Industry	Eghg686@gmail.com	(+249) 908809439
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## 5- Republic of Iraq

<b>H.E. Mr. Falih Miziil Mizhir Al Abedi</b>	Assistant General Director of Al Zawraa General Company Ministry of Industry and Minerals	marhoonalabidy@yahoo.com	(+964)7906585441
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## 6- Sultanate of Oman

<b>H.E. Eng. Jasim Bin Saif Al Jadeedi</b>	Director of Technical Office for Ministry Deputy Ministry of Commerce Industry and Investment Promotion	Jasim.aljadeedi@tejarah.gov.com	(+968) 96242808
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## 7- State of Qatar

<b>H.E. Mr. Abdallah Al Maadeed</b>	Director of Industrial Development Department Ministry of Commerce and Industry	agalmaadeed@moci.gov.qa	(+974) 55001037 / 40423625
<b>H.E. Mr. Salim Al Kathiri</b>	Second Researcher International Cooperation Ministry of Commerce and Industry	salkathir@moci.gov.qa	(+974) 50026161



## 8- Republic of Lebanon (Via videoconferencing technique)

<b>H.E. Mr. Selim Kfoury</b>	Assistant Director General Industrial Research Institute	info@iri.org.lb	(+961) 3 746598
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## 9- State of Libya

<b>H.E. Mr. Imad Aashour Wagad</b>	Director of the Office of the Minister of Industry and Minerals Ministry of Industry and Minerals	Ewagad.sh@gmail.com	(+218) 913515520
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## 10- Arab Republic of Egypt

<b>H.E. Dr. Nahed Youssef</b>	Chairman of the Board of Directors Industrial Development Agency	info@ida.gov.eg	(+202) 25370344/ 25370345
<b>H.E. Dr. Sabry El Shafiy</b>	Director General of the Strategic Department Industrial Development Agency	Sabry.elshafiy@ida.gov.eg	(202)25370308
<b>H.E. Ms Rania Raafat</b>	Industrial Development Agency	Raniaelnazer77@gmail.com	

## 11- Kingdom of Morocco

<b>H.E. Mr. Rashid Bahi</b>		rbahi@mcinet.gob.ma	
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## 12- Republic of Yemen

<b>H.E. Mr. Mohamed Naji Saleh Ayedh</b>	Ministry Deputy for the Industrial Sector Ministry of Industry	Mohamed.N.Ayedh@gmail.com	(+9672)770000901 / 711000901
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## 13- Gulf Organization for Industrial Consulting

<b>H.E. Dr. Ali Hamid Al Mulla</b>	Director of Industrial Projects Department	aalmulla@goic.org.qa	(+974)50 885444
<b>H.E. Dr. Bassel Shadid</b>	Industrial Expert	bshadid@goic.org.qa	(+974)55259201

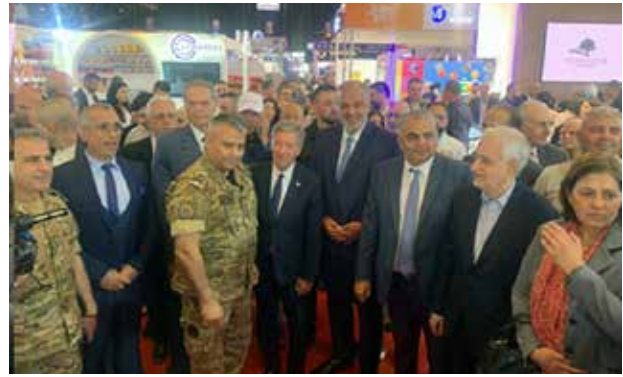
## 14- Arab Industrial Development, Standardization and Mining Organization

<b>H.E. Eng. Tawfiq Al Rabihi</b>	Assistant General Manager	aidsmo@aidsmo.org
<b>Dr. Amir Al Rifai</b>	Supervisor of Industrial Development Directorate	id@aidsmo.org
<b>Eng. Aalaeddeen Allaziz</b>	Head of Department of Sustainable Development Industrial Development Directorate	
<b>Ms. Rashida Abrghaz</b>	Secretary of the Industrial Development Directorate	

## OPENING OF THE MADE IN LEBANON INDUSTRY EXHIBITION

**May 9, 2024**

Caretaker Minister of Industry, MP George Bouchikian, inaugurated the Made in Lebanon Industry Exhibition at Forum de Beyrouth. The event was organized by Media Trade and Wedding Mall under his patronage, in coordination with the Ministry of Industry and the Association of Lebanese Industrialists, under the slogan “Lebanon’s Pulse is its Industry.”



Representing the Industrial Research Institute at the opening ceremony were Deputy Director General and Administration and Financial’s Director, Mr. Selim Kfoury, along with Director of Applied Research and Testing, Dr. Joseph Matta.

The exhibition featured around three hundred booths spread over an area of fourteen thousand square meters, showcasing various sectors spanning more than twenty industries across all Lebanese regions. It also included a dedicated pavilion specializing in the food and beverage industry.

## BUILD\_ME PROJECT WORKSHOP “ACCELERATING 0-EMISSION BUILDING SECTOR AMBITIONS IN THE MENA REGION”

**10 May 2024**

The 2nd National Workshop of the Build\_me project “Accelerating 0-emission Building Sector Ambitions in the MENA Region” was held on Friday, 10 May 2024 at the Mövenpick Hotel in Beirut. The workshop focused on promoting energy efficiency in the building sector, with a particular emphasis on the Energy Performance Certificate (EPC) scheme. This initiative aims to enhance transparency regarding energy performance within the construction industry. The event also included the presentation and the live demonstration of the Building Energy Performance (BEP) tool, which highlights innovative approaches to assessing and improving energy efficiency in buildings. Furthermore, a panel discussion brought together prominent experts, including Dr. Imad Hage Chehade (Technology & Development Director at the Industrial Research Institute), Mr. Ali Ramadan (Director General of Urban Planning) Mr. Rony Lahoud (Director General of the Public Corporation for Housing), and Engineer Pierre Khoury (President of the board of LCEC) to explore the opportunities and challenges of implementing the EPC scheme in Lebanon. These discussions underscored the project’s potential to foster a climate-friendly building sector and address key sustainability challenges.





## ALMEE TRAINING

**Feb 28-29 and March 6-7**

In collaboration with the Industrial Research Institute (IRI), ALMEE organized professional training on the Energy Management System ISO 50001:2018 for the industrial sector, within the framework of the ADEME-ALMEE convention. The main objective was to initiate the adoption of this ISO standard, which ensures continuous improvement in energy efficiency, substantial savings, and significant reductions in greenhouse gas emissions.

This training took place in the last week of February 2024 and covered all aspects and stages of ISO 50001:2018 in detail, including technical aspects as well as those related to standardization and compliance. The 30 industrialists in attendance showed great interest in the importance of adopting such a standard.

In addition, in the same framework, a professional training course, related to the safety in PV solar system, was held.

Dr. Imad Hage Chehade, Technology and Development Director at the Industrial Research Institute, led the IRI team organizing the event. Dr. Adnan Jouni, energy expert at ALMEE, led the ALMEE team organizing the event.



## LCEC TRAININGS FOR PV TECHNICIANS

Several successful training sessions for PV technicians were held in collaboration with LCEC. The trainings were organized by Eng. Mohammad Assaad El Hajjar, along with the IRI team, with participation of electrical laboratory team, and welding center team.

The courses covered the following topics:

- The solar energy market in Lebanon, including legal and administrative requirements
- Basics of welding
- Rust protection for frames
- Frame installation
- Solar energy components
- Solar energy applications
- Design, sizing, and installation considerations

## INTERNAL ACTIVITIES

- Safety considerations for solar energy applications
- Acceptance tests (earth resistance, verification of conformity, short circuit current, insulation, voltage drop, performance ratio, etc.)
- Monitoring and control
- Maintenance

The IRI Energy Laboratory team continues to make significant efforts to serve the Lebanese market.

The trainings were held on the following dates:

- 06-07/02/2024: 15 trainees from 10 companies
- 12-13/03/2024: 14 trainees from 11 companies
- 04-05/05/2024: 14 trainees from 10 companies



- 23-24/08/2024: 16 trainees from 9 companies
- 19-20/09/2024: 12 trainees from 8 companies

## PROJECT LEBANON 2024

The Industrial Research Institute (IRI) participated in Project Lebanon 2024, the 25th International Trade Exhibition for Construction, Infrastructure, and Renewable Energy, which took place from April 24th to April 26th. The event was held under the theme “Lebanon Going Forward,” focusing on the country’s development and future growth.

At the exhibition, IRI set up an informative stand that showcased its wide range of services. The display provided detailed information about each of IRI’s laboratories and the specialized tests they offer across various sectors. Visitors were introduced to the institute’s significant contributions, including its role in establishing and updating Lebanese national specifications. Additionally, IRI highlighted the international agreements and collaborations it has

secured over the past two decades, emphasizing its growing influence and recognition in the global scientific and technical community. Through this participation, IRI demonstrated its ongoing commitment to advancing the quality and standards of research and development in Lebanon.





## EFFICIENT COOLING SYSTEM

9-10 March 2024

As part of its activities under the Cool Up program, the Lebanese Center for Energy Conservation (LCEC), in partnership with GUIDEHOUSE Germany GmbH, is working with the Regional Center for Renewable Energy and Energy Efficiency (RCREEE) to organize specialized training sessions on “Efficient Cooling Systems” in Lebanon, based on the PA-CEMP program. This initiative aims to provide Lebanese engineers and technicians in the cooling industry with

the necessary knowledge and skills on efficient cooling principles, energy-saving technologies, and best practices for system design, sizing, and maintenance. By offering this training, the collaboration seeks to enhance the capabilities of professionals in the sector, promoting energy efficiency across cooling systems. IRI was represented by Eng. Mohammad Assaad El Hajjar and Eng. Ahmad Hassan.

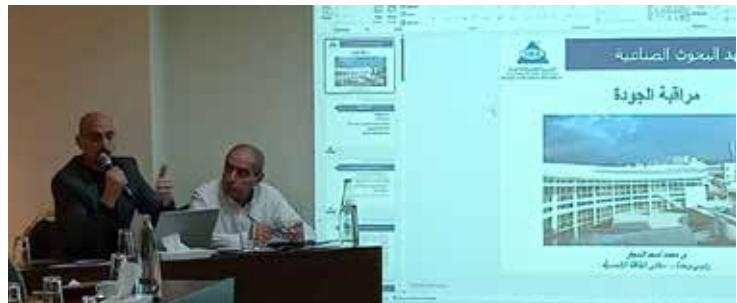


## WORKSHOP UNDER THE TITLE “WHAT MANAGEMENT APPROACH FOR RENEWABLE ENERGY VIOLATIONS?”

Engineer Mohammad Asaad Al-Hajjar, Unit Head of the Renewable Energy Laboratory at the Industrial Research Institute, participated in the first workshop held in Lebanon on managing renewable energy waste, especially in light of the significant increase in the installation of solar panels and solar energy systems in recent years.

Engineer Al-Hajjar discussed the role of the Industrial Research Institute in regulating and monitoring goods in Lebanese markets and ensuring their quality through periodic testing. He also addressed the cost of dismantling and recycling solar panels, noting that it may not be competitive compared to importing new panels. He added, “Climate change

has increased the number of sunny hours in Lebanon, giving us nearly ten months of sunshine that can be harnessed for energy generation.” He also pointed out “fluctuations in imports and attempts to introduce goods that do not meet specifications, as well as installation issues and decisions to prohibit the import of used solar energy systems.”



## THE 11TH GENERAL ASSEMBLY MEETING OF THE ARAB METROLOGY GROUP AND THE 16TH MEETING OF THE ADVISORY COMMITTEE ON METROLOGY

The Industrial Research Institute was represented by the Head of the Metrology Laboratory, Engineer Elias Maalouf, at the 11th General Assembly Meeting of the Arab Metrology Program (ARAMET) and the 16th Meeting of the Advisory Committee on Metrology, held from May 19 to 21, 2024, at the headquarters of the Standards and Metrology Organization in the

Hashemite Kingdom of Jordan.

Representatives from national metrology institutes across Arab countries participated in the meetings, where they discussed the Group's implementation plan and reviewed the application of recommendations made during the 15th Meeting of the Advisory Committee on Metrology.



## A TRAINING COURSE ON THE USE OF RADIOACTIVE ISOTOPES IN DETECTING AND IDENTIFYING ISSUES IN INDUSTRIAL SYSTEMS

The Arab Atomic Energy Agency, in collaboration with the Egyptian Atomic Energy Authority, held a training course on the use of radioactive isotopes in detecting



and identifying issues in industrial systems in the Arab Republic of Egypt from May 12 to 16, 2024.

The Industrial Research Institute was represented in this course by Mr. Taher Wehbe, Unit Head of Inspection and Monitoring, and Engineer Hashem Al-Ali, Unit Head of Welding Certification at the Lebanese Welding Center.

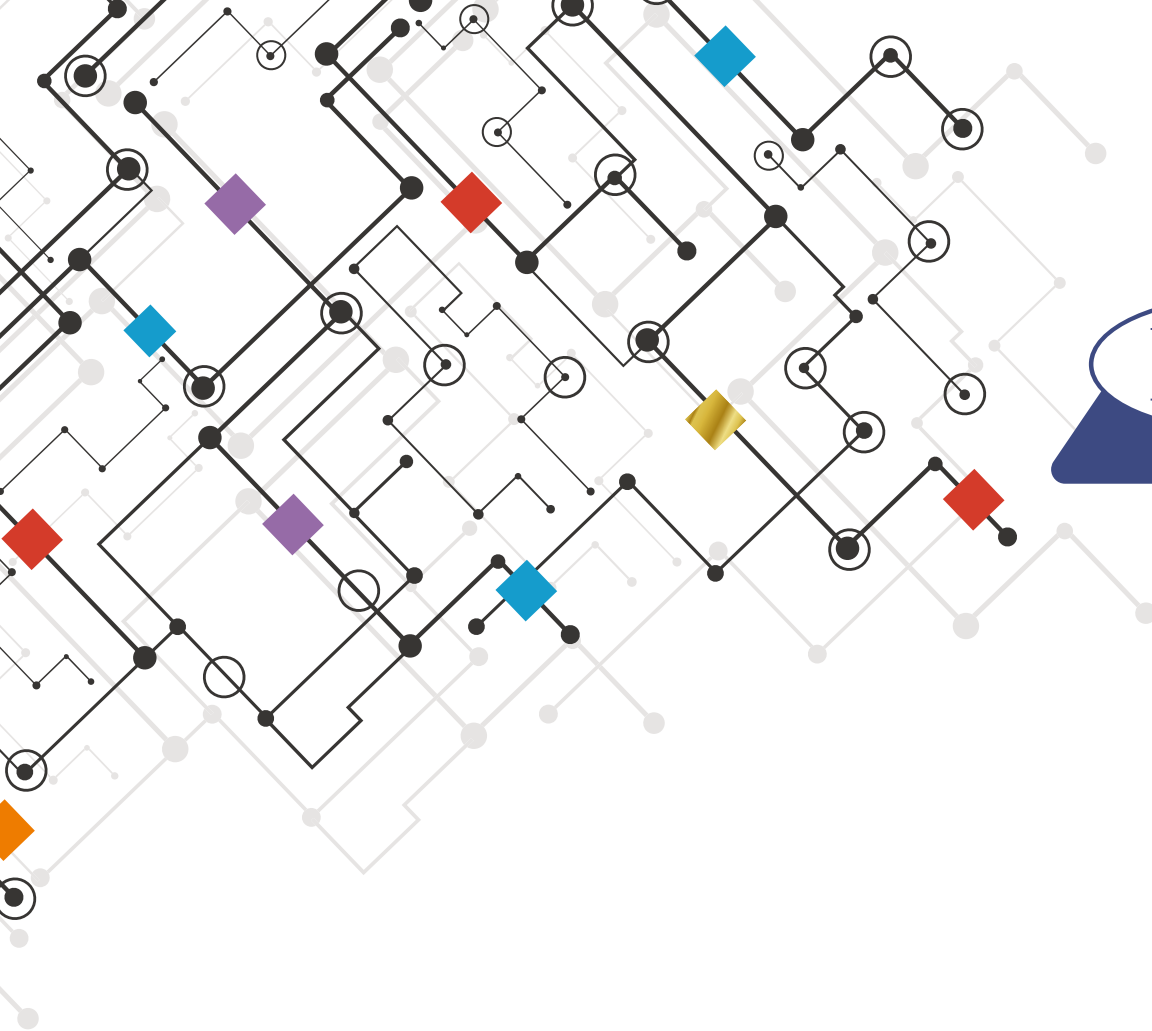
The course aimed to familiarize participants from Arab countries with techniques for using radioactive isotopes to identify problems within

various industrial systems, including petroleum, chemicals, mining, phosphate, gold, cement, paper, and sugar industries. It also provided an opportunity for participants to gain insight into these nuclear non-destructive technologies.

These applications are widely used in industries worldwide, helping to enhance productivity and sustainability by making use of nuclear energy technology and modern electronic measurement devices.







# APPLIED RESEARCH & STUDIES

## THE INSTITUTE PERFORMED 8 ENVIRONMENTAL AND TECHNOLOGICAL STUDIES AND ANALYZES IN 6 FACTORIES

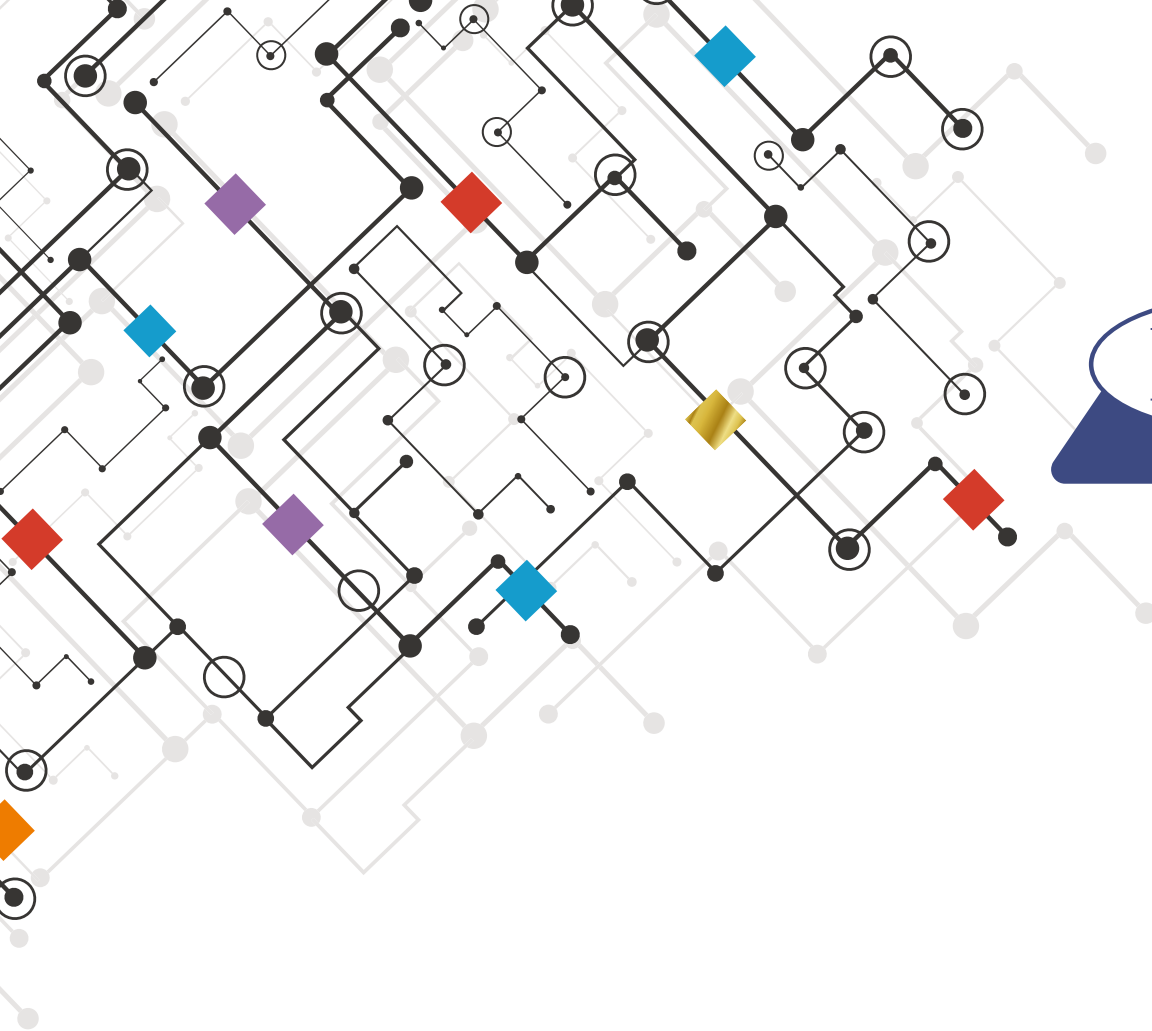
The Industrial Research Institute keeps pace with the current status of industries and factories, especially the ones that received ISO environmental certification from the Institute, and ensures their continuous compliance with the scientific and technological standards required to maintain a healthy environment for human beings and preserve the nature.

The IRI completed 8 studies and analyzes in 6 factories, among which studies in environmental auditing and in environmental analyzes and technical field studies, as follows:

### Comprehensive Environmental Analyzes and Technical Field Studies

- Cimenterie Nationale s.a.l.
- Unipak
- Medvision
- HENKEL Lebanon s.a.l.
- Liban Cables s.a.l.
- Hammoud Hospital University Medical Center





# SCIENTIFIC PUBLICATIONS

Because scientific research contributes to the progress and preservation of societies by ensuring a better life, the Industrial Research Institute contributed during the year 2024 to research the results which were published in international scientific publications, and which contributed

to the advancement of science and knowledge. Professor Joseph MATTA, Director of Applied Research and Laboratories at the Industrial Research Institute has published scientific papers on health, nutritional and environmental issues.

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Heliyon

journal homepage: [www.cell.com/heliyon](http://www.cell.com/heliyon)


## Assessment of prerequisite programs implementation at food packaging manufacturing companies and hygiene status of food packaging in a developing country: Cross-sectional study

Marilyn Abdessater<sup>a</sup>, Fady Fayyad<sup>b</sup>, Joseph Matta<sup>b,c</sup>, Layal Karam<sup>d,\*</sup>
<sup>a</sup> Faculty of Nursing and Health Sciences, Notre Dame University Zouk Mosbeh, Lebanon, P.O. Box: 72, Zouk Mikael, Lebanon

<sup>b</sup> Industrial Research Institute, Lebanese University Campus, Hadeth, Baabda, Lebanon

<sup>c</sup> Department of Nutrition, Faculty of Pharmacy, Saint-Joseph University of Beirut, Medical Sciences Campus, Damascus Road, P.O.B. 11-5076, Riad Solh, Beirut, 1107 2180, Lebanon

<sup>d</sup> Human Nutrition Department, College of Health Sciences, QU Health, Qatar University, Doha, Qatar

### ARTICLE INFO

#### Keywords:

On-site inspection  
Packaging contamination  
Acceptance criteria  
Contact surface  
Hand swab

### ABSTRACT

Food packaging has a critical role in all food types and along the food chain from product preservation to transportation, distribution, storage, retailing, and end-use. However, it can become a source of contamination and transfer of microorganisms to the packed food when its hygienic status is not well maintained. The aim of this study was to evaluate the Prerequisite programs (PRPs) implementation in 5 food packaging companies across Mount Lebanon through on-site inspections and to assess the compliance of contact surfaces, employee hands and packaging materials to microbiological specifications. Following on-site inspection, none of the companies achieved a full total score of 100% and scores ranged from 25 to 62%. Regarding the assessment of hygienic status of contact surfaces, non-conforming results (acceptable limit  $\leq 0.6$  log colony forming units (CFU)/cm<sup>2</sup>) were observed in 50% (5/10) of the surfaces for total viable count (TVC). For the employee hands, none of the hand swab samples (10/10) was conforming for TVC that was present in all samples above the acceptable limit. Highest and lowest reported values were 4.4 and 1.7 log CFU/hands respectively. For packaging samples collected during on-site inspections, TVC and yeasts and molds were detected in 20% (2/10) of the samples. However, the samples collected from the retail market, had higher contamination rates of 95% (19/20) and 65% (13/20) for TVC and yeasts and molds, respectively. As for *Enterobacteriaceae*, it was not detected in all tested contact surfaces, employees' hands, and packaging samples. PRPs assessment and related verification activities showed the need for companies to strengthen their hygienic programs and highlighted the importance of food safety management systems (FSMS) implementation not only in food companies but also in food packaging companies. Additionally, the effectiveness of PRPs implementation should be assessed on planned routine basis.

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Environmental Research

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# Serum levels of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans in a sample of Lebanese pregnant women: The role of dietary, anthropometric, and environmental factors

Yara Mahfouz<sup>a</sup> , Mireille Harmouche-Karaki<sup>a</sup> , Joseph Matta<sup>a, b</sup> ,  
 Maya Mahfouz<sup>a</sup> , Pascale Salameh<sup>c, d, e, f</sup> , Hassan Younes<sup>g</sup> , Khalil Helou<sup>a</sup> ,  
 Ramzi Finan<sup>h, i</sup> , Georges Abi-Tayeh<sup>i, j, k</sup> , Mohamad Meslimani<sup>l</sup> , Ghada Moussa<sup>m</sup> ,  
 Nada Chahrour<sup>n</sup> , Camille Osseiran<sup>o</sup> , Farouk Skaiki<sup>p, q</sup> , Jean-François Narbonne<sup>r</sup> 

- <sup>a</sup> Department of Nutrition, Faculty of Pharmacy, Saint Joseph University of Beirut, Medical Sciences Campus, Damascus Road, P.O.B. 11-5076, Riad Solh Beirut 1107 2180, Lebanon
- <sup>b</sup> **Industrial Research Institute**, Lebanese University Campus, Hadath Baabda, Lebanon
- <sup>c</sup> Clinical and Epidemiological Research Laboratory, Faculty of Pharmacy, Lebanese University, Hadath, Lebanon
- <sup>d</sup> School of Medicine, Lebanese American University, Byblos, Lebanon
- <sup>e</sup> Institut National de Santé Publique d'Épidémiologie Clinique et de Toxicologie-Liban (INSPECT-LB), Lebanon
- <sup>f</sup> Department of Primary Care and Population Health, University of Nicosia Medical School, 2417, Nicosia, Cyprus
- <sup>g</sup> UniLaSalle University, 19 Pierre Waguet Street, 60026 Beauvais, France
- <sup>h</sup> Lebanese Society of Obstetrics and Gynecology, Adliye, Beit El- Tabib - 3rd Floor, Beirut, Lebanon
- <sup>i</sup> Faculty of Medicine, Saint Joseph University of Beirut, Medical Sciences Campus, Damascus Road, Beirut, Lebanon
- <sup>j</sup> Hotel-Dieu de France, Saint Joseph University of Beirut Hospital, Blvd Alfred Naccache, P.O.B. 166830, Beirut, Lebanon
- <sup>k</sup> Lebanese Fertility Society, Adliye, Beit El- Tabib, Beirut, Lebanon
- <sup>l</sup> General Management, Chtoura Hospital, Zahle, Beqaa, Lebanon
- <sup>m</sup> Department of Obstetrics and Gynecology, Chtoura Hospital, Zahle, Beqaa, Lebanon
- <sup>n</sup> Department of Obstetrics and Gynecology, SRH University Hospital, Nabatieh, Lebanon
- <sup>o</sup> Department of Obstetrics and Gynecology, Kassab Hospital, Saida, Lebanon
- <sup>p</sup> Department of Molecular Biology, General Management, Al Karim Medical Laboratories, Saida, Lebanon
- <sup>q</sup> Faculty of Public Health, Lebanese University, Saida, Lebanon
- <sup>r</sup> University of Bordeaux, France

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## Article

# Maternal Serum, Cord and Human Milk Levels of Per- and Polyfluoroalkyl Substances (PFAS), Association with Predictors and Effect on Newborn Anthropometry

Maya Mahfouz <sup>1,\*</sup>, Mireille Harmouche-Karaki <sup>1</sup>, Joseph Matta <sup>2</sup>, Yara Mahfouz <sup>1</sup>, Pascale Salameh <sup>3</sup>, Hassan Younes <sup>4</sup>, Khalil Helou <sup>1</sup>, Ramzi Finan <sup>5</sup>, Georges Abi-Tayeh <sup>5</sup>, Mohamad Meslimani <sup>6</sup>, Ghada Moussa <sup>7</sup>, Nada Chahrour <sup>8</sup>, Camille Osseiran <sup>9</sup>, Farouk Skaiki <sup>10</sup> and Jean-François Narbonne <sup>11</sup>

<sup>1</sup> Department of Nutrition, Faculty of Pharmacy, Saint Joseph University of Beirut, Medical Sciences Campus, Damascus Road, P.O. Box 115076, Riad Solh Beirut 1107 2180, Lebanon;

<sup>2</sup> **Industrial Research Institute**, Lebanese University Campus, Hadath Baabda P.O. Box 112806, Lebanon; chem@iri.org.lb

<sup>3</sup> School of Medicine, Lebanese American University, Byblos 1102 2801, Lebanon; psalameh@ul.edu.lb

<sup>4</sup> Institut Polytechnique UniLaSalle, Collège Santé, Equipe PANASH, Membre de l'ULR 7519, Université d'Artois, 19 Rue Pierre Wague, 60026 Beauvais, France; hassan.younes@unilasalle.fr

<sup>5</sup> Hotel-Dieu de France, Saint Joseph University of Beirut Hospital, Blvd Alfred Naccache, Beirut P.O. Box 166830, Lebanon; ramzifinan@hotmail.com (R.F.); georges.abitayeh@gmail.com (G.A.-T.)

<sup>6</sup> General Management, Chtoura Hospital, Beqaa, Lebanon; meslimanimhd@gmail.com

<sup>7</sup> Department of Obstetrics and Gynecology, Chtoura Hospital, Beqaa, Lebanon; ghada.a.moussa@gmail.com

<sup>8</sup> Department of Obstetrics and Gynecology, SRH University Hospital, Nabatieh, Lebanon; nadachahrour7@gmail.com

<sup>9</sup> Department of Obstetrics and Gynecology, Kassab Hospital, Saïda, Lebanon; camilleosseiran@hotmail.com

<sup>10</sup> Department of Molecular Biology, General Management, Al Karim Medical Laboratories, Saïda, Lebanon; farouk.skaiki@stul.edu.lb

<sup>11</sup> Laboratoire de Physico-Toxico Chimie des Systèmes Naturels, University of Bordeaux, CEDEX, 33405 Talence, France; narbonne.jf@gmail.com

\* Correspondence: maya.mahfouz1@net.usj.edu.lb



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**Abstract:** Background: The understanding of per- and polyfluoroalkyl substances (PFAS) health effects is rapidly advancing among critical populations. Therefore, the objective of this study was to assess PFAS serum levels among Lebanese pregnant women, cord serum and human milk levels, their determinants, and effects on newborn anthropometry. Methods: We measured concentrations of six PFAS (PFHpA, PFOA, PFHxS, PFOS, PFNA and PFDA) using liquid chromatography MS/MS for 419 participants, of which 269 had sociodemographic, anthropometric, environmental and dietary information. Results: The percentage of detection for PFHpA, PFOA, PFHxS and PFOS was 36.3–37.7%. PFOA and PFOS levels (95th percentile) were higher than HBM-I and HBM-II values. While PFAS were not detected in cord serum, five compounds were detected in human milk. Multivariate regression showed that fish/shellfish consumption, vicinity to illegal incineration and higher educational level were associated with an almost twice higher risk of elevated PFHpA, PFOA, PFHxS and PFOS serum levels. Higher PFAS levels in human milk were observed with higher eggs and dairy products consumption, in addition to tap water (preliminary findings). Higher PFHpA was significantly associated with lower newborn weight-for-length Z-score at birth. Conclusions: Findings establish the need for further studies, and urgent action to reduce exposure among subgroups with higher PFAS levels.

**Keywords:** human biomonitoring; persistent organic pollutants; cord; human milk; newborn; perinatal exposure; pregnant women; exposure predictors



**ACTIVITIES OF THE  
EUROPEAN-LEBANESE  
CENTER FOR INDUSTRIAL  
MODERNISATION – ELCIM  
AND THE ACTIVITIES OF  
THE CENTER FOR  
INNOVATION & TECHNOLOGY -  
CIT**

ELCIM finalized the ENI CBC MED projects, including MAIA TAQA, EMPHASIS, and TRANSDAIRY ensuring all the activities were duly performed. Additionally, ELCIM carried out applications for the first call for proposals for the NEXT MED Interreg Programme, which included the following projects: ECOTWIN (focused on energy efficiency), REMUNERATOR (energy efficiency), SHINEMED (energy efficiency), ADVANCEMED (textile sector), OLIVECIRC (olive oil sector), ECOM-MED (e-commerce), and TRANSITMED (developing a dataset for the tourism sector).



Furthermore ELCIM applied for the Enterprise Europe Network (EEN) as part of a consortium, which included BERYTECH, IRALEB, and the Industrial Research Institute. The objective of this application was to strengthen our collaborative efforts in the region and enhance our capacity for international networking and innovation.

In parallel, we actively connected with various EU institutions to ensure the successful implementation of the Lebanon Innovate project activities. These institutions

included ERRIN, EBO, GLnL, and SME2B, all of which played an essential role in supporting the project's objectives and expanding its reach within the EU.

As part of the Lebanon Innovate project, ELCIM also developed alternative activities aimed at increasing the project's impact. This included planning for capacity-building training sessions and matchmaking events, to be held both in Lebanon and abroad, in order to facilitate the collaboration between key stakeholders in innovation and entrepreneurship.

Additionally, ELCIM worked on the development of the Knowledge and Innovation Communities (KICs) in the sectors of ICT, Agrofood, and Health. These efforts were carried out jointly with Berytech and Iraleb and are in line with the broader goals of the Lebanon Innovate project, aimed at fostering innovation and enhancing sector-specific growth.

To further support these initiatives, ELCIM established strategic contacts with the European Institute for Innovation and Technology (EIT), in order for the Lebanon Innovate project to benefit from their expertise and resources in driving innovation and entrepreneurship in Lebanon.





# ACTIVITIES OF THE LEBANESE CLEANER PRODUCTION CENTER - LCPC



*For the past twenty years, the Industrial Research Institute has been concerned with topics related to clean production, energy efficiency, reducing production costs, and reducing the use of water and electricity in factories. This effort was realized through the establishment of the Lebanese Center for Cleaner Production (LCPC). Significant results were achieved in this regard through collaboration with specific industrial sectors and individual manufacturers. The aim was to adhere to the conditions and standards of green industries adopted by production sectors in Europe, America, and some Asian countries.*

## LEBANESE RESOURCE EFFICIENT AND CLEANER PRODUCTION CENTRE (LCPC)

The core service of LCPC is to provide to industries support to implement Resource Efficiency and Cleaner Production (RECP) methodology to assist in bridging environment within their industries and pave the way to sustainability. This is shaped by conducting a full assessment in terms of technical capabilities, financial feasibility and environmental benefits to identify CP projects to be implemented and follow up on the outcomes and provide continuous evaluation.

The Industrial Research Institute is committed to support a sustainable industrial development and hereby provide free services of expertise and advise on Resource efficiency for the industrial sector in Lebanon benefiting from the accumulated knowledge to deliver capable RECP services at the national and regional level through the membership of LCPC at the Global UNIDO/ UNEP RECP Network.

## THE STRATEGY AND MAIN BENEFITS OF RECP

LCPC has been operation since twenty years within an overall strategy to provide preventive approach to reduce risks on human and environmental pollution, however, it is a novelty concept and an emerging activity in Lebanon. There is no specific legislation on CP in Lebanon yet, but there are some general regulations governing the use of polluting substances in addition to voluntary regulation mechanisms of CP mainly in the formalization of agreements between industrial companies and responsible authorities. The main import companies apply the voluntary regulation to increase their competition

in the regional and international markets and the main benefits of RECP are the following:

- Reduced raw material and energy consumption and hence cost;
- Reduced waste generation and hence waste management costs;
- Enhanced process efficiency;
- Improved quality and increased lifespan of the product;
- Improved working conditions and hence workers health and well-being; and
- Improved public image of the company.

## 2024 LCPC ACTIVITIES

### 1- TRAINING SESSION ON RECP FOR YOUTH DEVELOPMENT

**21st of June 2024**

LCPC have signed MoUs with Faculty of Science at Saint-Joseph University, Faculty of Agriculture and Environment at the Lebanese University and other universities to provide curriculum

for future generations. A Training session took place at Chrysalis gathering Bachelor and Master Students from different Universities to support the Youth initiative pushing forward to align with the Sustainable Development Goals (SDGs).



### 2- TWO WORKSHOPS ON SOLAR PV AT IRI

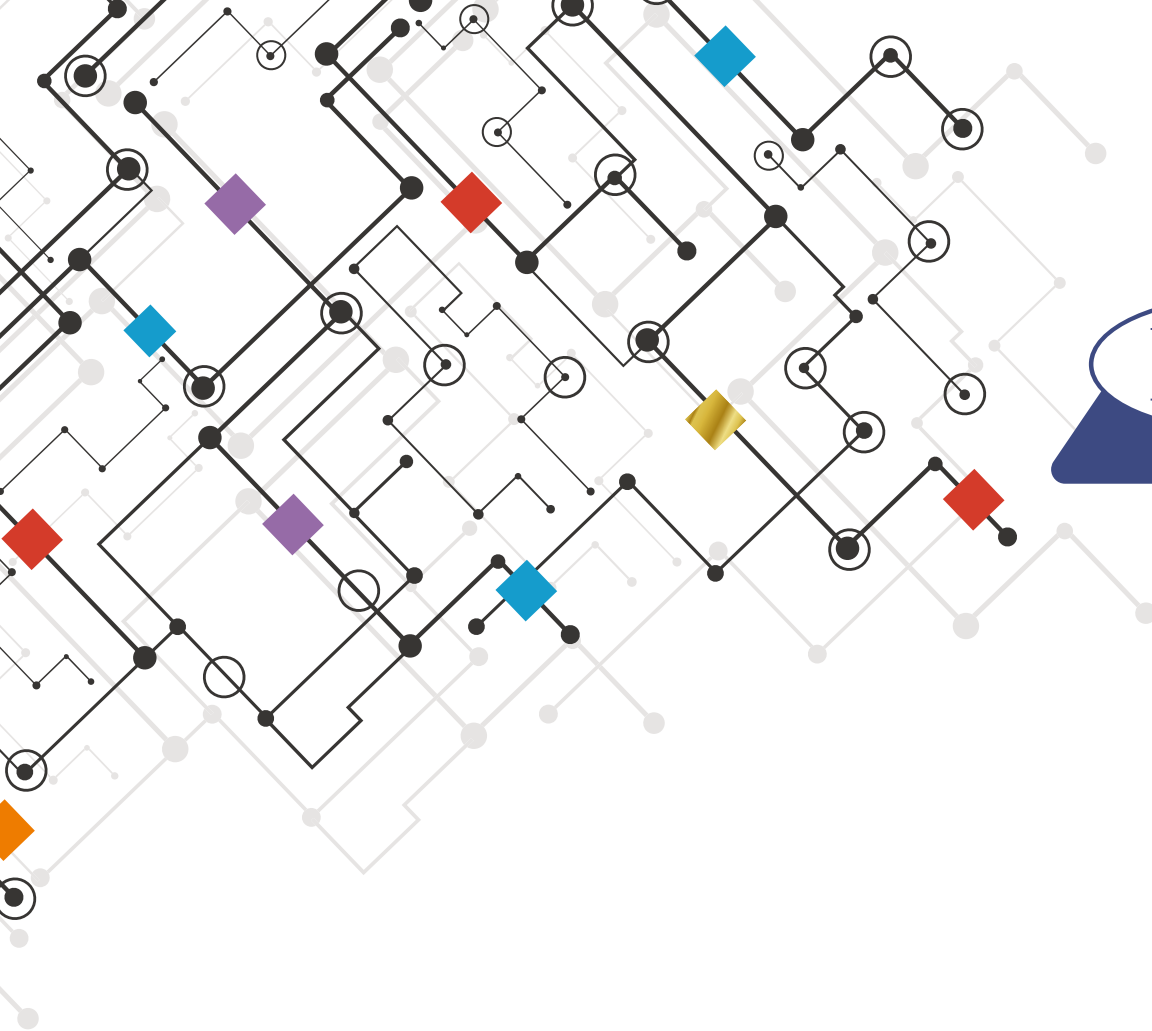
**6th of June & 14th of August 2024**

Solar energy is one of the most readily available energy sources and may be converted into electric power in a very clean manner using photovoltaic systems. Environmental issues related to global warming and greenhouse emissions push more and more the engineering community towards searching for more renewable sources or developing new technologies that may exploit clean energy sources. LCPC is contributing with RECP

insights within the Workshops organized at IRI for certified technicians on Solar PV to support better performance in using of Renewable Energy.







# IRI COOPERATION WITH THE PUBLIC SECTOR

## RELATION WITH THE PUBLIC SECTOR

The Institute acts on behalf of the Lebanese government and is authorized by it, to approve negotiations, sign agreements for mutual recognition of certificates of conformity in the trade exchange between Lebanon and other countries.

The Institute was tasked with the issuing of certificates of conformity in the importation of industrial goods, pursuant to the Lebanese decrees of mandatory specifications, and also in exportation operations in accordance with the specifications of the destination countries.

It should be mentioned here that since 2004, IRI has been the only internationally accredited body in Lebanon, as per the international accreditation certificate DIN EN ISO/IEC 17025. Consequently, the Institute is the only window available for the flow of Lebanese goods, which need laboratory tests and certificates of conformity, to the European and international markets.



### Parliament

IRI regularly accepts the invitations of parliamentary committees in the Lebanese parliament, and attends meetings held by them. IRI offers its technical and scientific expertise related to the Institute's scope of work to these committees during the drafting and discussion of bills.

IRI actively participated in the drafting and discussion of the bill on technical regulations and pertinent procedures for conformity assessment, in all stages of the process, with the subcommittee of the joint parliamentary committees, until the bill was approved by this committee at the end of September, 2011. IRI participated in the drafting of the bill regulating drinking water processing,

treatment and packaging, with the Committee on Public Health, Labor and Social Affairs.

The bill aims to limit the unregulated and exploding number of drinking water distribution companies in Lebanon, as a result of the growing need of the citizens for water that is otherwise unavailable through public drinking water grids. The bill seeks to subject most unlicensed bottling companies to the laws and regulations in force, in order to ensure the safety of water, that it is uncontaminated, and that it complies with the required specifications to preserve public health. IRI also participated in the activities of the Public Works and Energy Committee in several areas, including:

- Following up the process of replacing domestic gas bottles, especially the control of the production and exportation of gas bottles before they are used in local markets.
- Providing the necessary expertise and technical analysis related to fuels allowed in private cars.
- Offering opinion and technical analysis related to bills concerning public safety in the use of fuel tanks, with a view to prevent explosion.
- Expressing an opinion about the draft food safety law.
- Expressing an opinion about the draft law on electronic transactions and data of a personal nature



### Ministry of Industry

IRI is considered to be the quintessential technical arm of the Lebanese Ministry of Industry, especially as IRI is a subsidiary body of the ministry, and that its Board of Directors is headed by his Excellency the Minister of Industry. IRI is

continuously conducting the necessary industrial inspections and studies, as well as feasibility studies aimed at developing existing industries or establishing new ones. This is in addition to conducting studies on the added value of national industrial products and the need for certificates of origin for export clearance. Also, the Institute worked in parallel with the ministry in granting industrial licenses, pursuant to decree No. 8018 dated 20/6/2002, which assigned the required role for IRI in this regard, and is still working in parallel with the ministry whenever it is required to do so.



## Ministry of Economy and Trade

Since its inception, IRI has been cooperating with the Ministry of Economy and Trade, especially the Consumer Protection Directorate and the General Directorate of Cereals and Sugar beets.

- A- Consumer Protection Directorate This directorate is tasked with taking samples from local markets on a regular and ongoing basis, and handing them over to IRI for laboratory testing and issuance of the necessary reports, across various sectors. IRI comprises 14 accredited laboratories covering different sectors, in addition to a control and inspection unit, the meteorological calibration unit and the Lebanese Welding Centre.
- B- General directorate of Cereals and Sugar beets The Industrial Research Institute manages and operates the work of the central laboratory for grains, flour and bread research on behalf of the Ministry of Economy and Trade. The laboratory is equipped in accordance with highly specialized international cereal laboratories. The laboratory meets all the

needs of this directorate by controlling the quality of the imported and the locally produced wheat and wheat products (briefly, monitoring the ingredients that make up the Lebanese bread loaf).



## Ministry of Agriculture

The Ministry of Agriculture requests IRI to analyze samples from agricultural products or material on a frequent basis. These are usually sent to IRI by the ministry for testing, whether upon importing them, exporting them or their usage. IRI is also tasked with the analysis of fertilizers and pesticide residues in vegetables, fruits and other crops.



## Ministry of Public Health

IRI laboratories are used by the Ministry of Public Health in conducting special tests on bottled water, as a fundamental step in the process of obtaining a license for the water bottling companies, in addition to other tests conducted by the instituted which include, for example, baby formula, cosmetics, medicine and other items as needed.

The ongoing regulatory campaign launched by the Ministry of Public Health during 2014, required a continuous coordination with the Ministry which was and still sending a large number of samples daily so that the IRI conduct necessary tests and provide technical advice.

In its laboratories, the Institute conducted analysis and tests for thousands of samples brought by the Ministry of Health monitors, and results were given within the required time period, sometimes

immediately. The Institute was not surprised by the unprecedented quantity and quality of samples brought by the Ministry of Health monitors.



### Ministry of National Defense

The cooperation with the Lebanese army, including its various interests and divisions, has been firmly established since IRI's inception. IRI meets the requests of the committee tasked with the receipt of the analyzed materials and the central reserve committee for foodstuff analyses, the stewardship for uniforms and equipment, in addition to the requests of the corps of engineers, the logistical corps and the military police and other corps as needed. IRI also holds training courses on welding works, solar energy and other scientific topics which IRI proudly provides to this institution.



### Ministry of Interior and Municipalities

The Textile, Leather and Rubber Laboratory at IRI is continuously cooperating with the security in analyzing the uniforms of the Internal Security Forces, as well as shoes and equipment, in accordance with their requirements and in order to certify the conformity of these specimens with the specifications established by them, prior to purchasing uniforms and gear. IRI meets the various requests by the Internal Security Forces in different unmentioned sectors, including for example chemical analyses to identify contraband and other security-related analyses.



### Ministry of Energy and Water

IRI works with the Ministry of Energy and Water in different areas, most importantly overseeing the manufacturing of gas bottles and certifying that they conform to the mandatory Lebanese standards. IRI also inspects gasoline tanks in petrol stations, whether for licensing purposes or for maintenance when requested.

In addition, IRI inspects the nominal load of fuel tankers, in addition to other inspections that are conducted at the behest of the ministry.

IRI also conducts studies and offers technical consultation in national issues when requested, issues that fall under the scope of both the ministry's work and IRI's fields of expertise.



### Ministry of Environment

IRI continually cooperates with the requests of the Ministry of Environment, whether by analyzing samples to assess their negative environmental impact, or whether by providing the Ministry of Environment with its services in the field of the inspection and auditing of factories, before suggesting the optimal approach in the production process in order to mitigate the latter's negative environmental impact.

IRI also hosts the Lebanese Cleaner Production Centre (LCPC), which was established as a result of the cooperation among the Ministry of Industry, the Ministry of Environment, UNIDO and Austria.

This centre's main objectives include ensuring compliance with environmental standards during the different stages of production, something that is beneficial in terms of reducing costs by keeping

waste in check on the one hand, and improving the environment by recycling wherever possible during the production process on the other hand.



## Ministry of Justice

The judicial authorities continuously refer legal issues to IRI for technical advice, as IRI is the reference point for these authorities in what pertains to scientific issues.



## Ministry of Foreign Affairs and Emigrants

Within the framework of cooperation and coordination among organizations involved in supporting Lebanon's exports abroad, the Financial and Administrative Director, Mr. Selim Kfoury, and the Applied Research and Testing Director, Dr. Joseph Matta represented the Industrial Research Institute in the meetings held virtually, organized by the Ministry of Foreign Affairs and Emigrants with concerned ministries and agencies and economic attachés in certain countries, and representatives of these countries including, Jordan, the United Arab Emirates, Canada, the European Union and others in an effort to overcome barriers and increase the volume of our exports to these countries.



## Customs

Collaboration with the Lebanese customs is mainly done in the fields of enforcing and verification of conformity with the mandatory

specifications required for goods imported to Lebanon, and which are subject to customs restrictions. This is done according to a specific and known mechanism. The Customs authorities, according to the customary procedure, can send samples to IRI for analysis and for identification of their components, prior to clearing them for entry into the local markets.



## Lebanese Standards Institution (LIBNOR)

IRI worked diligently to establish the Lebanese Standards Institution (LIBNOR), which is tasked with issuing the Lebanese standards. In the beginning, this institution was established in the campus of IRI, which incubated its operations until it was reactivated in 1998. Since then, IRI published approximately one thousand national standards for the institution, as per annual contracts that were in force from 1998 until 2004. IRI is currently represented in the institution's Board of Directors, while IRI is permanently represented in the technical committees tasked with issuing and updating the national standards.

## The Lebanese Council for Accreditation (Colibac)

Some time ago, IRI realized that the infrastructure of a world-class quality process must include the following items:

- Bodies for conformity assessment that implement these specifications. This role is primarily assumed by IRI in Lebanon, not only in the application of national standards, but also in the application of international standards in export operations as IRI is internationally accredited according to ISO Certificates No. 17020 and 17025.
- A national institution for the issuance of national standards, which in Lebanon



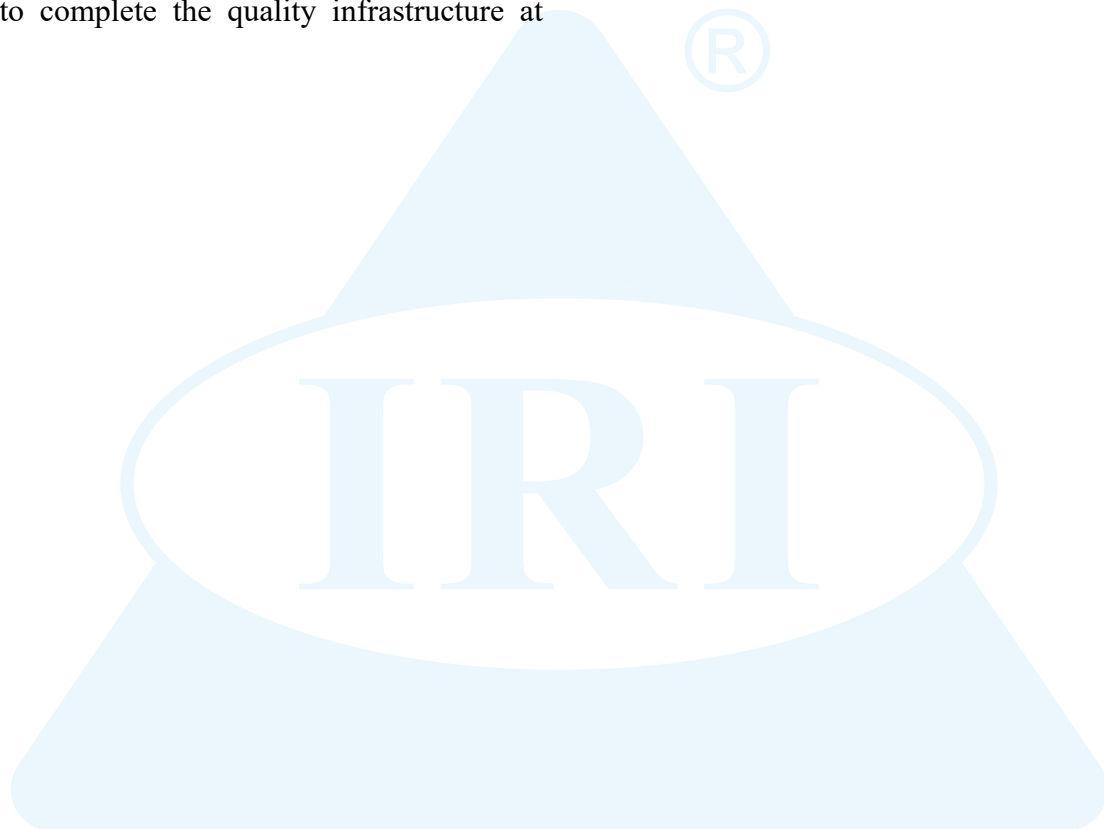
is the Lebanese Standards Institution (LIBNOR), a body that is ever striving to improve its role.

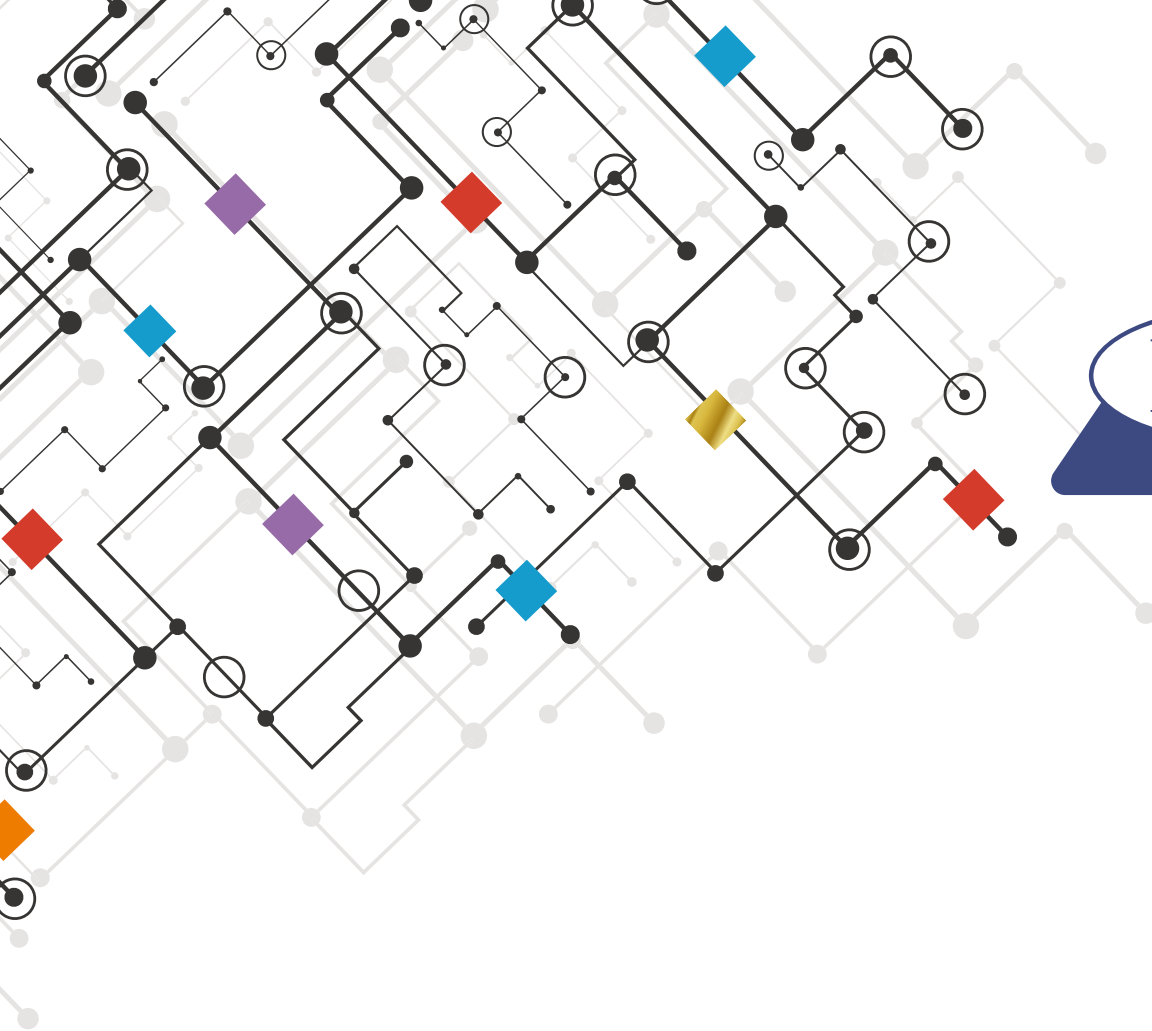
Oversight of the local market. This function is tasked to the Consumer Protection Directorate at the Ministry of Economy and Commerce .

A national council for accreditation, whose tasks include accrediting laboratories, monitoring commissions, conformity assessment for products and processes in the country. This national institution was not yet established in Lebanon, and IRI sought hard to establish it in order to complete the quality infrastructure at

the level of national institutions, until the decree of its establishment was issued in 2004, while the decree to establish its Board of Directors was issued in 2006. IRI is represented in the Board of Directors of the Lebanese Council for Accreditation (Colibac).

This council is still in the process of drafting its bylaws, which are nearing completion. Work is also underway to speed up the passing of the necessary legislations that will enable the council to start its operations and serve the purpose it was created for.





# IRI RELATIONS WITH THE PRIVATE SECTOR

## IRI'S RELATIONS WITH THE PRIVATE SECTOR

### Industrialists

IRI allots great importance to industrialists and industry in Lebanon. Thirteen years ago, IRI concluded an agreement with the Association of Lebanese Industrialists whereby it granted industrialists a fifty percent discount on the costs of all laboratory analyses, in accordance with the list adopted by IRI. The services provided by IRI to the industrialists are as follows:

#### **A- Analysis requests with the aim of improving**

The quality of production or finding solutions to production problems. Any industrialist can head to IRI to request an analysis of a product produced in his factory with the aim of improving its quality, or as a result of a particular problem he is facing during production. At that point, cooperation and follow-up begin with the industrialist.

In most instances, his request becomes a process of applied research with which these analyses either end up in improving the quality of the product or determining the underlying cause of the production problem and subsequently, working on solving this problem.

#### **B – Pre-export Analysis**

There are many products that cannot be exported to foreign markets without first being analyzed. As IRI is internationally accredited pursuant to ISO certificates No. 17020 and 17025, its accreditation is recognized by more than 120 countries, rendering it virtually the sole window through which Lebanese goods that comply with technical specifications can flow into the European and global markets, owing to the certificate of conformity issued by IRI.

Therefore, industrialists head to IRI to conduct the analyses required by the destination

countries, in order to obtain certificates of conformity for their products which would give them access to international markets.

#### **C – Product Certification**

This is an optional program that any factory that meets the conditions can request, for implementation in its facilities according to a contract with IRI and a specific mechanism at the latter; this would enable the factory to obtain IRI's conformity mark for its products, in an ongoing and continuous manner. IRI would oversee production through periodical analyses and inspections, before granting the factory certificates of conformity whether for export purposes or for ensuring the conformity of its products to national standards. This takes place in a routine manner, and also on demand, and its cost is factored in into that of the program.

### Merchants

There are goods that are subject to mandatory national standards. For this reason, importing such goods is subject to customs restrictions that stipulate their conformity to the mandatory national standards. This is verified by IRI prior to allowing these goods into domestic consumer markets.

Hence, the relation between the importers and merchants on one hand, and IRI on the other hand is constantly evolving. Efforts are underway, on a continuous basis, to facilitate trade exchange on one hand, and to verify the conformity of imported goods following a scientific method on the other hand.

Many merchants voluntarily head to IRI to request tests and analyses of their merchandise and products, in order to determine their conformity

with international standards in the case of export, or national standards in case of import, prior to shipping it from the country of origin.

### **Farmers**

IRI's laboratories continuously cooperate with farmers. In truth, many farms voluntarily head to IRI and request their products to be analyzed.

IRI provides analysis for farmers for the following products:

- Olive oil
- Honey
- Vegetables and fruits (pesticide residue)
- Irrigation water
- Meat and fish
- Other agro-food products.

### **Researchers and scientists**

Many researchers and scientists head to IRI to conduct tests and analyses necessary for their scientific research. Most of the time, their requests become applied research projects, as they are aware of IRI's capabilities in this area. This is not to mention the fact that IRI houses 14 laboratories spanning many complementary disciplines, in addition to the meteorology laboratory, the Lebanese Welding Centre, the Euro-Lebanese Centre for Industrial Modernization, the Lebanese Cleaner Production Centre, and the Centre for Innovation & Technology.

### **Consumers**

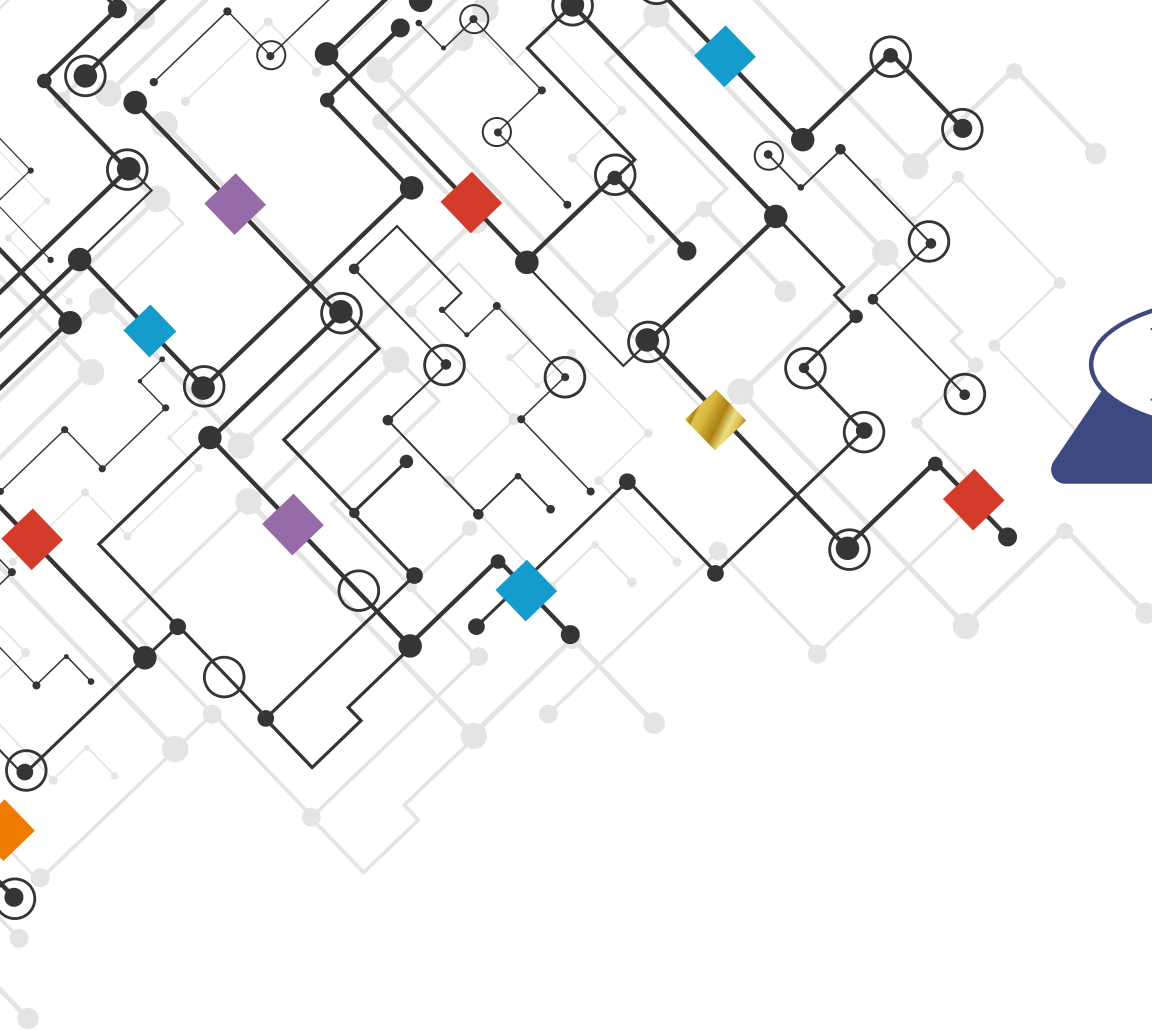
The relationship between consumers and IRI is either direct or indirect, through the civil organizations and associations concerned with consumer protection, the environment and other fields.

#### **Direct relationship**

Any citizen can go in person to IRI in order to test any product, substance or other items, which is what is often done by citizens to ascertain the safety of what they consume, be it drink, food, supplies, household electric appliances, building materials, petroleum products and other daily items.

#### **Indirect relationship**

Consumer protection associations and other civil organizations often head to IRI and request analyses and tests of an environmental or health safety nature. Cooperation with these organizations is done on a continuous basis by IRI, which meets all the former's requests in return for special fees that take into account their conditions in most cases. If these requests were not complimentary, then they would be symbolic, in a bid by IRI to support and encourage these groups to work for the public good.



# DEVELOPMENT OF HUMAN RESOURCES



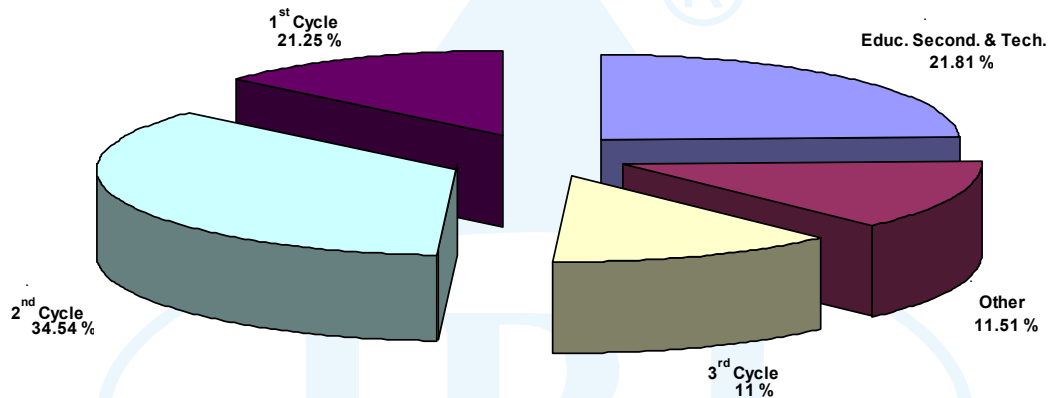
## DEVELOPMENT OF HUMAN RESOURCES

The number of IRI staff members amounted to 165 at the end of 2024; 66% are males, while 34% are females.

The average age is around 39 years.

They can be categorized according to the level of their education:

- 18 hold a 3rd Cycle
- 57 hold a 2nd Cycle
- 35 hold a 1st Cycle
- 36 are in their secondary and technical studies
- 19 are in other categories.

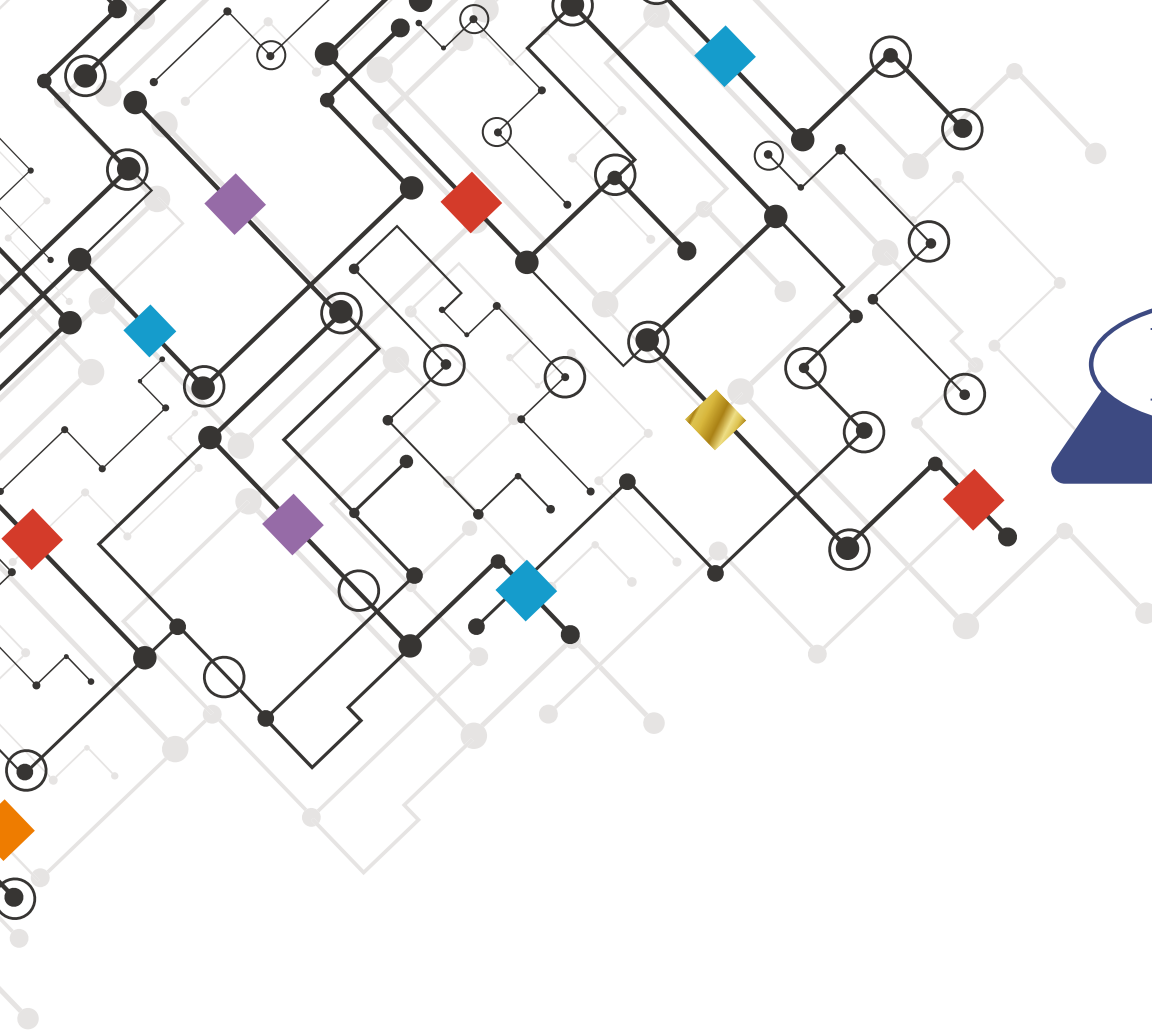


Elementary Levels	No.	%
3 <sup>rd</sup> Cycle	18	11
2 <sup>nd</sup> Cycle	57	34.54
1 <sup>st</sup> Cycle	35	21.25
Secondary Education & Tech	36	21.81
Other *	19	11.51

Average Age	Gender	
39 Years	66% Male	34% Female

(\*) other excluded

Average Age	Gender	
39 Years	65% Male	35% Female



# ON-GOING EMPLOYEE TRAINING

## International Training, Seminars & Workshops

#	Participant	Organizer	Object/Title	Date
1	Taher Wehbe Hachem El Ali	Arabic Atomic Energy Agency	Training on the “use of radioactive isotopes in detecting and identification of problems in industrial systems”	12-16/05/2024
2	Elias Maalouf	AIDSMO	Participating in meetings of ARAMET	19-21/05/2024
3	Raymonde Khazzaka Sahar Estephane	Technoline	LC-MS/MS Training	12-15/09/2024

## LIBNOR

#	Participant	Organizer	Object/Title	Date
1	Dany Frenn	TC 178 Lifts & Escalator Moving Walks	EN 81-85	25/06/2024
2	Amine Jbeily	TC 282 SC1	NL 819 Standard for water reuse in irrigation	11/03/2024 11/07/2024
3	Andrea Kahaleh Hiba Yaacoub	TC 216: Foot wear	ISO 10717 - ISO 10734 - ISO 10748 - ISO 10750 - ISO 10751	26/08/2019 11/06/2024
4	Elias Bechara	TC 207 Environmental Management	EN 16247-1/2/3	24/09/2024
5	Elias Bechara	TC 207 Environmental Management	NL ISO 14080 - NL ISO 14008	21/12/2024
6	Ahmad Habli	TC 199 Safety of Machinery	ISO 12100: 2010 ISO 13849-1/2	05/09/2024 19/12/2024

## Local Training, Seminars & Workshops

#	Participant	Organizer	Object/Title	Date
1	Thomas Homsy	IRI - Electrical Lab	Resistance to external forces	2024/02/07
2	Elie Dawaliby Youssef Andraos Sandra Sarkis Jeanette Frenn Dany Frenn Mohammad Ali Hajjar Mohammad Assaad Hajjar	IRI & ALMEE	Energy Management System ISO 50001-2018	2024/02/29-28

#	Participant	Organizer	Object/Title	Date
3	Thomas Sabbagh Hadi Al Aawar Gaby Baayno Hanna Francis Ahmad Habli Walid Chehade Khoder Fawaz Andre Abou Zeid Ahmad Wehbe	IRI & ALMEE	Professional Training on Solar PV Systems	05-06/03/2024
4	Rony Daccache	IRI	Certified Training for Solar PV Technicians	12-13/03/2024
5	Thomas Sabbagh Hanna Francis Tony Chammai Dany Frenn Jeanette Frenn Richard Skaff Georges Roumanos Amine Jbeily Petra Youssef Amany Gerges Carmen Ibrahim Ricardo Shaaya Manale Tabanji Joseph El Helou Tarek Hakim Rakan Btadine Hachem El Ali Myriam Maatouk Cendrella Tannous Maya Majdalany	IRI & National Institute of Vine & Wine	1st Lebanese Wine Science Colloquium 2024	20/03/2024
6	Ricardo Shaaya Chikri Massaad	IRI - Electrical Lab	Resistance to heat	21/03/2024
7	Mehdyne Habli Ricardo Shaaya Chikri Massaad	IRI - Electrical Lab	Lab Tests Training	03/04/2024
8	Tony Hayek	IRI - Metrology Lab	Calibration of Thermometer	27-31/05/2024
9	Thomas Homsy	IRI - Electrical Lab	Limits of Error due to variation of current & Meter Constant	03/06/2024

#	Participant	Organizer	Object/Title	Date
10	Ricardo Shaaya Chikri Massaad	IRI - Electrical Lab	Mechanical Tests	03/06/2024
11	Elie Dawaliby	IRI - Electrical Lab	Capacity Check and Vibration Test	22-24/07/2024
12	Ricardo Shaaya	IRI - Electrical Lab	Training in all tests	04-20/09/2024
13	Thomas Homsy Elie Dawaliby	IRI - Electrical Lab	IP test, First numeral, additional letter	17/09/2024
14	Ricardo Shaaya	IRI - Electrical Lab	Led Lamps	10/12/2024
15	Ahmad Wehbe	IRI - Electrical Lab	Performing the needle flame test	11/12/2024

## Local Meetings, Inaugurations & Exhibitions

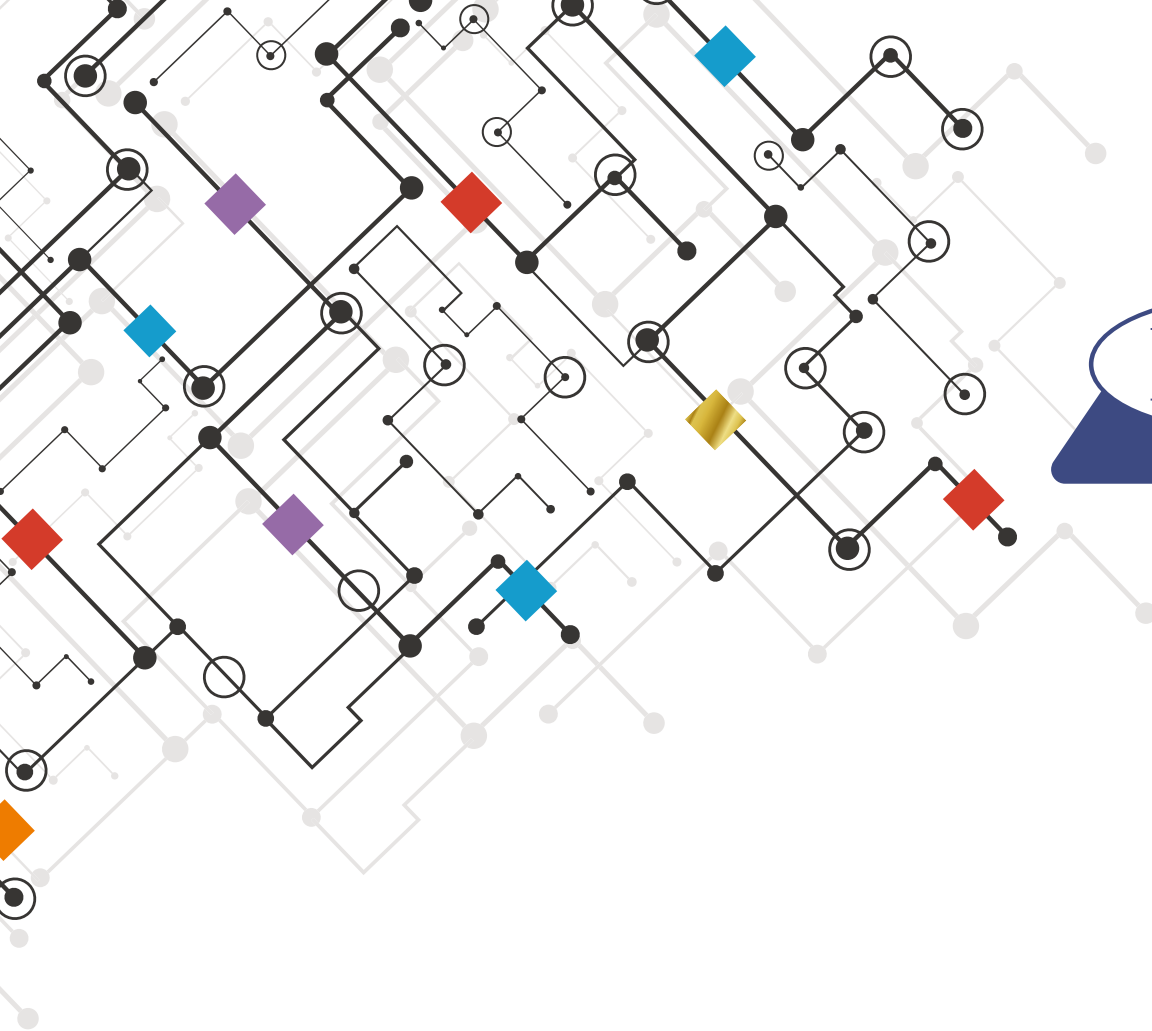
#	Participant	TC Number	Standard Title	Date
1	Imad Hage Chehadé	IFP Lebanon	Project Lebanon 2024	24-26/04/2024
	Mohamad Assaad Hajjar			
	Bilal Houssein			
	Ahmad Hassan			
	Elie Dawaliby			
	Chikri Massaad			
	Mark Tahchy			
	Sandra Sarkis			
	Siham Youssef			
	Tarek Hakim			
	Hachem El Ali			
	Carine Slaiby			
	Jeanette Frenn			
	Hanna Francis			
	Maya Majdalany			



## IRI Seminars / Conferences

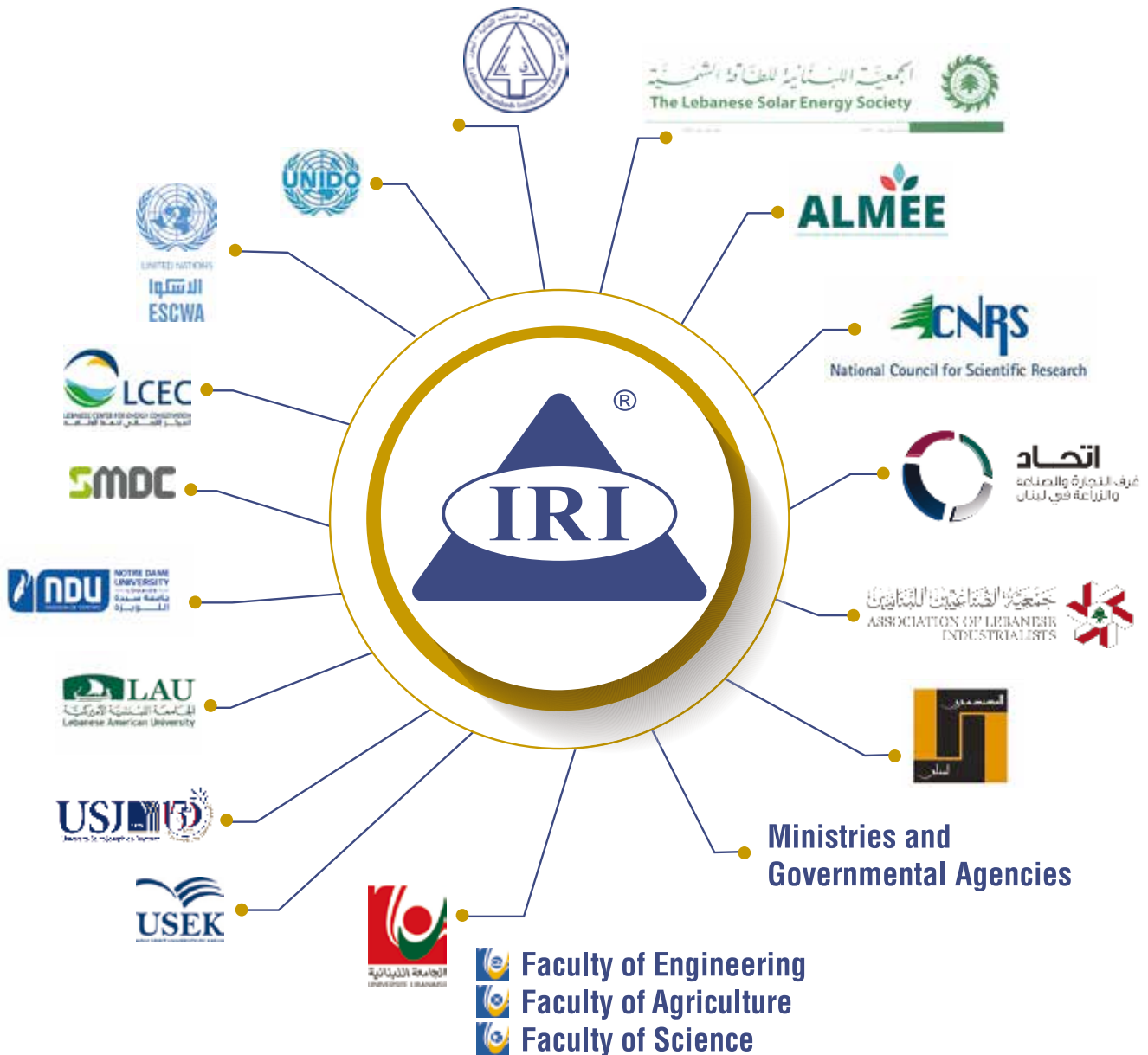
#	Participant	Organizer	Object/Title	Date
13	Bilal Houssein Ricardo Shaaya	ESCWA-GEIDCO	Exploring China's Electric Vehicle Market Enablers	30/01/2024
14	Ahmad Hassan Mohamad Assaad Hajjar	WEC-World Energy Council	Building A Better Tomorrow:	23/02/2024
15	Ricardo Shaaya Hanady El Khally Cendrella Tannous	UNIDO	Application for ISO/IEC 17025 for Physicochemical & Microbiological Lab	18- 19/03/2024
16	Bilal Houssein	BUILD_ME Project	Energy Performance Certificates for Buildings	20/03/2024
5	Ricardo Shaaya Cendrella Tannous	UNIDO	Guidelines for Auditing Management Systems	25/03/2024
6	Mohamad Assaad Hajjar Elias Bechara	Ministry of the Environment – Hanns Seidel Stiftung	What Management of Renewable Energy Violations?	27/03/2024
7	Selim Kfoury	The Federation of Chambers of Commerce, Industry & Agriculture in Lebanon	Signing ceremony for a MoU between the Ministry of Agriculture and the Federation	22/04/2024
8	Selim Kfoury	UNDP Ministry of Economy and Trade	The launch of the Digitization of the Consumer Protection Directorate	23/04/2024
9	Hanna Francis	Lab Manager	Elevate your lab: How to choose the right LIMS solution	24/04/2024
10	Sandra Sarkis Maya Majdalany	IFP Lebanon	Project Lebanon 2024	25/04/2024 26/04/2024
11	Ramzi Bhamdouni	LIRA Program	LIRA Capacity Building Ceremony	29/04/2024
12	Selim Kfoury Joseph Matta	Ministry of Industry The Pulse of Lebanon is its Industry Association of Lebanese Industrialists	Opening of the Industry Exposition in Lebanon	09/05/2024
13	Imad Hage Chehade Sandra Sarkis Mohammad Assaad Hajjar	LCEC	2nd National Workshop of the BUILD_ME Project	10/05/2024
14	Ahmad Hassan	LCEC	Cool Up Thematic Groups Meeting and the Advisory Committee Meeting	14/05/2024
15	Edgar Shaaya Joseph El Helou	Technoline	Metrology Day 2024	21- 22/05/2024
16	Amine Jbeily	Ministry of Economy and Trade	Advanced Stakeholder's Management Meeting - Wheat Supply Emergency Response Project	23/05/2024

#	Participant	Organizer	Object/Title	Date
17	Elias Melky Elias Bechara Dany Frenn Gilbert Fadel Jeanette Frenn Cindrella Tannous	TAIEX	TAIEX Workshop on Plastic Value Chains: Enhancing Quality Competitiveness and Sustainability in Recycling	01/07/2024
18	Raymonde Khazzaka Sahar Estephane Halim El Bayeh	Waters Inc.	Application Manager	02- 04/07/2024
19	Ahmad Hassan Mohammad Assaad Hajjar	LCEC	Efficient Cooling Systems	09- 10/07/2024
20	Mahmoud Amhaz	Faculty of Engineering – Lebanese University	Graduation Ceremony of Class of 2024-2023	24/07/2024
21	Halim El Bayeh	SCMP	Seminar “The Water Reality in Lebanon – Problems and Solutions”	31/07/2024
22	Imad Hage Chehade Mohammad Assaad Hajjar	LCEC	National Workshop to Discuss the first draft of the Third National Plan for Renewable Energy 2024-2030	28/08/2024
23	Bilal Houssein	AIDSMO	Safety of Children’s Toys technical require- ments	14/10/2024
24	Halim El Bayeh	AUB, Unicef, Iodine Global Network, Ministry of Economy and Trade, Ministry of Public Health	Universal Salt Iodization	02/12/2024
25	Joseph El Helou	AIDSMO	Legal metrology and measuring instruments in the field of safety, environment and health	02/12/2024
26	Christopher Roukoz Ricardo Shaaya Mohamad Ali Hajjar Ahmad Habli Dany Frenn	LIBNOR	The new lift decree 13953	09/12/2024
27	Joseph El Helou Edgar Shaaya	AIDSMO	Fifth meeting of the Temperature Committee	14/11/2024
			Fourth meeting of the Length and Dimen- sions Committee	10/12/2024
			Fifth meeting of the Electricity and Magnet- ism Committee	09/12/2024
			Fifth meeting of the Power and Energy Com- mittee	11/12/2024
28	Tony El Hayek Joseph El Helou	AIDSMO	Calibration of liquid in glass thermometer	05/12/2024
			Calibration of medical thermometer	05/12/2024
			Comparative calibration of Pressure	19/12/2024

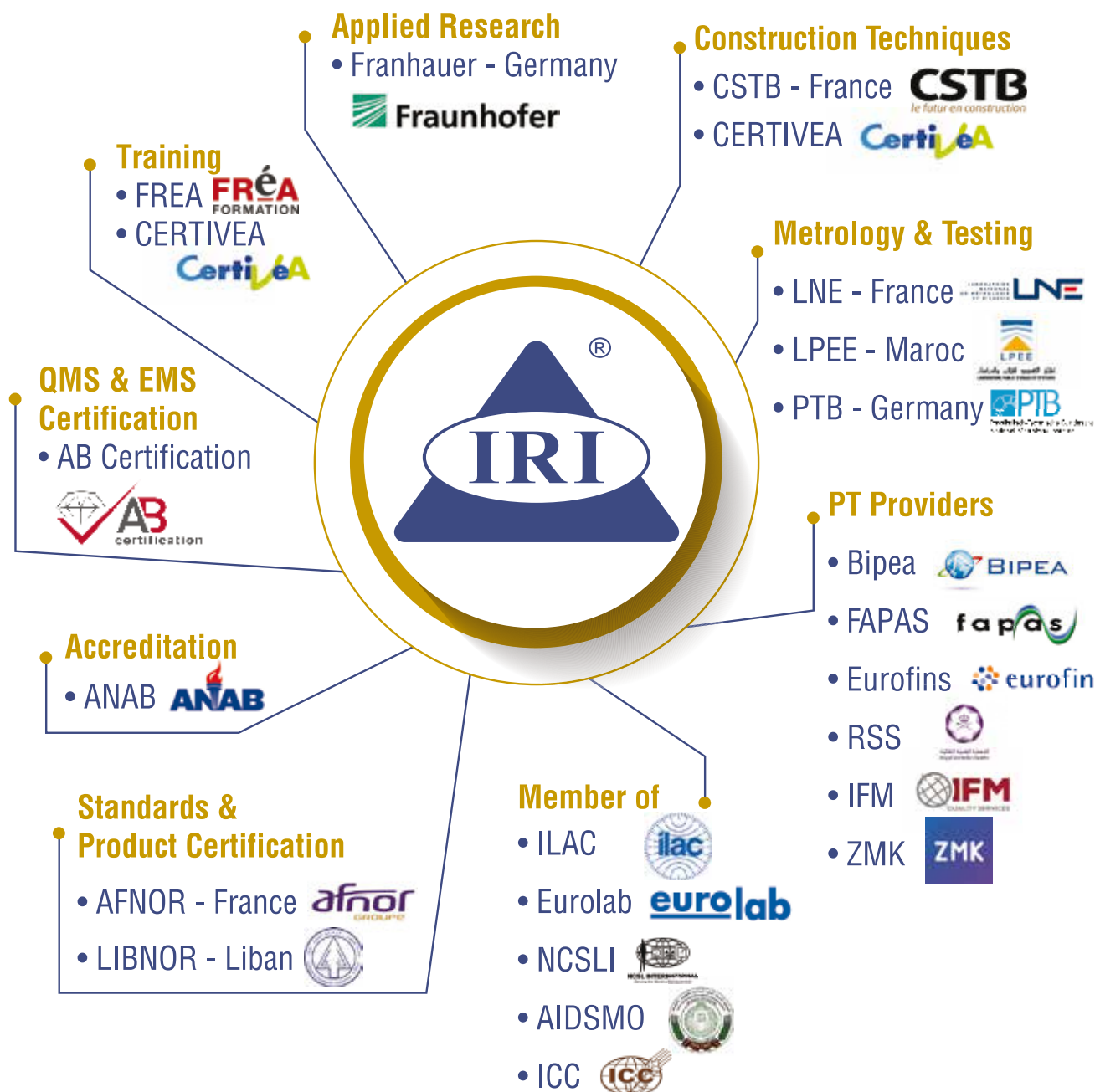


# INTERNATIONAL AND LOCAL PARTNERSHIPS

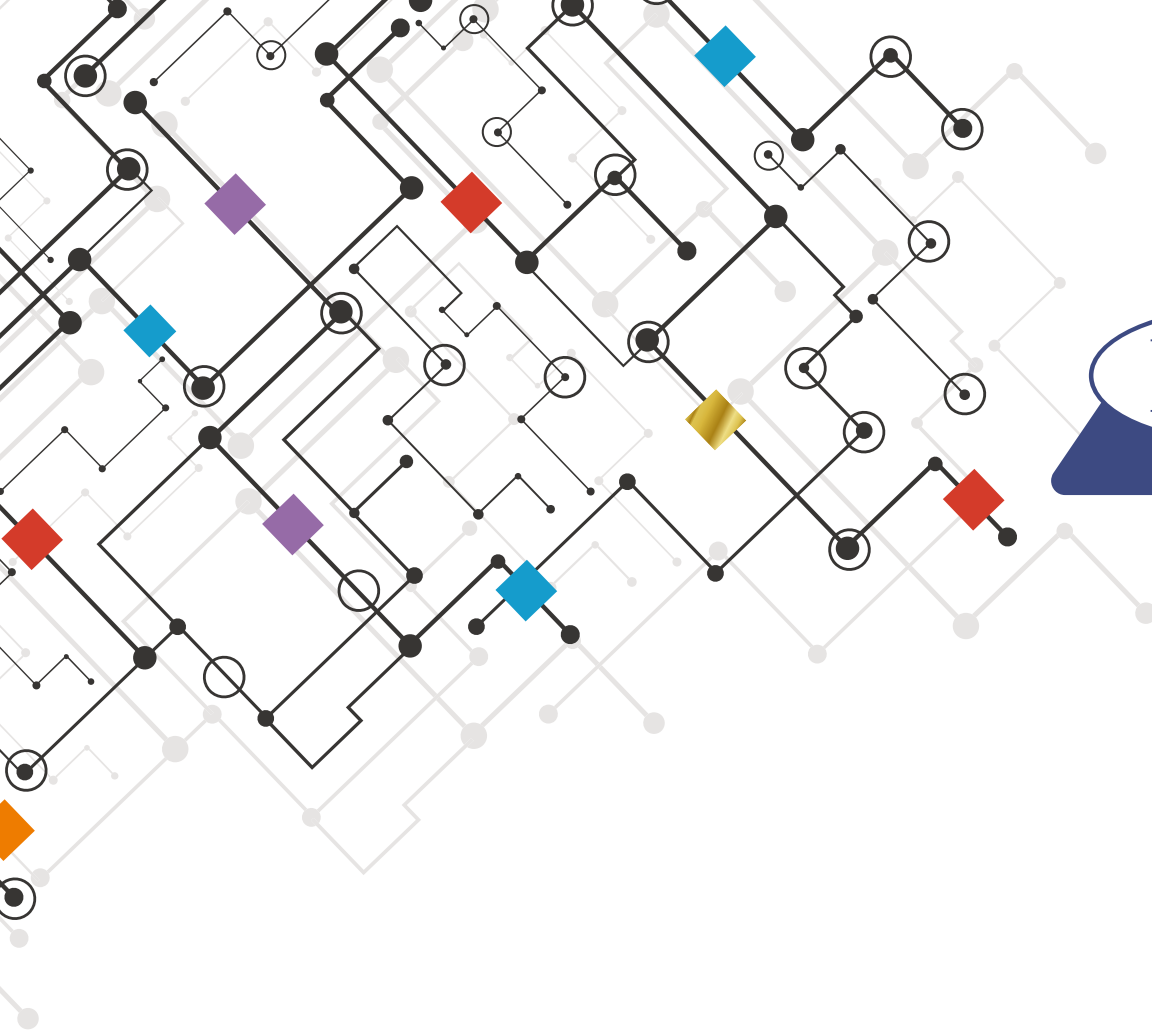
# LOCAL PARTNERS



# INTERNATIONAL PARTNERS







# DECREES, LAWS AND DECISIONS

## DECREES

Decree		Official Gazette		Subject	Authority
No.	Date	Issue	Date		
12962	12/02/2024	7	15/02/2024	Adjustment of the maximum earnings subject to deductions for the sickness and maternity insurance branch	Presidency of the Council of Ministers
12965	12/02/2024	7	15/02/2024	Modification of decree 7832, dated 4/6/2021, related to the subscription fees for both the printed and electronic versions of the Official Gazette, and advertisement publication fees	Presidency of the Council of Ministers
12966	12/02/2024	7	15/02/2024	Amendment to the daily transportation allowance, as specified in Decree No. 11224, dated 18/4/2023 and referenced in Article 1 of Law No. 217 dated 30/3/2012	Presidency of the Council of Ministers
13225	05/04/2024	16	18/04/2024	Granting temporary education allowances to employees and workers covered by the Labor Law	Presidency of the Council of Ministers
13907	12/09/2024	38	19/09/2024	Determination of the administrative conditions, standards, and technical specifications required for vehicles manufactured in Lebanon through conversion and assembly	Presidency of the Council of Ministers
13953	12/09/2024	38	19/09/2024	Granting legal enforcement status to national standards specifications related to elevators and escalators	Presidency of the Council of Ministers
13954	12/09/2024	38	19/09/2024	Granting legal enforcement status to national standards specifications related to LED lamps	Presidency of the Council of Ministers
13955	12/09/2024	38	19/09/2024	Granting legal enforcement status to national standards specifications related to gasoline and diesel	Presidency of the Council of Ministers
14459	18/12/2024	52	26/12/2024	Granting legal enforcement status to national standards specifications related to air quality	Presidency of the Council of Ministers
14478	18/12/2024	52	26/12/2024	Granting legal enforcement status to national standards specifications related to welding works	Presidency of the Council of Ministers
14479	18/12/2024	52	26/12/2024	Granting legal enforcement status to national standards specifications related to glass used in buildings and structures	Presidency of the Council of Ministers

Decree		Official Gazette		Subject	Authority
No.	Date	Issue	Date		
14503	18/12/2024	52	26/12/2024	Amendment to Article 15 of Decree 8018 dated 12/6/2002 on procedures, conditions, and licensing fees for establishing and operating industrial institutions	Presidency of the Council of Ministers

## DECISIONS

Decision		Official Gazette		Subject	Authority
No.	Date	Issue	Date		
9/1	31/01/2024	8	22/02/2024	traceability, quality control, and periodic laboratory testing for food manufacturing plants	Ministry of Industry
19/1	29/02/2024	11	14/03/2024	appointing a Government Commissioner to the Lebanese Accreditation Council (COLIBAC)	Ministry of Industry
24/1	18/03/2024	14	04/04/2024	appointing a Government Commissioner to the Lebanese Accreditation Council (COLIBAC)	Ministry of Industry
24/1	18/03/2024	13	28/03/2024	minimum standards and conditions for waste collection and transportation	Ministry of the Environment
25/1	18/03/2024	13	28/03/2024	minimum standards and conditions for mechanical sorting	Ministry of the Environment
26/1	18/03/2024	13	28/03/2024	minimum standards and conditions for composting and biological decomposition	Ministry of the Environment
27/1	18/03/2024	13	28/03/2024	minimum standards and conditions for waste-to-fuel production	Ministry of the Environment
28/1	18/03/2024	13	28/03/2024	minimum standards and conditions for thermal decomposition	Ministry of the Environment
29/1	18/03/2024	13	28/03/2024	minimum standards and conditions for final disposal of solid waste	Ministry of the Environment
1/ 30	18/03/2024	13	28/03/2024	technical specifications for each type of sanitary landfill	Ministry of the Environment
1/ 35	18/03/2024	13	28/03/2024	Definition of the procedures and principles for implementing Chapter II of Title III of the decree regarding the management of hazardous waste management (No. 5606 dated 11/9/2019)	Ministry of the Environment

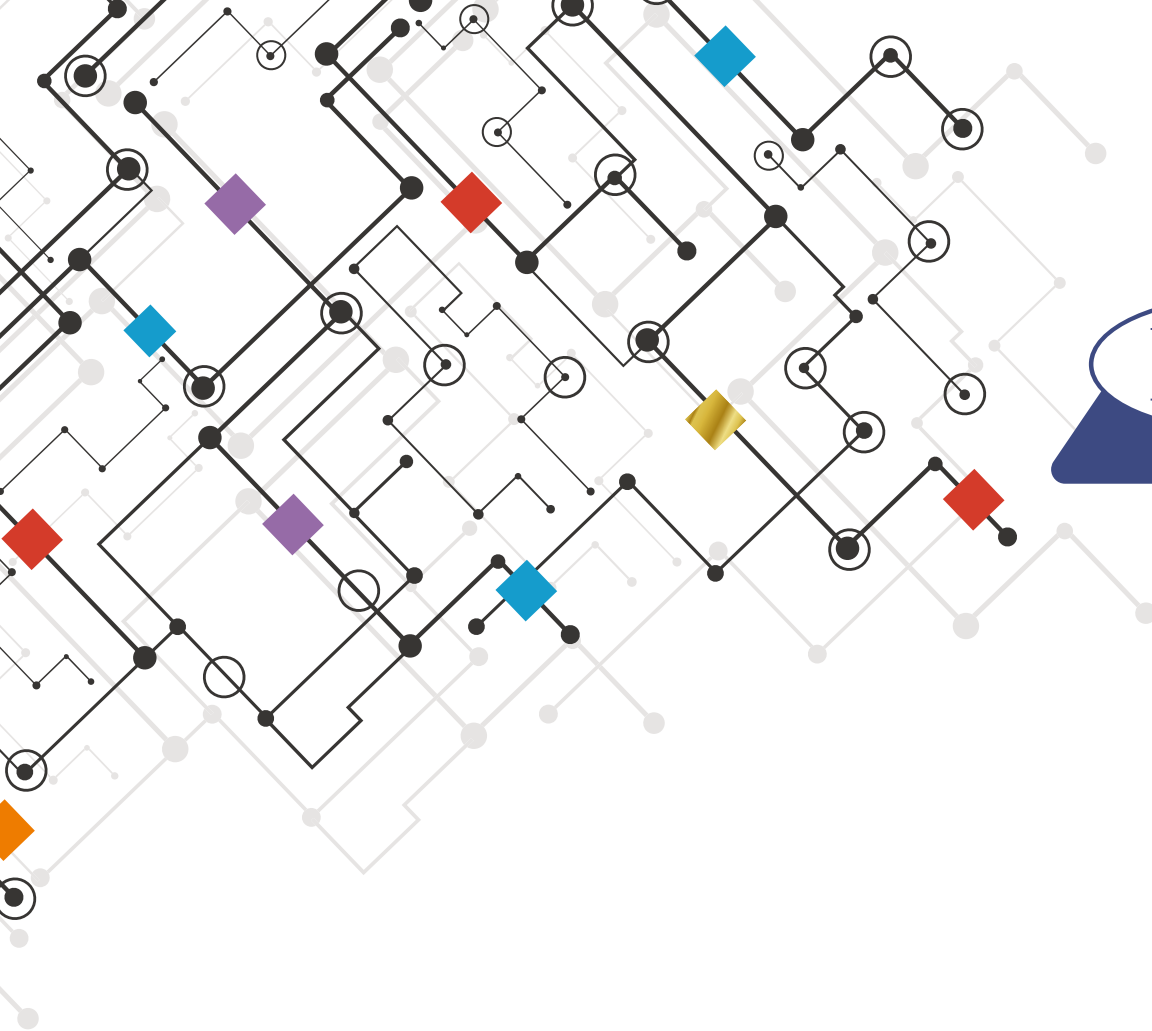
Decision		Official Gazette		Subject	Authority
No.	Date	Issue	Date		
29/1	04/04/2024	16	18/04/2024	Delegate the Director General of Industry to sign industrial certificates	Ministry of Industry
378/1	17/04/2024	20	16/05/2024	amendment to the table attached to Decision No. 48/1 dated 30/6/2022	Ministry of Industry
1/2024	21/07/2024	27	04/07/2024	standards and licensing mechanisms for the rehabilitation of cement, lime, and gypsum quarries	Ministry of the Environment
99/1	01/07/2024	27	04/04/2024	environmental monitoring mechanisms for the cement industry	Ministry of the Environment
198	01/08/2024	32	08/08/2024	Destruction and replacement of metal gas cylinders (butane/propane) in the local market that have exceeded seven years from their manufacturing date	Ministry of Energy and Water
69/1	25/07/2024	33	15/08/2024	Mandatory display of investment license number and date on nationally manufactured products	Ministry of Industry
378/1/2024	05/08/2024	33	15/08/2024	amendment to Decision No. 884/1 dated 16/11/2017 (conditions required for imported grains and feed materials)	Ministry of Industry
213	12/08/2024	34	22/08/2024	amendment to Decision No. 198 dated 1/08/2024 regarding destroying and replacing metal gas cylinders (butane/propane) on the local market that have exceeded seven years from their manufacturing date	Ministry of Energy and Water
134/1	02/09/2024	37	12/09/2024	technical standards for the management and disposal of expired liquid pharmaceuticals and medical substances used in human and veterinary applications, classified as non-hazardous	Ministry of the Environment
31/1	17/04/2024	41	10/10/2024	Modification of table attached to Decision 48/1 dated 30/6/2022	Ministry of Industry
77/1	17/09/2024	41	10/10/2024	Cancelling Decision no. 31/1 dated 17/4/2024 and attached table in full	Ministry of Industry
80/1	01/10/2024	42	17/10/2024	Cancelling Decisions 16/1 dated 2022, 20/1 dated 2022, 48/1 dated 2022, 31/1 dated 2024, 77/1 dated 2024 and exempting all materials listed in the attached tables from the requirement to obtain an industrial license issued by the Ministry of Industry and signed by the Minister of Industry	Ministry of Industry

**CIRCULARS**

Number	Date of signature	Subject	Authority
4/1	01/08/2024	Abiding by environmental regulations for the operation and investment of electric generators	Ministry of the Environment







# COMMUNICATION & MEDIA

## 1- Inauguration of the Pharmaceutical Laboratory 05/08/2024

[illegible][illegible]

ميكاتي يفتح مختبر التحليل الصيدلانية في معهد البحوث الصناعية

[illegible]

## 2- First Lebanese Forum for Wine Science 21/03/2024

# الشرق

الجمعة 22 آذار / العدد 22348

## المنتدى اللبناني الأول لعلوم النبيذ بالتعاون مع معهد البحوث الصناعية



من الملتقى

ما يستوجب حياته، وأكد على الدعم المادي لهذا القطاع، وتحت ترعته ذات من خلال مذكرة تعاون بين معهد البحوث الصناعية والمعهد الوطني للكرمة والنبيذ. لم تحدث طفرات على تاريخ النبيذ وعلى قيمته الاقتصادية وخضعت قطاع النبيذ اللبناني الذي يمثل نحو 10% من الناتج المحلي الإجمالي لبلدنا إلى أزمة اقتصادية حادة منذ بداية العام 2023. لا سيما وأن معدل صادرات النبيذ ارتفع بنسبة 30% في ظل الأزمة متصدرة جميع القطاعات وذلك بمجهود المزارعين والمصنّعين ما يدل على قدرة اللبناني على تحويل الأزمة إلى فرصة. فالأزمة الاقتصادية انعكست على جميع القطاعات وحال الوقت للانطلاق إلى الاقتصاد المتفتح. وختم بالمثلقات التي في الاتحاد لواء، داعياً إلى تضامن جميع الجهود. واختتم لواء الزراعة مستعرة بالتسويق للنبيذ اللبناني في ظل الأزمة الاقتصادية. كما تطرق إلى التنسيق للتواصل بين الوزارات المعنية بما فيه صالح قطاع الكرم والنبيذ اللبناني ولوجه إلى رئيس مجلس إدارة المعهد مذكراً بالمسؤولية الكبيرة على عاتق المعهد في مواكبة القطاع. مؤكداً دعم وزارات الزراعة والصناعة والاقتصاد والتجارة. وينتهي المنتدى بجلسته ختامية وتعرض خلالها التوصيات التي يتم التوصل إليها ثم يكتمل المحاضرون ومديره والجلسات والمقنطرون.

نظم المعهد الوطني للكرمة والنبيذ المؤلف بموجوب المرسوم رقم 5638 تاريخ 19-9-2019 وبالتعاون مع معهد البحوث الصناعية، منتدى علمياً بعنوان "المنتدى اللبناني الأول لعلوم النبيذ" حيث شارك في الجلسة الرسمية كل من مدير عام الزراعة المهندس نوري لحد ومدير عام الاقتصاد والتجارة الدكتور محمد بو عيود ومدير عام الصناعة بالوكالة المهندس شاتال غزل. إضافة إلى مدير عام معهد البحوث الصناعية الدكتور بشام الغزل. ورئيس مجلس إدارة المعهد الوطني للكرمة والنبيذ السيد طاهر شلوي. كما شارك في المنتدى أعضاء مجلس إدارة المعهد من القطاعين العام والخاص وممثلون من مختلف المناطق اللبنانية والجامعات ودور البحث العلمي والهيئات القطاعية والصناعة والزراعة وجمعية الصناعيين وموظفون من الإدارات العامة والمؤسسات وطلاب الجامعات. وتضمن المنتدى جلسة رسمية وثلاثة محاور علمية: 1- أبحاث حول أصناف النبيذ، 2- إنتاج النبيذ في الشبكات العنقودية، 3- التقنيات الحديثة في صناعة النبيذ. قدم المحاضرون الوطنيون والدوليون في المجالس العلمية الثلاثة المعلومات المتوفرة والثابتة عن دراسات شاركوا فيها حول المواضيع الواردة وفحص المجالس العلمية والتوصيات التي تم التوصل إليها في كل منها. أما الجلسة الرسمية فاستهلها شلوي بتناول رؤية المعهد والاستراتيجية التي يعمل بموجبها عازماً ما قام به مجلس إدارة حتى الآن وما ينوي القيام به قبل نهاية العام 2024. كما سيعمل على تنفيذ المخطط الزراعي بالتعاون مع مديرية الدراسات والتسويق في وزارة الزراعة وأعداد للحداء الوطنيون بالتأنيذ ومكافحة المهاد كما فيه دير القطاع.

## المركزية



### المنتدى اللبناني الأول لعلوم النبيذ

المركزية نظم المعهد الوطني للكرمة والنبيذ المؤلف بموجوب المرسوم رقم 5638 تاريخ 19-9-2019 وبالتعاون مع معهد البحوث الصناعية، منتدى علمياً بعنوان "المنتدى اللبناني الأول لعلوم النبيذ" حيث شارك في الجلسة الرسمية كل من مدير عام الزراعة المهندس نوري لحد ومدير عام الاقتصاد والتجارة الدكتور محمد بو عيود ومدير عام الصناعة بالوكالة المهندس شاتال غزل. إضافة إلى مدير عام معهد البحوث الصناعية الدكتور بشام الغزل. ورئيس مجلس إدارة المعهد الوطني للكرمة والنبيذ السيد طاهر شلوي. كما شارك في المنتدى أعضاء مجلس إدارة المعهد من القطاعين العام والخاص وممثلون من مختلف المناطق اللبنانية والجامعات ودور البحث العلمي والهيئات القطاعية والصناعة والزراعة وجمعية الصناعيين وموظفون من الإدارات العامة والمؤسسات وطلاب الجامعات.

تضمن المنتدى جلسة رسمية وثلاثة محاور علمية: 1- أبحاث حول أصناف النبيذ، 2- إنتاج النبيذ في الشبكات العنقودية، 3- التقنيات الحديثة في صناعة النبيذ.

قدم المحاضرون الوطنيون والدوليون في المجالس العلمية الثلاثة المعلومات المتوفرة والثابتة عن دراسات شاركوا فيها حول المواضيع الواردة وفحص المجالس العلمية والتوصيات التي تم التوصل إليها في كل منها.

أما الجلسة الرسمية فاستهلها شلوي بتناول رؤية المعهد والاستراتيجية التي يعمل بموجبها عازماً ما قام به مجلس إدارة حتى الآن وما ينوي القيام به قبل نهاية العام 2024. كما سيعمل على تنفيذ المخطط الزراعي بالتعاون مع مديرية الدراسات والتسويق في وزارة الزراعة وأعداد للحداء الوطنيون بالتأنيذ ومكافحة المهاد كما فيه دير القطاع.

من جهة، أكد الغزل أهمية منتد النبيذ اللبناني الذي يجمع العلم والمعرفة والدور وتتوارف فيه مجموعات للتعاون الزراعي والصناعي، ويشكل لفتاً في فهمه مصداقه في الأعلى في لبنان بما يستوجب حمايته وأكد على الدعم المادي لهذا القطاع ونقلت لواءة لحد من خلال مذكرة تعاون بين معهد البحوث الصناعية والمعهد الوطني للكرمة والنبيذ.

لم تحدث طفرات على تاريخ النبيذ وعلى قيمته الاقتصادية وخضعت قطاع النبيذ اللبناني الذي يمثل نحو 10% من الناتج المحلي الإجمالي لبلدنا إلى أزمة اقتصادية حادة منذ بداية العام 2023. لا سيما وأن معدل صادرات النبيذ ارتفع بنسبة 30% في ظل الأزمة متصدرة جميع القطاعات وذلك بمجهود المزارعين والمصنّعين ما يدل على قدرة اللبناني على تحويل الأزمة إلى فرصة. فالأزمة الاقتصادية انعكست على جميع القطاعات وحال الوقت للانطلاق إلى الاقتصاد المتفتح. وختم بالمثلقات التي في الاتحاد لواء، داعياً إلى تضامن جميع الجهود. واختتم لواء الزراعة مستعرة بالتسويق للنبيذ اللبناني في ظل الأزمة الاقتصادية. كما تطرق إلى التنسيق للتواصل بين الوزارات المعنية بما فيه صالح قطاع الكرم والنبيذ اللبناني ولوجه إلى رئيس مجلس إدارة المعهد مذكراً بالمسؤولية الكبيرة على عاتق المعهد في مواكبة القطاع. مؤكداً دعم وزارات الزراعة والصناعة والاقتصاد والتجارة. وينتهي المنتدى بجلسته ختامية وتعرض خلالها التوصيات التي يتم التوصل إليها ثم يكتمل المحاضرون ومديره والجلسات والمقنطرون.

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أما الجلسة الرسمية فاستهلها شلوي بتناول رؤية المعهد والاستراتيجية التي يعمل بموجبها عازماً ما قام به مجلس إدارة حتى الآن وما ينوي القيام به قبل نهاية العام 2024. كما سيعمل على تنفيذ المخطط الزراعي بالتعاون مع مديرية الدراسات والتسويق في وزارة الزراعة وأعداد للحداء الوطنيون بالتأنيذ ومكافحة المهاد كما فيه دير القطاع.

من جهة، أكد الغزل أهمية منتد النبيذ اللبناني الذي يجمع العلم والمعرفة والدور وتتوارف فيه مجموعات للتعاون الزراعي والصناعي، ويشكل لفتاً في فهمه مصداقه في الأعلى في لبنان بما يستوجب حمايته وأكد على الدعم المادي لهذا القطاع ونقلت لواءة لحد من خلال مذكرة تعاون بين معهد البحوث الصناعية والمعهد الوطني للكرمة والنبيذ.

لم تحدث طفرات على تاريخ النبيذ وعلى قيمته الاقتصادية وخضعت قطاع النبيذ اللبناني الذي يمثل نحو 10% من الناتج المحلي الإجمالي لبلدنا إلى أزمة اقتصادية حادة منذ بداية العام 2023. لا سيما وأن معدل صادرات النبيذ ارتفع بنسبة 30% في ظل الأزمة متصدرة جميع القطاعات وذلك بمجهود المزارعين والمصنّعين ما يدل على قدرة اللبناني على تحويل الأزمة إلى فرصة. فالأزمة الاقتصادية انعكست على جميع القطاعات وحال الوقت للانطلاق إلى الاقتصاد المتفتح. وختم بالمثلقات التي في الاتحاد لواء، داعياً إلى تضامن جميع الجهود. واختتم لواء الزراعة مستعرة بالتسويق للنبيذ اللبناني في ظل الأزمة الاقتصادية. كما تطرق إلى التنسيق للتواصل بين الوزارات المعنية بما فيه صالح قطاع الكرم والنبيذ اللبناني ولوجه إلى رئيس مجلس إدارة المعهد مذكراً بالمسؤولية الكبيرة على عاتق المعهد في مواكبة القطاع. مؤكداً دعم وزارات الزراعة والصناعة والاقتصاد والتجارة. وينتهي المنتدى بجلسته ختامية وتعرض خلالها التوصيات التي يتم التوصل إليها ثم يكتمل المحاضرون ومديره والجلسات والمقنطرون.



### 3- Visit by H.E. Minister of Environment, and H.E. Minister of Industry to the Industrial Research Institute 11/07/2024



العدد 3893 | الأربعاء 17 تموز 2024

## لقاء صناعي بيئي في معهد البحوث

المقدمة دولياً منذ العام 2008، بالإضافة إلى الاعتماد الحائز عليه المعهد في عمليات الكشف والإنتاجية.

كما جرى التطرق إلى الفرص رقم 9911 بوضع آليات بيئية لمصانع التزلية وآلية ترخيص إعادة تأهيل مصانع التزلية والكس والخصص والدور الأساسي لمعهد البحوث الصناعية في أية التنمية إبتدائياً من مرحلته العلمية والتطبيقية.

وفي الختام أيضاً على تشكيل لجنة تقنية مشتركة للتعاون.

بمبادرة التفاهيم المبرمة بين وزارة البيئة والمعهد وتأكيد وزيري الصناعة والبيئة على ضرورة الاستفادة من الإمكانيات المتطورة والكثيرة في المعهد عبر مراكز التخصصية ومختبراته 13.8 المتخصصة التي تغطي القطاعات الاستراتيجية المختلفة وهي مختبرات الهندسة المدنية، الكهروميكانيكا، الميكانيكا، الكيمياء، والكيمياء الحيوية، الميكانيكا، والأجهزة الميكانيكية الجيوب والديناميكية، والهندسة المدنية، والهندسة الكيميائية، والهندسة البيئية.

تم البحث في سبل تعزيز التعاون بين الوزارتين ومعهد البحوث الصناعية، وتطوير

فقد في مقر معهد البحوث الصناعية اجتماع صناعي - بيئي، في حضور وزير الصناعة في حكومة تصريف الأعمال النائب جورج بوشكيان، ووزير البيئة في حكومة تصريف الأعمال خاسر ياسين، والمدير العام للمعهد الدكتور ناصر ياسين، والمدير العام للمعهد العالي للصناعة بسام الفرن، والمدير العام للجامعة اللبنانية المهندس لانا درغام، وممثلين عن وزارة البيئة الدكتور حسن دهبني، وفريق عمل من كوادر المعهد ووزارة البيئة.

تم البحث في سبل تعزيز التعاون بين الوزارتين ومعهد البحوث الصناعية، وتطوير مختبر مذكورة التفاهيم المبرمة بين وزارة البيئة والمعهد، وتأكيد وزيري الصناعة والبيئة على " ضرورة الاستفادة من الإمكانيات المتطورة والكثيرة في المعهد عبر مراكز التخصصية ومختبراته الأربعة عشر المتكاملة التي تغطي القطاعات الاستراتيجية المختلفة، وهي مختبرات الهندسة المدنية، الكهروميكانيكا، الميكانيكا، الكيمياء، والكيمياء الحيوية، الميكانيكا، والأجهزة الميكانيكية الجيوب والديناميكية، والهندسة المدنية، والهندسة الكيميائية، والهندسة البيئية.

والجدير بالذكر، المستشفيات المتخصصة، الدهانات، التعملة والتعليق الشمسية، ومصنعة المعايير وغيرها الودية المعتمدة دولياً منذ العام ٢٠٠٤، بالإضافة إلى الاعتماد الحائز عليه المعهد في عمليات الكشف والإنتاجية.

كما جرى التطرق إلى الفرص رقم 1/٩٩ ورسم 1/٣٠-٢٤ تاريخ 1/٦/٢٠٢٤ المعنيين بوضع آليات بيئية لمصانع التزلية وآلية ترخيص إعادة تأهيل مصانع التزلية والكس والخصص والدور الأساسي لمعهد البحوث الصناعية في أية التسيب إبتدائياً من مرحلته العلمية والتطبيقية.

تم الاتفاق أيضاً على تشكيل لجنة تقنية مشتركة للتعاون.



معهد البحوث الصناعية يرحب اجتماعاً صناعياً بيئياً  
بوشكيان وياسين : لتعزيز التعاون ضمن إمكانيات المعهد ومختبراته المتطورة  
16.07.2024



وطنية - تُقد في مقر معهد البحوث الصناعية اجتماع صناعي - بيئي، في حضور وزير الصناعة في حكومة تصريف الأعمال النائب جورج بوشكيان، ووزير البيئة في حكومة تصريف الأعمال الدكتور ناصر ياسين، والمدير العام لمعهد البحوث الصناعية الدكتور ناصر ياسين، والمدير العام للمعهد العالي للصناعة بسام الفرن، والمدير العام للجامعة اللبنانية المهندس لانا درغام، وممثلين عن وزارة البيئة الدكتور حسن دهبني، وفريق عمل من كوادر المعهد ووزارة البيئة.

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تم الاتفاق أيضاً على تشكيل لجنة تقنية مشتركة للتعاون.

### 4- MTV News Bulletin: The Industrial Sector Prospers 17/02/2024





د. بسام الفرن | مدير معهد البحوث الصناعية

إ يجب ان يكون هناك تكامل بين القطاعين الصناعي والزراعي

## 5- Emergency Plan for the Industrial Research Institute 03/10/2024



**خطة طوارئ معهد البحوث الصناعية**

أطلع المدير العام لمعهد البحوث الصناعية بسام الفرّان وزير الصناعة في حكومة تصريف الأعمال النائب جورج بوشكيان على خطة الطوارئ التي بدأ المعهد تنفيذها «نظراً للأوضاع الأمنية الراهنة». بهدف إنجاز أعمال المعهد المقارنة المشمولة بالتراسيم الإلزامية والمتعلقة بعملية الاستيراد والتصدير، وبالأخص منها المستلزمات والأجهزة الطبية والعقومات والمواد الغذائية للتأكد من مطابقتها للمواصفات.

تتضمن الخطة أيضاً إجراءات استثنائية خاصة بالملفات الجمركية والتي يمكن متابعتها عن بعد وغير

مكتاب المعهد في غرفة التجارة والصناعة والزراعة في بيروت. كما أن أبواب المعهد ومختبراته في الحدث ما زالت مفتوحة مع التأكيد على استمرارية الخدمات القائمة

-تسجيل ومتابعة الملفات متاحة عن بعد (Online).

-إمكانية الدفع متاحة عبر Online أو عبر OMT.

-إمكانية سحب الشهادات والمخرجات من مكاتب المعهد في غرفة التجارة والصناعة والزراعة في بيروت.

-إضافة رمز إجابة سريعة (QR Code) على الشهادات للتحقق من مصداقية الشهادة.



**خطة طوارئ معهد البحوث الصناعية**

أطلع المدير العام لمعهد البحوث الصناعية الدكتور بسام الفرّان وزير الصناعة في حكومة تصريف الأعمال النائب جورج بوشكيان على خطة الطوارئ التي بدأ المعهد تنفيذها «نظراً للأوضاع الأمنية الراهنة». بهدف إنجاز أعمال المعهد المقارنة المشمولة بالتراسيم الإلزامية والمتعلقة بعملية الاستيراد والتصدير، وبالأخص منها المستلزمات والأجهزة الطبية والعقومات والمواد الغذائية للتأكد من مطابقتها للمواصفات.

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-إضافة رمز إجابة سريعة (QR Code) على الشهادات للتحقق من مصداقية الشهادة.

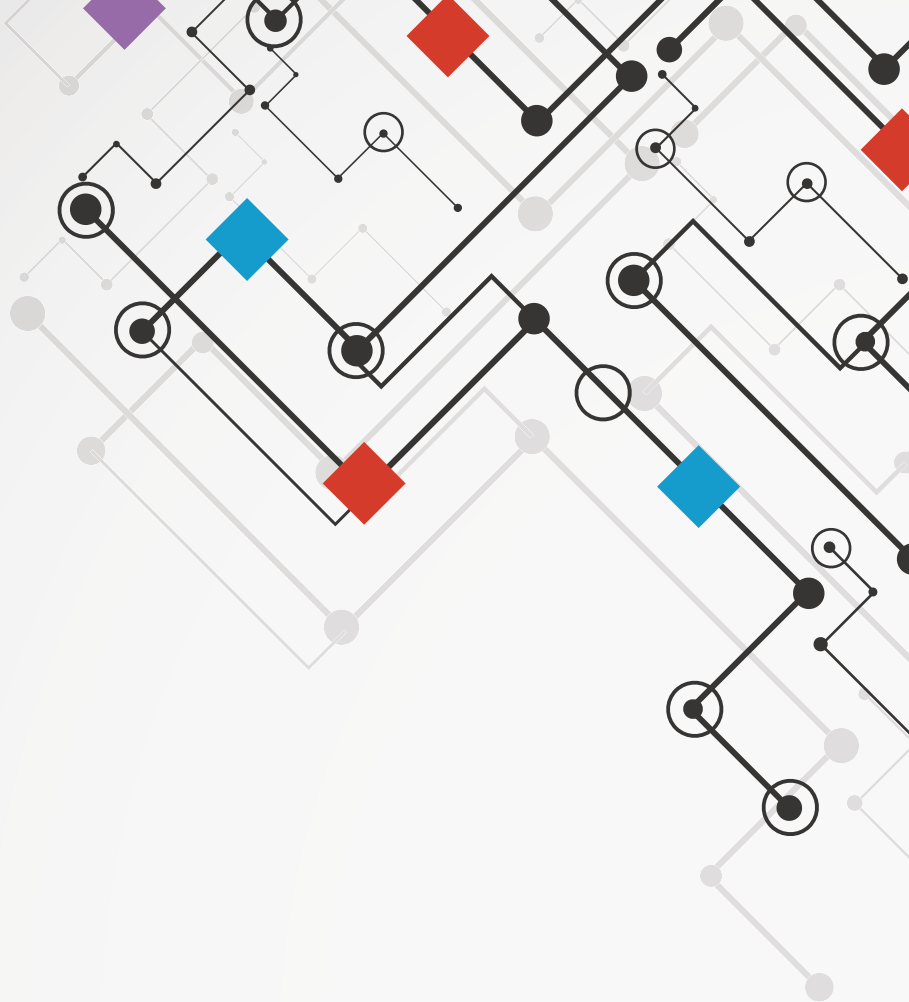
**6- Appearance of Dr. Joseph Matta, Director of Applied Research and Testing, on the program “Sar El Waet” – MTV, discussing the role of the Industrial Research Institute in tracking goods to protect Lebanese consumers (11/03/2024).**



**7- Project Lebanon 2024 (24/04/2024) Interview with the Technology and Development Director, Dr Imad Hage Chehadeh**







IRI Premises, Lebanese University Campus, Hadat, Baabda, Lebanon  
P.O.Box 1107 2806 Beirut  
Tel/Fax +961 5 467831-7    Mobile +961 3 286340  
[www.iri.org.lb](http://www.iri.org.lb)

