

# ANNUAL REPORT 2018



معهد البحوث الصناعية  
INDUSTRIAL RESEARCH INSTITUTE  
INSTITUT DE RECHERCHE INDUSTRIELLE

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## 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 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 Hadath, 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.

## REALIGNMENT OF PATHS EVOLVING THE TRUST BUILDING PROCESS BINDING NATIONAL EFFORT...

*Director General of the Industrial Research Institute*  
**Dr. Bassam Frenn**



This year, I call upon all those governmental caretakers and politically responsible parties and individuals, beseeching them to join forces and intensify all required actions for the sake of saving and reuniting the country for the welfare of all the Lebanese citizens, ensuring continuity in correction procedures combating in justice paths and enforcing justice for the sake of implementing equality and overruling individualistic actions for the benefit of communication with each other, listening to what the others have to say. Such procedures build healthy communities and institutes.

Critical big sharp problems, in everybody's opinion have reached the red lines, the remainders of which exceeded the logical limits. For the first time, the contradictions in the various methods and means of treatment has become critically dangerous due to the high intensity of the problems and its continual aggravation with the passing years. The most pressing and dangerous being the financial debt that is overwhelming the country and the Lebanese especially that it is growing and increasing hugely and dangerously similar to a snow ball rolling from very steep cliff or fire burning a dry forest.

The government has decided in the beginning of its priorities to harness the growth of this financial debt by taking various measures mainly minimizing the expenditure and increasing its revenues. By applying austerity and transparency in the financial policy, I hope that the mission will be accomplished with the serious and responsible application of these policies that can save the Lebanese from the dangers.

These procedures will not become active and functional in our opinion unless they gain the Lebanese trust. A lot of effort has to be put of evolving this trust, in order to be worthy and able to build a new sociological pact. The element of trust is the main requirement and it would be enhanced by communication and healthy discussions between the government and representatives of the active and powerful groups of the Lebanese public.

What concerns us is saving Lebanon, the youth of Lebanon, the fortune of Lebanon. This loving



country that we defend passionately. We are all responsible for bringing Lebanon back to the strong prosperous, capable and unique country with its rich environment and intelligent and creative people in all fields and whatever requirements.

This was our endeavor at the Industrial Research Institute (IRI). As IRI was advancing under our directorship, we could enhance the economic role of Lebanon, its scientific presence and technical and advanced, technological performance which was upgraded to the level of similar European institutes.

The accomplishments and deeds of the IRI between 1998 and 2018 could not have happened, had we not insisted on the importance of its economical role on the local level and enabling its status as a pioneering scientific institute on the Arabic and regional levels. Thanks to the commitment of the institutes personnel and their dedication to serve their country and community.

It is beneficial to announce, that the built area of the IRI has increased substantially in the above mentioned time duration from 4000 square meters to 6000 square meters.

The institute's laboratories have been equipped with the most advanced technical apparatus and devices in the field of testing and calibration. Its credibility and professionalism bears witness to the importance of the report of conformity that the institute can give to many Lebanese industrial products and commodities. Thus helping in the flow of goods to and from Lebanon with the assurance of their conformity to the highest technical requirements stipulated by local and international standards.

Three specialized centers are affiliated to the Industrial Research Institute: the Lebanese Cleaner Production Center (LCPC), the Euro-Lebanese Center for Industrial Modernization (ELCIM) and the Centre for Innovation and Technology (CIT). These centers conduct research and development, give guidance and provide consultation to industrial sector workers.

Amid this scientific environment, which is in line with high professional ethics, the IRI maintained during 2018 a fast pace of laboratory activities and verification of various economic files, as well as supervision of internal and external controls. The institute carried out over 4,000 different activities on a daily basis, with a highly qualified staff across various scientific disciplines that increased from 20 to 162 members.

We take pride at IRI with the international network connections that we built, thus protecting our presence, role and standing in both the regional and international levels.

Lebanon remains glamorous in his capable people. The Lebanese do not allow despair or depression to come by. They resurrect like the Phoenician bird. They renew and proceed blowing away crisis like ashes.

Welcome to work...



**GENERAL  
PUBLIC  
ACTIVITIES**



**For the Industrial Research Institute, the year 2018 marked the end of two decades under the wise leadership of its Director General, Dr. Bassam Frenn, who helped in reviving and strengthening the institute. He succeeded in turning around IRI from a relatively unknown to a firmly established and advanced organization, compared to similar institutes in the Arab world.**

**Hence, his prudent management, coupled with the employees' efforts, commitments and dedicated work, produced exceptional results in terms of IRI's role and its contribution in building the national economy. The institute also played a key role at both the Arab and international levels, after forging partnerships with global research and laboratory institutions, and through its research centers, internationally accredited laboratories and its affiliation with 12 global organizations.**

**During 2018, Dr. Frenn attended all IRI's general activities, consisting of conferences, seminars and workshops.**

## IRI'S DIRECTOR GENERAL HIGHLIGHTS THE ACHIEVEMENTS OF 20 YEARS

**FRENN: IRI HAS A ROLE IN PROTECTING LEBANON'S ECONOMY**

**HAJJ HASSAN: IRI IS AN IMPORTANT ECONOMIC UTILITY FOR LEBANON  
ADOPTING SCIENTIFIC AND INSTITUTIONAL STRATEGIES**

### Industrial Research Institute - 9/1/2018

**The annual meeting of the Industrial Research Institute's managers, senior staff and employees was held under the patronage of the Minister of Industry Hussein Hajj Hassan, and in the presence of the Ministry's Director General Dany Gedeon. During the event, IRI's Director General, Dr. Bassam Frenn, outlined the most important achievements in the past 20 years, since he took the reins of the institute in 1998, and until the end of 2017.**

“We are proud of Minister Hajj Hassan’s commitment towards the institute and his role in facilitating the visions, plans and strategies that we have put in place, in the past four years, during his tenure at the Ministry of Industry,” said Dr. Frenn. “Furthermore, I acknowledge the cooperation with the



consecutive Ministers during a 20-year period at the Ministry. This collaboration, along with the employees’ efforts, commitments and dedicated work, produced exceptional results in terms of IRI’s role and contribution in building the national economy. The institute also played a key role at both the Arab and international levels, after forging partnerships with global research and laboratory institutions, and through its research centers, internationally accredited laboratories and its affiliation with 12 global organizations,” he added.

“The Industrial Research Institute has a fundamental role in safeguarding the national economy, the Lebanese society, the industry, trade and environment. The relationship between the institute, the



Ministry of Industry and the concerned ministries and departments, has evolved, and it improved with the private sector as well, with the objective of protecting the Lebanese citizen and ensuring a clean environment, good health and public safety. Thanks to your efforts and the cooperation of the board of directors, we can achieve our sustainability. Today, we are spearheading an ambitious expansion plan, including the construction of a new building equipped with the best technologies, to increase IRI's area to 14 thousand square meters, with research centers, laboratories, technical offices and the administration in order to serve the citizen," explained Dr. Frenn.

### ***Hajj Hassan***

The Minister of Industry, Hussein Hajj Hassan, praised the level of development and modernity that the institute has reached, as it became an important economic utility in Lebanon; the IRI is playing its role and performing its tasks according to a scientific and institutional vision, programs, studies and strategies. He also



stressed that the top management and the employees are credited with the achievements at the institute, which are also the outcome of a record of 20 years of achievements under the helm of Dr. Frenn.

"I reiterate the necessity of developing a clear policy governing the economic activities, in order to increase the growth rates and boost the economy," said the Minister.

"Do we want our GDP to remain around \$52 billion, or to increase it to \$70 billion in a short period of time? Do we want to increase the share of the industrial sector and its contribution to the GDP, how and to what extent? How should we develop scientific and industrial research, which we encourage and support, in order to promote the economy?" asked Hajj Hassan. "We ask these questions to the State's policy-makers and officials. I will ask them again during the economic ministerial committee meeting, which will be held tomorrow afternoon and will be presided over by the Prime Minister. It will be the committee's first meeting this year, after only two meetings last year. What is needed is to streamline the work of this committee with the aim of reaching decisions and outcomes to be submitted to the Cabinet in order to take the suitable decisions," said the Minister.

He explained that the government made some achievements on the political, security and social fronts. However, he deplored the lack of economic achievements, considering that the exports decline, imports increase, high deficit and poor growth are clear evidence on that.

"It is said that the growth reached 2% last year, but it was unable to lower the unemployment rate, for example, to create new job opportunities or to increase the exports," said the Minister.

## HE ANNOUNCED THE CREATION OF NEW SPECIALIZED INDUSTRIAL ZONES

**HAJJ HASSAN: THE INDUSTRIAL SECTOR CAN BE  
THE LARGEST EMPLOYER**

**Industrial Research Institute - 25/1/2018**

**The Minister of Industry, Hussein Hajj Hassan, announced that “the industrial sector could be the largest employer in Lebanon, after supporting, developing it and creating new industries. This is what we are aiming for at the Ministry of Industry, particularly by establishing new industrial zones that are classified by category and by manufacturing sectors, which will create many job opportunities.”**

“The economic situation in Lebanon is difficult, and is becoming gloomier with serious repercussions affecting the entire industrial sector and resulting in further decline and closure of industrial enterprises,” said the Minister to a delegation of IRI’s top management and senior staff.

“Industrialists are increasingly complaining of dumping and unfair competition. The local market is still open to imports, while the external markets are closed to the Lebanese goods and products, due to political decisions or protectionism by the foreign countries, which makes the Lebanese goods less competitive,” he said.

He acknowledged IRI’s achievements during the past years, namely its sustainable policy-making, and diversified activities driven by institutional and scientific principles and shielded from political and personal interests and concerns. He stressed that the institute is an essential part of the scientific system behind the industry, and contributes to its development through researches and studies, and by conducting laboratory tests in its equipped and internationally accredited labs.

He explained that the academic scope in Lebanon is now larger than the economic scope due to the increasing number of university graduates and doctoral students. Hence, the necessity and importance of increasing, supporting and encouraging the scientific and industrial researches.

“Lebanon needs thousands of job opportunities, in order to secure employment for the jobless, as well as 40 to 45 thousand openings per year to accommodate the youth and graduates. The industrial sector could be the largest employer, after supporting, developing it and creating new industries. This is what we are aiming for at the Ministry of Industry, particularly by establishing new industrial zones classified by category and by manufacturing sectors, which will create many job opportunities and attract investments in this promising sector,” said the Minister.

He also cautioned the decision-makers in Lebanon against not supporting and protecting the industrial sector, as in other countries. He stressed that despite the difficult situation, we will not lose hope and will continue our efforts and work in collaboration with all the stakeholders in order to overcome the difficult circumstances that the industrial sector is facing.

## **DR. FRENN ANNOUNCED THE RESULTS OF THE RESOURCE EFFICIENT AND CLEANER PRODUCTION PROJECT EIGHT PLANTS SAVE \$2 MILLION ANNUALLY**

**HAJJ HASSAN: SOLVING THE INDUSTRY PROBLEM BY OPENING EXTERNAL MARKETS AND RECIPROCITY WITH TRADE PARTNERS CONCERNING THE RULES OF ORIGIN**

**Industrial Research Institute - 30/01/2018**

**The Director General of the Industrial Research Institute, Dr. Bassam Frenn, announced the results of the Resource Efficient and Cleaner Production MED TEST II project, under the patronage and the presence of the Minister of Industry, Hussein Hajj Hassan, and in collaboration with the Ministry of Industry, the Ministry of Environment and the United Nations Industrial Development Organization (UNIDO). The MED TEST II project is part of the SwitchMed program for the Transfer of Environmentally Sound Technology (TEST) to the southern Mediterranean region.**

Funded by the European Union, the program is implemented by the United Nations Industrial Development Organization (UNIDO), in collaboration with the United Nations Environment Program (UNEP), the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC) and the UN Environment's Economy Division. The Industrial Research Institute was charged with its implementation. A region-wide plan was launched in 2015 and six Arab countries benefited from it: Lebanon, Palestine, Jordan, Egypt, Tunisia and Algeria. The program aims to minimize the use of natural resources, such as water, energy and raw material, in order to reduce the levels of pollution and emissions, and to cut the cost of production.

Specific characteristics were defined to test eight food-processing industrial enterprises, located in Bekaa and Mount Lebanon, to benefit from the project.

The ceremony was attended by Dr. Manal Mousallem, representing the Minister of Environment; Jose Luis Viunesa-Santamaria, representing the Delegation of the European Union to Lebanon; Cristiano Pasini, the UNIDO Regional Representative for Lebanon; Dany Gedeon, Director General of the Ministry of Industry; Dr. Fady Gemayel, Chairman of the Association of Lebanese Industrialists (ALI), as well as experts, advisors and industrialists.

### ***Dr. Frenn***

After the national anthem, Dr. Bassam Frenn pointed out that “we started 15 years ago to build bridges between the industry and the environment in order to help the industrialist in promoting the resource efficiency mechanism and implementing an environmental preventive policy to reduce pollution and make a profit. At the Industrial Research Institute, we are proud to be strengthening the relation between the private and public sectors, and between the industrial and environmental sectors.

IRI is considered a leader in its research, development and supervision work, and is now providing technical support to international organizations. Moreover, the Transfer of Environmentally Sound Technology project, MED TEST II, is providing around \$2 million every year to eight plants operating in the food-processing industry, with a full return on investment after only one year.”

“The cooperation will continue between the institute and the European and international organizations, and we are looking forward to enhancing it. We hope that the international and European audience will witness the high level reached by our industry, which is capable of and striving to meet the environmental and health requirements, and other European standards imposed on the exported goods. I ask you to convey this testimony to the European officials, our partners across the Mediterranean Sea. Whether at the Industrial Research Institute, or in the industrial sector in general, we welcome your support, hoping to drive better outcomes in terms of opening the European markets to Lebanese goods and commodities, and to give a preferential treatment to Lebanese products, which will help increase their production for their export, particularly to Europe,” he added.

“Our economy is faltering and facing many challenges. I suppose that you are fully aware of this situation. Hence, we should adopt a new approach regarding the serious Lebanese circumstances, beyond the measures we are currently taking, and regardless of their importance. We have to find tangible solutions and practices that help in bailing out the Lebanese enterprises and rescuing them from the crisis they are facing,” said Dr Frenn.

**Gemayel**

In his address, Dr. Gemayel said that the “SwitchMed MED TEST II Project has strategic dimensions and is part of the new business development systems, particularly in the streamlined production programs. The project outcomes confirmed that there is:

- A substantial scope to increase the efficiency that is of significant importance to industry.
- A 91% favorable response from the industrialists to the proposals, while industrial enterprises invested altogether \$200,000 in water and power meters, as an extra amount over what was initially allocated by the project.
- Evidence that respecting the environment and rationalizing the use of resources constitute an



extra revenue for the economic process.”

“Therefore, we ask to implement a second phase of the project and to expand work, with the assistance of UNIDO and IRI, on a sector basis, as well as increasing the number of companies benefitting from the project from a sectoral perspective, in order to consider these companies as groups belonging to different sectors, instead of dealing with them individually. The project should focus on SMEs, which are considered the backbone of Lebanon’s economy and an important employer of the youth. We also ask for soft loans to fund the resources efficiency in the industry, including water, power and raw material. Importantly, we decided at the Association of Lebanese Industrialists to launch our environmental commitment on 28/1/2015. At that time, we reaffirmed in the presence of more than 150 industrialists, that the Lebanese industrialists are committed to the environmental issues as part of a clear system that will cease immediately any harmful action and repair damages within a comprehensive system based on a fixed timetable and a soft funding, similar to the funding offered by the Central Bank and a number of assistance programs. We reiterate that the Lebanese industry is known for its quality, excellence and innovation, and will not therefore disregard its compliance with environmental standards,” said Gemayel.

### ***Pasini***

In his address, Pasini thanked the European Union for their funding, the Industrial Research Institute for its close cooperation that permitted a successful project delivery, the Ministries of Industry and Environment, the Association of Lebanese Industrialists, the Chamber of Commerce, Industry and Agriculture in Beirut and Mount Lebanon and the Central Bank, for their support and assistance.

“Lebanon’s industry is facing significant challenges hindering its competitiveness, due to high production costs, real estate prices and other factors that limit the growth of industry. Adopting methods for the efficient use of energy, water and material will reduce costs and pollution, and increase competitiveness,” explained Pasini.

He also called for a road map to develop the industry by embracing new production technologies.

### ***Jose Luis Viunesa-Santamaria***

In his remarks, Santamaria mentioned the challenges facing the Lebanese industry growth, stressing that similar programs help in developing and modernizing the industry, and build new production mechanisms that reduce costs and pollution.

“The European Union is pleased to fund the program. We would like to thank our partners for their commitments that led to the proper implementation of the project. I particularly thank the Industrial Research Institute, the Ministry of Industry, the Association of Lebanese Industrialists, as well as the UNIDO and the Ministry of Environment,” said Santamaria.

He considered the project as a good initiative for the industrial sector in Lebanon, especially with the technical assistance that allows saving money and reducing environmental pollution. He explained that the efficient use of resources and energy increases competitiveness and maintains natural resources. He also pointed out that one of the reasons behind the reduced competitiveness of the Lebanese





industry was the regional crisis and the closure of boundaries and border crossings, with Syria, that lead to other Arabic countries.

### ***Manal Mousallem***

Speaking on behalf of the Minister of Environment Tarek Al Khatib, Dr. Mousallem said that, “The implementation of the MED TEST II project is in line with the strategy adopted by the Ministry of Environment in the industrial pollutants management that is primarily based on integrating the sustainable production and consumption principles. Hence, the importance of reducing wastage in using natural resources and decreasing the waste generation, before adopting final treatment measures.”

The Environment Protection law stipulated that the parties that caused the pollution should assume themselves the responsibility of dealing with this issue, in compliance with the guidelines of the Ministry of Environment’s working group. In recent years, this group had raised awareness regarding the sustainable production and consumption principles amid industrialists, through the cooperation with all partners in public and private sectors, and constant communication with the Ministry of Industry, the Association of Lebanese Industrialists and industrialists in general.

In this regard, the Ministry of Environment took several measures to guide the plants in their gradual transfer to sustainable production and consumption, particularly in managing their pollutants, such as:

First: To establish a mechanism for the environmental commitment by industrial enterprises through the implementation of the Lebanon Environmental Pollution Abatement Project (LEPAP), in partnership with the World Bank, the Italian government and with the support of the Lebanese Central Bank. This project enables the plants to reduce their pollutants, or to treat them by securing soft loans with a low interest rate, as close as possible to 0%. The plants can also benefit from a free technical support to meet the commercial banks requirements regarding their loan approval. Moreover, in coordination with the Service of Urban Environment, LEPAP team is playing a crucial role in guiding the participating plants to search for disposal alternatives, if possible, as well as taking measures or adopting production techniques that will allow them to reduce the use of resources and raw materials,

limit waste generation, recycle or reuse.

Second: To prepare a plan for the sustainable production and consumption in the industrial sector by the Ministries of Environment and Industry, with the support of the European Union and the United Nations Environment Program (UNEP), by adopting a strong and effective participatory approach with all national stakeholders. This plan adopted key procedures, which are as follows:

- A. To strengthen the procedures followed to promote the use of the best available techniques, by embracing the goods production Lifecycle Approach;
- B. To develop the necessary policies and the appropriate legal framework to encourage sustainable production and consumption in the industrial sector in order to reach an inclusive and circular economy;
- C. To raise awareness among consumers to support and adopt the products that are manufactured, used and disposed of in a sustainable way.

Third: To set guidelines for the environmental commitments in several industrial sectors that will be essentially based on the cleaner production principle, waste reduction, recycling and reuse.

Fourth: To focus on sustainable production and consumption measures as a central part of the environmental management plan in the environment scrutiny study required under the environmental commitment decree for the plants, and the implementing decisions thereof.

The activities of the Environment Ministry are part of the sustainable production and consumption measures that aim to promote the legal framework regarding the implementation of the environmental commitment decree for the plants, particularly the environmental commitment deadlines that will become effective by the end of the current year.

Therefore, I want to call upon the participating representatives of industrial enterprises and all the other plants, through the Chairman of the Association of Lebanese Industrialists (ALI) Fady Gemayel, to communicate with the team of the Ministry of Environment and LEPAP project to complete their environmental projects in order to reach the environmental commitment and obtain a certification in this regard.



***Hajj Hassan***

The Minister of Industry said “This program is very important to the economy, industry and environment in Lebanon. We thank the UNIDO for its cooperation and the European Union for their funding. We consider that the sustainable development and production, and the reduction of production costs, will solve a part of Lebanon’s industrial problems. We welcome similar projects and we declare our commitments to them since they are beneficial to our economy, the environment conservation and the higher production. We should express our great interest in adopting the efficient use of energy and resources, given the absence of resources and raw materials in Lebanon, not to mention that we can face water shortages in the future. Forests, water, green areas, agricultural production and rivers are constantly decreasing, while pollution is increasing. The industry is one of the pollution sources, but it is not the only one. We import the raw materials of most of our food industries, and this is the reason why we shouldn’t waste these materials.”

“We are seeking a comprehensive solution to the industry by opening the external markets to the Lebanese products and by not allowing the Arab countries, the European Union, Turkey, China and other countries to use the rules of origin that identify the Lebanese product as a reason to reduce the exports to their market. We need Europe’s assistance in this regard. We need to solve the issue of exporting medication, food and agricultural products, clothing and services to these countries. The value of exports decreased from around \$4.2 billion dollars to \$2.5 billion dollars. If we will not be able to fill this gap and restore exports to their previous levels and increase them in the future, the already sluggish economic situation will worsen,” added the Minister.

He asked the representative of the European Union Delegation to convey this reality to the head of the EU Delegation to Lebanon Christina Lassen, reminding that he handed her a memorandum in this regard for the Delegation and the European Commission in Brussels since last July, and that he was still waiting to receive a response to his requests that remain unanswered.

“We are not asking to disregard any lack of specifications and standards, but to allow our products that conform to international and European standards to enter the European and international markets. The problem lies in the rules of origin. We will follow up this issue with Prime Minister Saad Hariri, and with other stakeholders to reach positive solutions,” said Hajj Hassan.

He also asked the plants owners to abide by the agenda set to respect the environmental standards, pointing out to funding and mentoring programs in this regard, before resorting to temporary closure of plants and then their permanent shutdown. He stressed that the industrialists have an interest in complying with the standards, due to high financial and material savings if the environmental standards were respected.

***Certificates***

Plants owners who benefitted from the program, and advisory experts participating in the project, received certificates.

## SEMINAR AT IRI ON “MASTER’S PROGRAMS FOR THE PRODUCTIVE SECTORS”

**DR. HAJJ HASSAN: DEVELOPED COUNTRIES SET POLICIES  
DEFINING THEIR FUTURE VISION**

**DR. FRENN: WE CONTRIBUTED TO LINKING SCIENTIFIC RESEARCH  
TO INDUSTRY AND PRODUCTION**

**Industrial Research Institute - 2/11/2018**

The Minister of Industry, Hussein Hajj Hassan, and IRI’s Director General, Dr. Bassam Frenn, opened the second seminar on Master’s degree programs development, entitled “Master’s Programs for the Productive Sectors”.

The seminar was organized by IRI’s Higher Education Board, with the participation of MP Neemat Frem, faculty deans, professors, lecturers, researchers, industrialists and students.



After the national anthem, Dr. Abdallah Zaiour, head of the Higher Education Board, spoke about the role of the Master’s degree and its relation to the job market. He said that choosing the right Master’s by the student will contribute to solving the unemployment problem and increasing the economic performance, particularly in the industrial sector, and will improve the quality level as well.

***Dr. Frenn: We launched the innovation center***

In the seminar, Dr. Bassam Frenn described the Industrial Research Institute’s strategic development vision, which contributed to finding solutions to link scientific research to industry and productive sectors, by giving the utmost priority to serve the society and meet its needs.

“Whether through private initiatives or European partnerships, the Industrial Research Institute now includes research centers, programs for the industrial modernization, innovation, technology and cleaner production, as well as laboratories





accredited by the highest European and American bodies of accreditation,” said Dr. Frenn. “In order to achieve its objectives, IRI’s Center for Innovation and Technology (CIT) launched the Innovation Voucher project, which is co-funded by the Industrial Research Institute and the European Union. It aims to promote technological innovation, and gives a voucher amounting to 10 thousand Euros to 20 Lebanese researchers or SMEs, at least, in order to fund their R&D activities in their production and services. This project was initially designed to encourage the researchers and SMEs, lacking the necessary resources and experience, to work with research and innovation centers and involve researchers to help small companies in becoming more competitive,” added Dr. Frenn.

He concluded saying that “finding job openings for a higher number of university degree holders in the job market requires many initiatives available in CEDRE program, the infrastructure development, oil and gas recovery project, public-private partnership, participation in Syria’s reconstruction and the support of emerging companies.”

### ***Hajj Hassan: To develop the export of concentrated products***

The Industry Minister, Hussein Hajj Hassan, said that “those holding the productive Master’s degrees should work in productive sectors, such as the industry, agriculture, digital economy, health services, banking and the oil and gas sector. Employment should be commensurate with the academic specialization. However, is the unemployment the root of the problem? No, it is the consequence. The real problem is the total absence of economic policies or their non-application if any. This is the origin of the problem.”



He explained that when the problem lies in the absence of a market for any goods we are producing, the solution is to stop manufacturing those goods.

He considered that the officials and stakeholders, including the key actors of the educational system, are required to raise their voice and request clear economic policies. However, the educational sectors should not be held responsible alone; the developed countries formulate policies defining their vision for the coming years with clear plans and implementing mechanisms.

He proposed to the new government to renegotiate the partnership agreement with the European Union, particularly regarding a tax hike up to 40% on the export of digital and information technology programs from Lebanon to European countries. These taxes will undermine the competitiveness and growth of this promising sector in Lebanon that is capable of creating hundreds of job opportunities to professionals.



“We can also develop the export of concentrated agricultural produces. For example, instead of exporting tomatoes or cucumbers, we can export their seeds. However, this requires opening external markets under agreements with the countries that will import them,” said the Minister.



He explained that the number of universities and graduates is much bigger than the size of the current national economy and its capacity to accommodate new jobseekers, concluding that we “have to increase the economy size instead of reducing the educational system size.”

### ***Working sessions***

Speakers during the seminar included Mohamad Khalil, Director of Azm Biotechnology Research Center; Yasser Mehanna, Coordinator of the Master’s degree at the Lebanese University; as well as Clovis Francis, Director of the Scientific Research Center at the Faculty of Engineering at the Lebanese University.

A session was then held on the “Productive Labor Market, Master’s Programs and Future Trends and Alternatives”. The main speakers were MP Neemat Frem; Rafic Younes, Dean of the Faculty of Engineering of the Lebanese University; Naim Ouaini, President of the Lebanese Association for the Advancement of Science (LAAS); Ghaleb Faour, President of the Remote Sensing Center (RSC) at the National Council for Scientific Research (CNRS); and Yehia Taher, Associate Professor for Science and Research at Université de Versailles in France.

## THE MINISTRY OF INDUSTRY AND IRI ORGANIZE A WORKSHOP ON SCIENTIFIC MANAGEMENT OF LIQUID WASTE IN THE INDUSTRIAL SECTOR

**Industrial Research Institute - 12/11/2018**

The Ministry of Industry and the Industrial Research Institute (IRI) organized, in partnership with “Liqa Lil Aamal” company, a workshop entitled “Creating a Scientific Process for the Liquid Waste Management in the Industrial Sector”. The workshop, held at the institute, was attended by the Ministry of Industry Director General Dany Gedeon; IRI’s Financial and Administrative Director Salim Kfoury representing the institute’s Director General Dr. Bassam Frenn; the President of the Lebanese Association for the Advancement of Science (LAAS) Naim Ouaini; the Treasurer of the Association of Lebanese Industrialists (ALI), Nazareth Sabounjian; the president of the Association of North Metn Industrialists Charles Muller; ALI’s General Manager Talal Hijazi; the General Manager of “Liqa Lil Aamal” Samir Geha; officials from the Ministry of Industry, the Ministry of Environment and the Industrial Research Institute; the academic advisory team who submitted the workshop study, as well as industrialists, environmental experts and representatives of the civil society.

### *Gedeon: the Ministry is committed to its monitoring responsibilities*

After opening the workshop with the national anthem, Gedeon welcomed the participants saying, “We thank the officials, civil society and the media for tackling issues related to the environment, pollution and public health. However, in many instances, these topics are raised in an incomprehensive way, and do not mention the measures and procedures taken by the ministries and departments to combat these practices and find solutions to these complaints. This inaccurate coverage is affecting negatively



the economic, industrial and social situation and is damaging Lebanon's reputation at home and abroad. Furthermore, it appears as if the industrial sector, which is an important pillar of the national economy, is directly and indirectly targeted."

"At the Ministry of Industry, and in partnership and cooperation with the Industrial Research Institute and the private industrial sector, we are addressing these issues in a very responsible manner, and proactively coordinating with all the stakeholders to anticipate and solve the problems. As for the role and responsibilities of the Ministry of Industry, we are carrying out periodic and unannounced inspections, we make informed and appropriate decisions, issue guidance, raise awareness and take necessary and unpopular measures sometimes against offenders after they fail to abide by the law, despite several warnings and deadlines. We give them many advance warnings to allow them to come to the Ministry of Industry to help them in preparing their applications, and complete their legal documents, in order to license their plants according to legal frameworks as stated in applicable laws, decrees and regulations," added Gedeon.

He explained how the Ministry of Industry is assuming its responsibilities with licensed plants, in terms of controls, inspections and awareness-raising campaigns. However, the Ministry is facing great difficulties in identifying the unauthorized plants, due to the unresponsiveness of many municipalities when the Ministry asks them to list the industrial enterprises operating within their municipal boundaries.

### ***Kfoury***

Salim Kfoury delivered an address on behalf of Dr. Frenn, saying "We are working since more than 10 years at the Industrial Research Institute with the intention of transferring the modern technologies to Lebanese industries, urging them to grow their plants and supporting them in improving their economic, developmental and environmental performance."



“Thanks to its equipment and human resources, IRI is considered one of the major actors in Lebanon in interconnecting the industry, environment and quality. Its expanded activities are in the service of the industry and the national economy, mainly in the following fields: technological transfer, providing the Ministry of Industry with technical assistance, issuing certificates of conformity in accordance with international standards after conducting tests in its internationally accredited laboratories according to the international standard ISO 17025. Other fields include the verification of the environment management systems in factories according to ISO 14001 requirements, or in compliance with the conditions and standards of the Ministry of Environment, as well as researches and studies to improve and develop the productivity according to international environmental standards,” he explained.

“The Industrial Research Institute is carrying out fundamental tasks regarding the quality, and the assistance provided to industrialists to reduce the production costs. These cost-cutting initiatives include the use of renewable energy, protection of the internal work environment, raw material optimal use, etc. Our objective is to help the Lebanese industrialist to improve his environmental print by modern means and methods that guarantee him a better economic performance. We work closely with the Ministry of Industry for a better environment and a well-developed industry, so that Lebanon reaches the highest levels of development,” added Kfoury.

### ***Naim Ouaini***

In his address, Dr. Ouaini highlighted “the importance of adopting a practical and operational plan for the management of liquid industrial waste in the manufacturing sector.”

### ***The study***

Dr. Amin Qasoun and Dr. Antoine Ghauch presented the study, which was the subject of discussions and deliberations by the audience.



## SWISS AMBASSADOR VISITS THE INDUSTRIAL RESEARCH INSTITUTE

### Industrial Research Institute - 12/4/2018

Swiss Ambassador to Lebanon, Monika Schmutz Kirgöz, responded to the invitation of the Industrial Research Institute's Director General, Dr. Bassam Frenn, and visited the institute, its different departments, laboratories, as well as research, study and planning centers. She listened to explanations about IRI's activities, and to detailed scientific, technical and accurate commentaries about working methods in accordance to international, and particularly European, standards. She was impressed by the significant development and the practices followed by the institute.



The Director General of the Industry Ministry, Dany Gedeon, took part in the visit along with the Swiss delegation accompanying the Ambassador, and a delegation from the Swiss Business Council-Lebanon, including Vice President Habib Hatem and Secretary General Walid El Baba, as well as the Lebanese-French Chamber of Commerce Chairman Gaby Tamer, and officials from the Swiss Embassy and the Industrial Research Institute.



They discussed how to promote the exchange of expertise, training and information, and how to set out a future vision for the joint work in the coming years.

Dr. Frenn welcomed the Ambassador and the delegation accompanying her in the Industrial Research Institute, and he encouraged the cooperation and joint work in order to achieve the expected scientific and economic objectives.





## DR. FRENN EXPLAINS TO A CHINESE DELEGATION HOW TO MONITOR GOODS AND LAB TESTS TECHNIQUES

### Industrial Research Institute - 19/7/2018

A diplomatic delegation from the Chinese Embassy in Lebanon, including the Counselor for Economic and Commercial Affairs Mrs. Li Jing, the Second Secretary Mrs. Sun Nan and the Third Secretary Mr. Fan Xi at the Embassy,



visited the Industrial Research Institute and met with its Director General, Dr. Bassam Frenn, in the presence of IRI's officials. The president of the Lebanese Chinese Business Association Ali Al-Abdullah also participated in the meeting.

They discussed the economic, commercial and reciprocal relations between Lebanon and China. Dr. Frenn explained the work process at the institute and the reference laboratories, demonstrated how to monitor goods and briefed them about the advanced analysis techniques.



## HE REPRESENTED LEBANON IN THE INTERNATIONAL CONSULTANTS DAY IN VIENNA

**DR. FRENN: TO ADOPT A CONDUCT WITH AN IMPACT ON GOVERNANCE  
AND TAKE THE RIGHT DECISIONS FOR SUCCESS**

**Vienna - 20/6/2018**

**IRI's Director General, Dr. Bassam Frenn, represented Lebanon in the International Consultants Day 2018 conference, which was hosted by the Austrian Federal Economic Chamber, in the Austrian capital Vienna. Many CEOs, chairpersons, General Directors and officials from public services and private companies from Europe and Asia, took part in this event.**

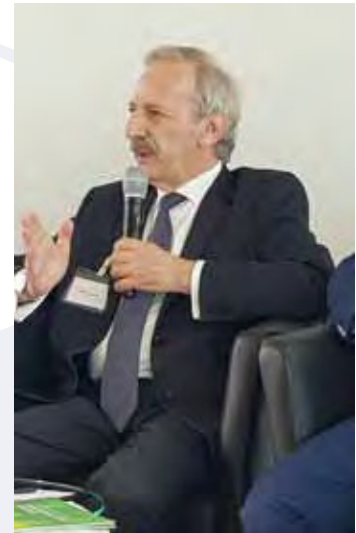


In his address, Dr. Frenn mentioned the relations between Lebanon and Europe in general, and Austria in particular, at different development, economic, reciprocal, cultural and academic levels. He stressed that these “relations are deep-rooted and are based on principles, values, firm ties and reciprocity that don't change depending on circumstantial factors or new and short-lived situations.”

In his speech, he focused on the conduct required for the social developments, which has an impact on governance, and on prudent and judicious management that is capable of taking the right decisions. He explained the concepts, standards, logical and practical conditions of the management consulting in order to contribute to the success, development and excellence of the institutions.

He emphasized that Lebanon is adopting policies that keep pace with modern administrative sciences, combined with cases and applications that are appropriate to the identity and specificity of Lebanese institutions, through the management building and structuring within the institution, and by forging relations, partnerships and interactions with other institutions, at home and abroad.

He explained the advisory role of the Industrial Research Institute in this regard through the institutions and programs that are under its supervision, and that provide financial, technical, scientific and management consultancies to the private sector in Lebanon and the neighboring countries.





**LABORATORY  
SERVICES,  
OBSERVATIONS &  
ACTIVITIES**

## 43,000 CUSTOMS FILES, 368,000 LAB TESTS AND 688,000 GAS CYLINDERS

Since 1998, when Dr. Bassam Frenn became IRI's Director General, the institute maintained its successful course of activities, enhancing it with an ongoing and steady growth. Dr. Frenn turned the IRI into a fully-fledged scientific institution, unaffected by the surrounding uncertainties caused by wars and economic crises, which undermined development and growth. Dr. Frenn also succeeded in protecting the IRI from internal political tensions and the economic slump, confirming its commitment to work ethics and operational success, and promoting all sectors of the national economy through scientific data and results, strengthening it locally and internationally.

The IRI remained a leading scientific institution in Lebanon and the Middle East, capable of placing its scientific resources, laboratories and human capital, not only at the disposal of the industrial sector, but also to serve the public sector. Therefore, IRI allowed financial savings and offered a scientific support - achieving rapid results - in the campaign of controlling and inspecting the agricultural, manufacturing and health products, meeting the needs of the Ministry of Economy and Trade, the Ministry of Industry and the Ministry of Public Health, in addition to the Ministry of Agriculture. Moreover, the institute was controlling the new liquefied gas cylinders.

The tests, examinations and verifications were distributed as follows:

- 368,140 compliance tests and analyses were conducted by IRI's laboratories during 2018, increasing by 14,833 operations compared to 2017, or by 4.2%, and reaching 1,342 daily tests on average.
- In addition to these tests, the institute carried out 338 external examinations, and inspected 677,600 locally manufactured gas cylinders and 14,784 imported gas cylinders.
- Standardization and calibration tests reached 18,566 on 1998 samples.
- In the conformity assessment, IRI inspected imported goods checking their compliance with mandatory requirements, and examining 43,307 files, at a daily rate of 165 files.

Hence, the Industrial Research Institute demonstrated its competence as a vigilant scientific institution capable of meeting the needs of the public administration and the private sector by conducting accurate scientific and technical tests in a wide range of sectors, not to mention the scientific researches and studies in different economic fields.

## TESTS AND ANALYSES

In general, Electrical Laboratories outpaced other laboratories in the number of tests they performed in 2018, by almost 33.4%, thus preceding the Engineering and Soil Laboratories, whose share in the experiments was around 22%. The Chemical Laboratories accounted for 21.9%, while Bacteriological tests reached around 10.6% of the total, followed by the Central Laboratory for grains, flour and bread research, then the Petroleum and Paint Laboratories and the Textile and Leather Laboratories.

Tests included 54,399 samples of the various mentioned types.

The Welding Laboratory performed 4,852 experiments on nearly 7 projects.

According to statistical tables, the laboratories activities were as follows:

Year	2018	2017	2016	2015	2014	2013
Chemical and physico-chemical	80600	67870	71400	72850	63349	53806
Bacteriological analyses	39300	35700	37620	39614	33816	19974
Textile, leather and rubber	6750	7100	6830	6397	3835	5714
Paint, Petroleum and derivatives	16150	15200	13200	12450	2895	5037
Civil Engineering	80821	86868	93073	72972	83110	78833
Electricity	122841	124633	119595	130011	127402	124577
Central Laboratory for grains, flour and bread research	21678	14742	9973	7543	12356	8837
Welding	4852	1194	3281	4015	3785	9045
<b>Total</b>	<b>372992</b>	<b>353307</b>	<b>354972</b>	<b>345852</b>	<b>330548</b>	<b>305823</b>

### CHEMICAL AND PHYSICO-CHEMICAL LABORATORIES

The total number of experimental operations inside the chemical and physico-chemical laboratories reached 80,600, increasing by 12,730 tests or 18.7%, and accounting for around 21.9% of all laboratories tests.

#### Bacteriological analyses

There was an increase in bacteriological experiments by 3,600 or 10% to 39,300 tests. Overall, they represented 10.6% of the total number of experiments.

#### Textile, leather and rubber laboratories

The number of tests and analyses in these laboratories, during 2018, proved that the local textile and garment industry has restored some of its full production capacity. This recovery was due to the decrease in exports from Syria, or the inflow of skillful Syrian workforce to Lebanon. The number of



these experiments and tests reached 6,750 representing 1.8% of total experiments.

### Petroleum and derivatives laboratories

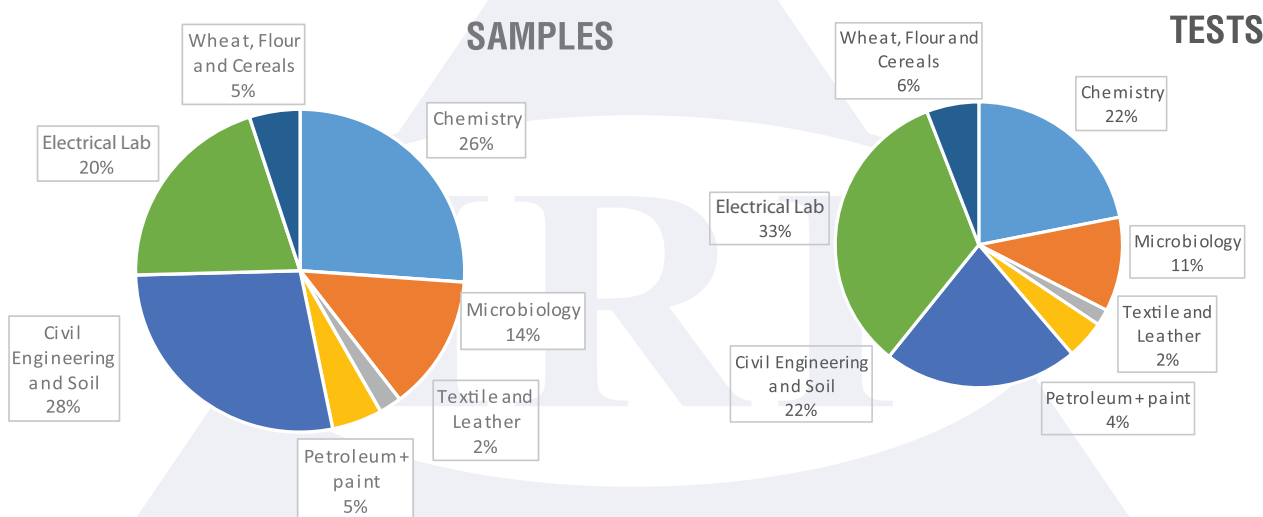
Paint and petroleum laboratories made a solid jump from 950 tests to 16,150 tests in 2018, accounting for 6.3% of the total activity.

### Civil engineering laboratories

The civil engineering and soil laboratories conducted 80,821 tests accounting for 22% of the total. The number of these tests decreased due the stagnating construction sector in Lebanon after the decline in demand for housing.

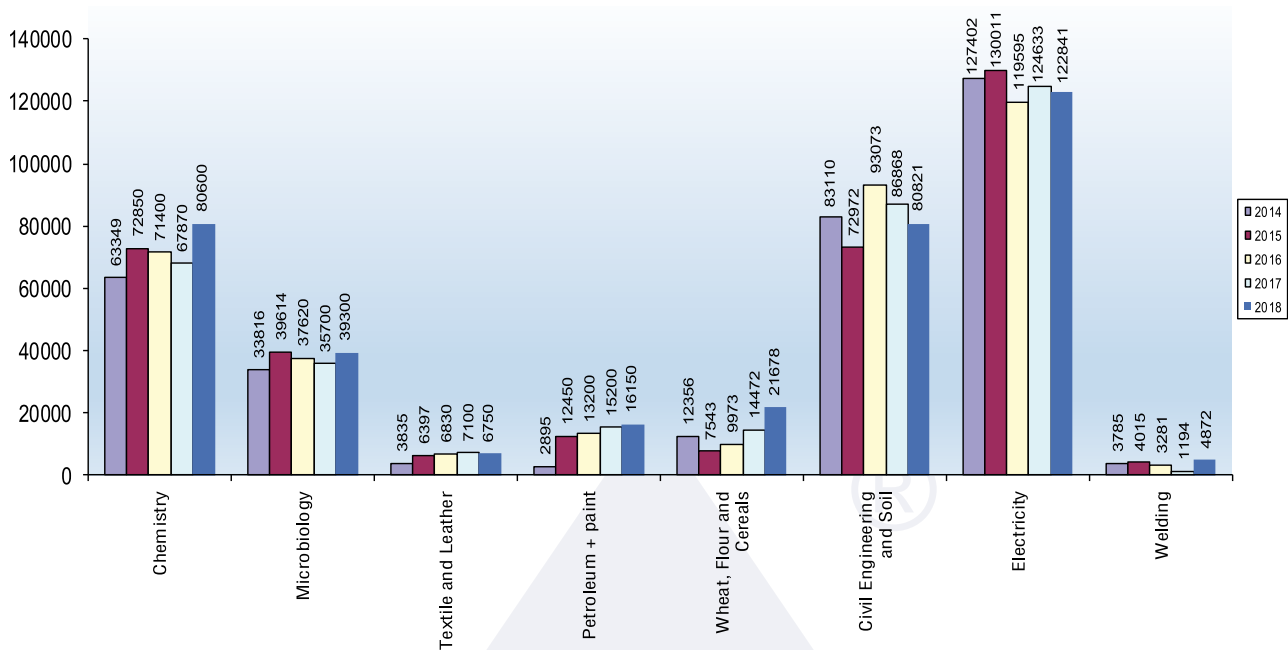
### Electrical laboratories

The electrical laboratories, which represent 33.4% of the overall laboratories operations, performed 123,000 experiments, down from around 124,000 in 2017.



### External Inspection

Activity	2013	2014	2015	2016	2017	2018
Gas storage tanks inspection	410	420	170	162	155	109
Fuel tanks inspection and calibration	53	51	70	93	50	41
Steam boiler inspection	120	132	108	81	99	188
Various pressure devices inspection						
<b>Total</b>	<b>583</b>	<b>683</b>	<b>348</b>	<b>336</b>	<b>304</b>	<b>338</b>
Local gas cylinders inspection and control	8000	8000	0	615750	649776	677600
Imported gas cylinders inspection and control	15000	29500	8920	0	5000	14784



## THE CENTRAL LABORATORY FOR GRAINS, FLOUR AND BREAD RESEARCH

“IRI served the Ministry of Economy and Trade, given its responsibility towards performing laboratory tests on imported wheat, as well as inspecting the majority of imported and locally produced goods”, said the Minister of Industry, Dr. Hussein Hajj Hassan, thanks to the close cooperation between the ministry and the institute. The tests conducted by the Central Laboratory for grains, flour and bread research, increased from 9,973 to 14,742 tests in 2017, and to 21,678 tests in 2018, by 47%.

## WELDING LABORATORIES

As for the number of welding operations, it nearly tripled to 4,852 compared to 2017.

## METROLOGY AND CALIBRATION LABORATORIES

The activity across different metrology laboratories declined during 2018 by 4.7% year-on-year, reaching 18,566 experiments compared to 19,689 experiments in 2017.

These laboratories received 1,998 metrology instruments.

The tests covered the fields of temperature, pressure, force, mass, dimensions and electricity.

The activities of the laboratories included:

### Temperature

Temperature laboratories received 551 instruments and performed 5,510 tests, representing an increase of 360 tests, by 7%, at a rate of 10 tests per device, which is the same rate since 2010.

### Pressure

The laboratories received 70 instruments destined for the pressure measurement. They were used to conduct 560 tests, at a rate of 8 tests per device, which is the same previous rate.

### Force

Six instruments were delivered to the metrology laboratories in order to measure the force. They were used to perform 72 tests, at a rate of 12 tests per instrument.

### Mass

The number of mass units reached 1,170 and they were used to conduct 10,816 tests, at a rate of 9.2 tests per unit.

### Dimensions

The number of units decreased to 113, and tests dropped to 904, at a rate of 8 tests per unit.

### Electricity

The number of tests on electrical equipment in 2018 increased to 52 instruments and to 416 tests, at a rate of 8 tests per unit.

### Other tests

As for the other tests, they reached 288 on 36 instruments.

Total Activity	2014		2015		2016		2017		2018	
	Item	Test	Item	Test	Item	Test	Item	Test	Item	Test
Temperature	408	4080	426	4260	512	5120	515	5150	551	5510
Pressure	59	472	68	544	87	696	96	768	70	560
Force	2	16	3	24	5	40	10	95	6	72
Mass	911	8480	964	9024	1062	9680	1298	11844	1170	10816
Dimensions	60	480	52	416	115	920	163	1304	113	904
Electricity	92	736	54	432	63	504	29	232	52	416
Other tests	8	64	47	376	43	344	37	296	36	288
<b>Total</b>	<b>1540</b>	<b>14328</b>	<b>1614</b>	<b>15076</b>	<b>1887</b>	<b>17304</b>	<b>2148</b>	<b>19689</b>	<b>1998</b>	<b>18566</b>

## CUSTOMS FILES

### IRI CONTROLLED 43,307 CUSTOMS FILES IN 2018

The economic slowdown in Lebanon during 2018 took a toll on the country's overall economic activity. It resulted in a decline in IRI's operations, particularly the control of customs files and their verification. This task was assigned to the Industrial Research Institute by the Lebanese government since 2005, in order to verify the conformity of the imported goods to mandatory Lebanese standards. The number of files dropped by 3.7% to 1,683 year-on-year, reaching 43,307 files compared to 44,990 files verified in 2017.

The decrease in files subject to verification exceeded the average decline in the total number of files, by 5.2%, from 33,062 files in 2017 to 31,354 in 2018.

In fact, the Syrian war and the closure of land border crossings to transit vehicles transporting merchandise by land from Jordan, Iraq, Turkey and sometimes from Saudi Arabia and Iran, led to a decline in the transit of goods, in both directions, through the Masnaa border crossing linking Lebanon to Syria.

In general, imports in Lebanon increased 2% in 2018 year-on-year, reaching \$19.9 billion. However, their weight dropped from 18.9 million tons to 15.8 million tons, mainly in metal products, machineries, electronics and transport equipment. Since the files verification processes include in general the electronic devices and machineries, their decline is the reason behind the decreasing number of verified files.

After the review, the files that were subject to scrutiny represented almost 72.4% of their total number. Eventually, 1,221 files did not comply with the mandatory requirements, accounting for 3.89% of the overall number. Hence, 1,135 were rectified, while the other 86 files were rejected.

The IRI is verifying around 60% of the files in their transit stations or under horizontal specifications. All the files are reviewed and returned to the applicants on the same day, while 40% of the goods under investigation enter warehouses before they are allowed to be marketed.

### **The files were subdivided into the following industrial sectors:**

#### **1- Files not subject to verification**

These are files received by the IRI, but not subject to any examination mechanism, because they are not governed by specific mandatory specifications that can be used for comparison. Their number increased from 4,594 in 2007 to 12,909 in 2016, after having surged to 13,071 in 2015. They dropped again to 11,928 files during 2017 and to 11,953 in 2018. They are not central to the verification process; the IRI effectively reviews them, stating only that they are not subject to investigation on the same day of their reception.

## 2- Pre-shipment verification

The number of merchandises files subject to prior verification in the exporting country, before being shipped to Lebanon, was 1,436 compared to 1,582 files in 2017.

## 3- Horizontal specifications

They represent 25% of the total number of files and 35% of the files coming under scrutiny. These files are reviewed and returned to the applicants on the same day. Their number increased from 4,300 in 2007 to 9,788 in 2016, and rose again to 10,935 in 2017 and 11,055 in 2018.

## 4- Verification of stocked merchandise

These files are checked after stocking the relevant merchandise. Their number have dropped from 13,360 in 2017 to 11,647 in 2018, by 1,713 files or 12.8%. They represent 26.9% of the total number of files and 37% of the files subject to investigation.

## 5- Verification at border crossings

The number of files subject to verification at border crossings increased by around 1% to 3,216 and as follows: 4,307 files were checked at the Beirut Airport, 2,835 files at the Port of Beirut, 6 files at the Masnaa border crossing, 67 files at the Port of Tripoli and 1 file in Saida.

## Customs Files 2018

Files type	Pre-shipment	Chemical	Electrical	Medical	Elevators	Mechanical	Energy	Paint	Pressure	Civil Engineering	Textile	Transport	Common files	Total
Number	1436	7939	11838	6314	212	857	152	2579	171	3572	3146	1645	3446	43307
Files subject to	1436	5832	7496	5514	159	424	83	692	64	3493	2544	1212	2405	31354
Files not subject to	0	2107	4323	800	53	433	69	1887	107	69	602	433	1035	11918
Files not subject to after inspection	0	0	19	0	0	0	0	0	0	10	0	0	6	35
Percentage of files not subject to	0,00	26,54	36,68	12,67	25,00	50,53	45,39	73,17	62,57	2,21	19,14	26,32	30,21	27,60
Non-conforming files	0	57	810	26	0	0	20	16	1	252	39	0	0	1221
Percentage of non-conforming files	0,00	0,98	10,81	0,47	0,00	0,00	24,10	2,31	1,56	7,21	1,53	0,00	0,00	3,89
Rectified files	0	19	799	9	0	0	20	10	0	252	26	0	0	1135
Rejected files	0	38	11	17	0	0	0	6	1	0	13	0	0	86



## Files distribution by type and border gates

Customs files subject to IRI's verification were distributed by merchandise type as follows:

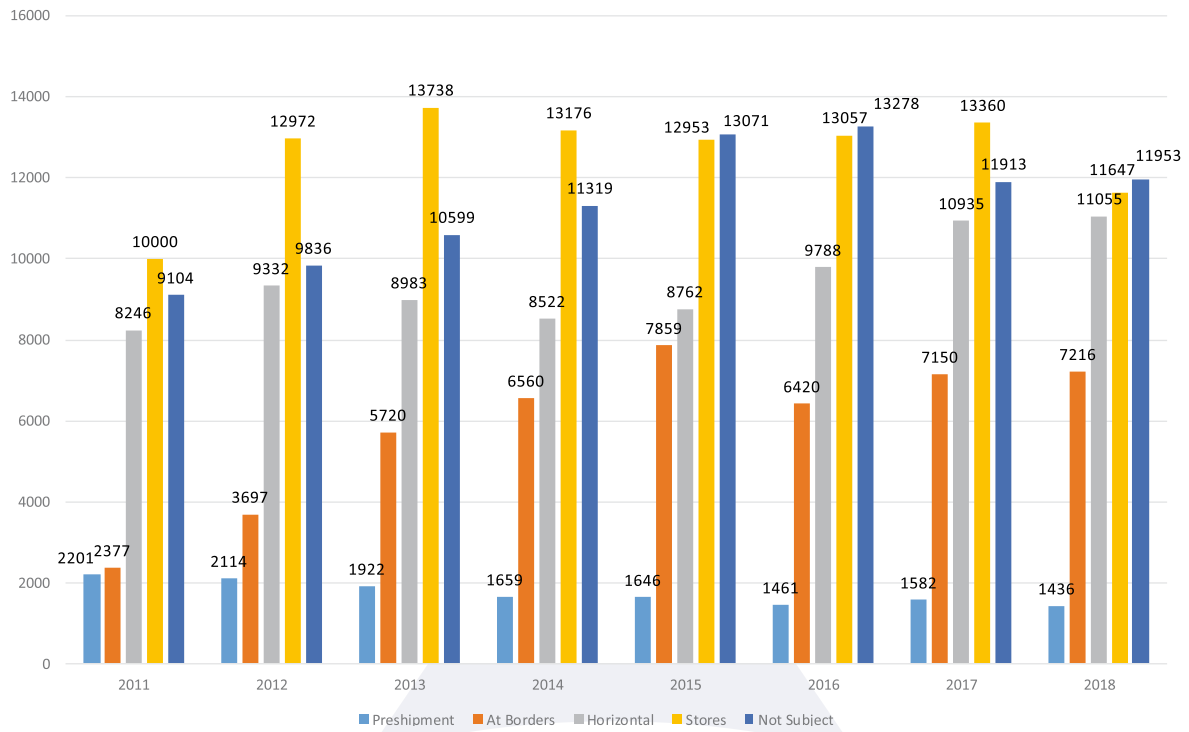
Electrical items and devices accounted for the biggest share, with 27.3% of the total, reaching 11,838 files. Along with the chemical devices and goods, and medical instruments, they represented more than half of the files. The number of chemical files reached 7,939, representing 18.3%, while the medical instruments files totaled 6,314, or 14.5%, followed by the clay and soil files, which reached 3,572 constituting 8.2%. The common files accounted for 3,443 or 7.9%.

There were 3,146 files for textiles, representing 7.2%, and 2,597 for paints, accounting for 6%. The number of car tires files reached 1,645, the mechanical engineering files 857, the energy files 152 and the pressure devices 172 files.

The Port of Beirut had a share of nearly 70.2%, with almost 30,401 files, followed by the Rafic Hariri International Airport in Beirut, with 28% or 12,139 files, and the Port of Tripoli with 681 files.

## Customs Files 2018

Files type	Pre-Shipment	Chemical	Electrical	Medical	Elevators	Mechanical	Energy	Paint	Pressure	Civil Engineering	Textile	Transport	Common files	Total
Masnaa	0	40	4	1	0	0	1	10	0	0	4	0	2	62
Port of Beirut	1436	5373	7912	1539	197	795	133	2343	144	3520	2803	1497	2709	30401
Arida, Aboudiyeh and Saida	0	0	1	0	0	0	0	0	0	0	21	0	2	24
Port of Tripoli	0	107	229	8	0	6	4	32	3	19	123	76	74	681
Beirut Airport	0	2419	3692	4766	15	56	14	194	24	33	195	72	659	12139
Total	1436	7939	11838	6314	212	857	152	2579	171	3572	3146	1645	3446	43307
Percentage	3,3	18,3	27,3	14,6	0,5	2,0	0,4	6,0	0,4	8,2	7,3	3,8	8,0	100,0



## CERTIFICATES OF ACCREDITATION

The Industrial Research Institute continued its efforts to strengthen and promote the Lebanese industry. Until the end of 2018, IRI awarded the ISO 9001 standard to 33 institutions (23 of them were from the industrial sector), the Environment Management System ISO 14001 to four institutions, the Food Safety System ISO 22000 to one institution and the Medical Devices Quality Management Systems ISO 13485 to four institutions. It also provided one institution with the OHSAS 18001, which aims at developing a set of specifications for occupational health and safety management systems.

### Product Accreditation Certificates

Since 2014, IRI granted the Certificate of Quality to 52 products from 14 different productive institutions.

### Qualified Individuals Certificates

IRI offers certificates to competent individuals enabling them to control the quality of systems and products, in cooperation with the French institution “AB Certification”.

These certificates were awarded as follows:

- IRCA Lead Auditor course according to ISO 9001:2015 & 14001:2015: 12 persons.

### Lebanese Welding Center Certificates

Under Law 423/2002 considering that “the Industrial Research Institute is designated as the Accreditation Body and the only organization authorized to issue certificates of conformity related to all types of welding in Lebanon”, the institute awarded 646 welding certificates through the Lebanese Welding Center (CLS), one certificate of inspection and 25 certificates of training in destructive testing.

## A - ELECTRICAL LABORATORY

### 1- Three Phase Power Calibrator and Tester (CALMET – C300B)

The C300B Calibrator and Tester is used for calibration and testing a wide range of measuring instruments used in power engineering. Three phase, class 0.02 and 0.05 power quality calibrator up to 120A (360A) and 560VAC with programmable power quality parameters. It enables automatic testing with calculating of errors and standard deviation of: electricity meters, electrical measuring transducers for converting a.c. electrical quantities, current instrument transformers, current clamps and protective relays.



### 2- Electrical Safety Tester (EATON SEFELEC – SXS56)

This safety tester can perform a number of electrical safety standards tests to meet international standard requirements.

- ground continuity test
- insulation test
- hipot test to perform a high voltage test
- leakage current measurement

The purpose of these tests is to validate that the product being tested is safe for the end user, and complies with the quality requirements from the Low Voltage Directive (LVD), applicable to the corresponding standards (IEC335, IEC950, IEC601, IEC1010, IEC598, IEC990, IEC204...)



### 3- Hipot Calibration Kit (SEFELEC – XS-91-1)

The XS-91-1 is used for calibration of high voltage test.



### 4- Insulation Calibration Kit (SEFELEC – XS-91-3)

The XS-91-3 is used for calibration of insulation test.



### 5- Ground Continuity Calibration Kit (SEFELEC – XS-91-4)

The XS-91-1 is used for calibration of ground continuity test.





## B- CLBW LABORATORY

### Aqua-TR

Automatic 64-crop grain moisture meter: measure moisture content, temperature, specific weight

#### 1- COMPLIANT

- With ISO 7971-2 standards.

#### 2- Fast

- Analysing and displaying the results takes 20 seconds (including emptying).

#### 3- ACCURATE

- Reliable and repeatable results with a one-litre sample volume.
- Specific adjustment to each type of grain.
- Automatic check of the sample volume.
- Manual or automatic activation of the vibrating hopper in the event of sticking.
- Automatic compensation of measurement based on outside temperature and/or grain temperature.
- 1000-measurement memory and possible to record data on a PC via the Aqua-Pro software.
- Operating temperature: 2 to 45 °C.



### Quatuor 2

Autodockage tester. Automatically measures grain impurities in a fast and accurate manner

#### 1- Efficient

- Centrifugal sieving.
- Brush to unstick particles on the sieve.

#### 2- Convenient

- Dedicated sieves per cereal are easy and fast to replace.

#### 3- Quick

- Get the results for 500 ml of grains in less than 90 seconds.



## C- MICROBIOLOGY LABORATORY

### The Rotor-Gene Q – designed to drive your research forward

Real-time PCR is a precision science that places high demands on the instrument, chemistry, and software. High thermal and optical uniformity, short equilibration times, and fast ramping rates are critical for precise and rapid quantitative analysis. Sensitivity, speed, and specificity are also highly dependent on the performance of the DNA polymerase and reaction components.



QIAGEN's real-time PCR cycler, the Rotor-Gene Q, combines multiple optimized design features to provide the outstanding performance and reliable results.

## D- WET CHEMISTRY LABORATORY

### Raman spectroscopy

**Raman spectroscopy** is commonly used in chemistry to provide a structural fingerprint by which molecules can be identified.

**Raman spectroscopy** plays an important role in both R&D and QA/QC in a variety of industries and academic fields such as polymers, raw materials, chemical reagents, pharmaceuticals, and more.



**Raman spectroscopy** has some unique advantages such as:

- Non-contact and non-destructive analysis
- No sample preparation needed
- Both organic and inorganic substances can be measured
- Samples in various states such as gas, liquid, solution, solid, crystal, emulsion can be measured
- Samples in a chamber can be measured through a glass window

A decorative graphic in the bottom right corner features several overlapping, semi-transparent circles in a gradient of colors from light yellow to deep magenta. The text "INTERNATIONAL ACCREDITATION" is centered within this graphic area.

**INTERNATIONAL  
ACCREDITATION**

## INTERNATIONALLY RECOGNIZED FROM THE WORLD'S MOST RIGOROUS ACCREDITATION BODIES

### 40 AUDITORS, 1000 DOCUMENTS, 30 INDICATORS AND 500 MAN-DAYS OF WORK

### IRI CONDUCTS 2000 TESTS FOR 1300 PARAMETERS WITH A SUCCESSFUL RATIO OF 97%

#### Quality management overview

The quality management section personnel, assisted by 40 trained auditors, keep and maintain a sound quality management system in accordance with ISO17025 & ISO 17020 requirements.

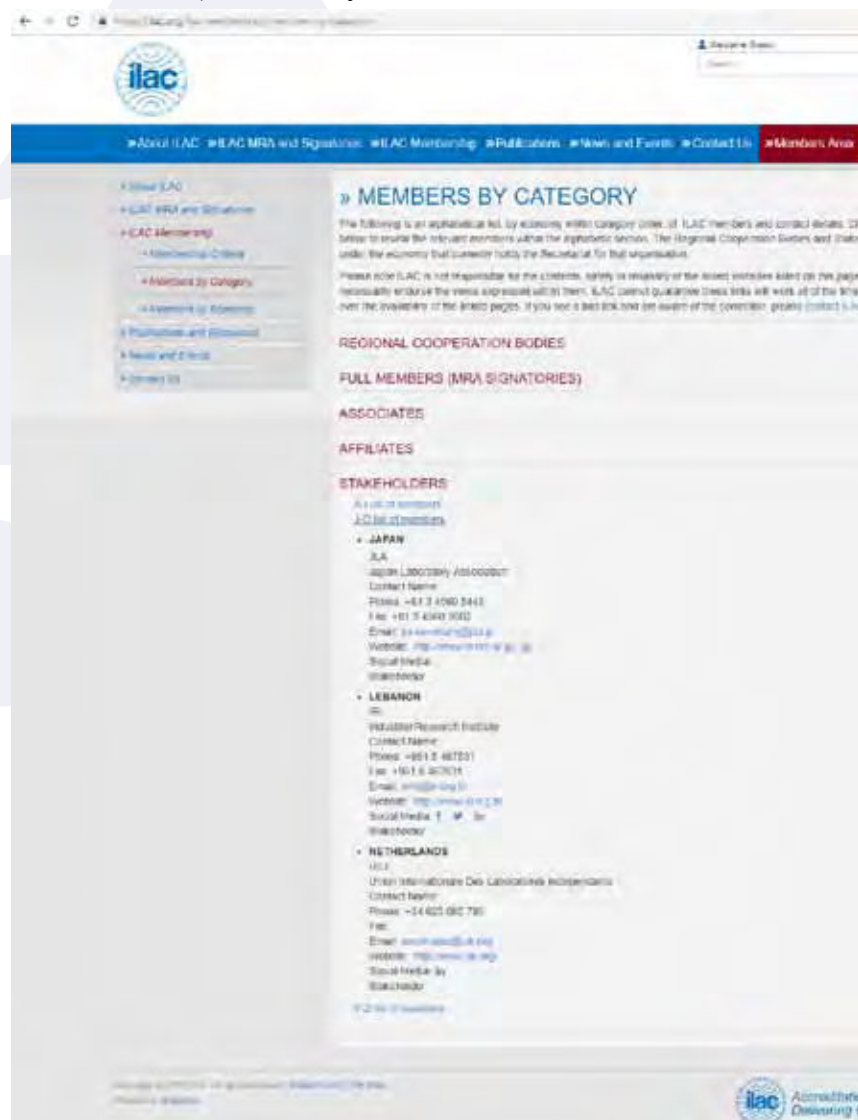
With 1,000 controlled documents, 30 Key Performance Indicators continuously monitored and 500 man-days of audits and assessments performed, the competence of IRI was recognized from the most rigorous accreditation bodies in the world (successively DAP, DACH, DAKKS, ACLASS and currently ANAB).

All of the accreditation organization mentioned 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 in all the world.

Beside 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, 2000 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 to ISO 17025 (since



The screenshot displays the ILAC website's 'MEMBERS BY CATEGORY' page. The page is organized into several sections:

- MEMBERS BY CATEGORY**: A heading for the main content area.
- REGIONAL COOPERATION BODIES**: A section listing regional cooperation bodies.
- FULL MEMBERS (MRA SIGNATORIES)**: A section listing full members who are MRA signatories.
- ASSOCIATES**: A section listing associate members.
- AFFILIATES**: A section listing affiliate members.
- STAKEHOLDERS**: A section listing stakeholders, with the following details:
  - JAPAN**:
    - ILAC
    - Japan Laboratory Association
    - Contact Name
    - Phone: +81 3 4060 3443
    - Fax: +81 3 4060 3000
    - Email: jla@ilac.or.jp
    - Website: http://www.ilac.or.jp
    - Social Media: Facebook, LinkedIn, YouTube
  - LEBANON**:
    - IRI
    - Industrial Research Institute
    - Contact Name
    - Phone: +961 2 487231
    - Fax: +961 6 807674
    - Email: info@iri.org.lb
    - Website: http://www.iri.org.lb
    - Social Media: Facebook, LinkedIn, YouTube
  - NETHERLANDS**:
    - IRI
    - IRI-RI International De Laboratoria's Independents
    - Contact Name
    - Phone: +31 4025 082 730
    - Fax:
    - Email: info@iri.nl
    - Website: http://www.iri.nl
    - Social Media: Facebook, LinkedIn, YouTube



2004) & ISO 17020 (since 2017). 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 to ISO 17065.

Details of the scopes of accreditations are available on the website: [www.iri.org.lb](http://www.iri.org.lb) in the accreditation section.

The scope of accreditation to ISO 17020 covers the inspection of imported goods subject to National decrees, inspection of goods for export as well as inspections according to customers' specific requirements. This quantitative and/or qualitative inspection covers the following fields:

- Electrical Appliances
- Ceramic Tiles
- Sanitary Wares
- Medical Items
- Food
- Cosmetics
- Petroleum products
- Glass
- Diapers
- Workbook

An extension of the accreditation scope was granted for the following products:

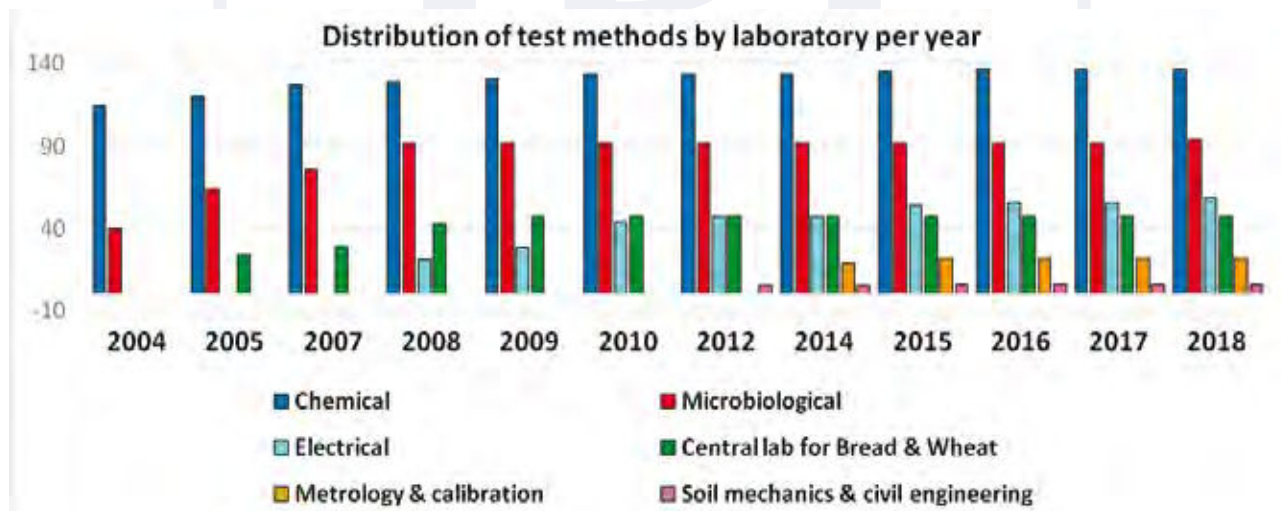
- Solar water heaters
- Fire extinguishers
- Gas cylinders
- Boilers

The scope of accreditation to ISO 17025 covers over 360 test methods in different fields as detailed below:

- **Chemical, physico-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,
- **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) and balances (on-site & in permanent laboratories),
- **Physico-mechanical** testing of cement and ceramic tiles.

An extension of the accreditation scope was granted for the following fields as detailed below:

Activity / Field	Item / Test	Standard / Method
Electrical	- Needle Flame test	- IT/ELC/43 based on: IEC 60695-11-5, IEC 60335-1 (Clause 30.2.4), NL EN 60335-1 (Clause 30.2.4)
	- Resistance to Mechanical Stresses - Impact test	- IT/ELC/42 based on: IEC 60898-1 (Clause 9.13.2), NL 47 (Clause 9.13.2)
Microbiological testing	- GMO Screening for NOS terminator - GMO Screening for 35S Promoter (In food and animal feedstuffs)	- ISO 21569





## CERTIFICATE OF ACCREDITATION

### ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

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

has been assessed by ANAB  
and meets the requirements of international standard

### ISO/IEC 17025:2005

while demonstrating technical competence in the fields of

### CALIBRATION AND TESTING

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations and/or tests to which this accreditation applies.

ACT-1898  
Certificate Number



ANAB Approval

Certificate Valid: 11/02/2018-08/29/2020  
Version No. 004 Issued: 11/02/2018



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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).



# CERTIFICATE OF ACCREDITATION

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**Lebanese University Campus, IRI Building, Hadath (Baabda)**

**Beirut, Lebanon 11-2806**

has been assessed by ANAB  
and meets the requirements of international standard

**ISO/IEC 17020:2012**

while demonstrating technical competence in the field of

**INSPECTION**

Refer to the accompanying Scope of Accreditation for information regarding the types of inspections to which this accreditation applies.

AI-2499

Certificate Number

ANAB Approval

Certificate Valid: 11/02/2018-8/29/2019  
Version No. 002 Issued: 11/02/2018



This inspection body is accredited in accordance with the recognized International Standard ISO/IEC 17020:2012. 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)





**INTERNAL  
& EXTERNAL  
ACTIVITIES**

## IRI'S ADMINISTRATIVE DIRECTOR, SALIM KFOURY, PARTICIPATES IN EGYPT IN THE ARAB CONFERENCE FOR CREATIVITY, INNOVATION AND COMPETITIVENESS AND THE 18TH MEETING OF THE ARAB INDUSTRIAL RESEARCH CENTERS

### Hurghada - Republic of Egypt - 1-4/10/2018

Lebanon's Industrial Research Institute (IRI) was represented by its Administrative Director, Salim Kfoury, in the Arab Conference for Creativity, Innovation and Competitiveness, and in the 18th meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries, in the Egyptian city of Hurghada, between the 1st and the 4th of October 2018.

At the invitation of the Arab Industrial Development and Mining Organization (AIDMO), and hosted by the Central Metallurgical Research and Development Institute (CMRDI) in Egypt, the 18th meeting of the Industrial Research Centers in Arab countries was held in Hurghada (on 3-4/10/2018), with the participation of the Committee members and experts from the Arab world (Tunis, Sudan, Iraq, Palestine, Lebanon, Libya and Egypt).

Concurrently with the Committee meeting, the Arab Conference for Creativity, Innovation and Competitiveness also took place (Hurghada on 1-4/10/2018), along with an exhibition for the most important products and research findings. It was attended by the Central Metallurgical Research and Development Institute (CMRDI), the Egyptian Ministry of Military Production, the Science and Technology Development Fund (STDF), the Technology, Innovation and Commercialization Office (TICO) at Al Azhar University (Qena) and the European Union Office in Egypt.

### Arab Conference for Creativity, Innovation and Competitiveness

The Arab Conference for Creativity, Innovation and Competitiveness was organized by the Arab Industrial Development and Mining Organization (AIDMO), in cooperation with the Central Metallurgical Research and Development Institute (CMRDI), which is affiliated to the Ministry of Higher Education and Scientific Research in Egypt. The conference focused on the state of creativity, innovation and competitiveness in the Arab world and the concerted efforts aimed at strengthening the



innovation in the region, and highlighting the importance of creative ideas and how to turn them into marketable projects and products.

The conference addressed important subjects related to science, technology, entrepreneurship and creativity, including: to enhance the role of scientific research and technological development to serve the Arab industry; to promote innovation and applied researches that are convertible to goods and services; to provide incentives for the private sector to increase investments in research, developments, creativity and to strengthen the industrial sector competitiveness; to support the creativity and innovation system in the Arab world; to enhance the role of creativity and innovation in raising the Arab industrial competitiveness amid the challenges of the Fourth Industrial Revolution and the future impacts of the artificial intelligence on the Arab economic development; and to promote the creativity and innovation systems inside universities and scientific institutions, as well as the private sector role in offering incentives to companies in order to establish innovation and technological development centers.

The Arab Conference for Creativity, Innovation and Competitiveness included five sessions dealing with 23 working papers submitted by 9 Arab and 14 Egyptian experts and scientists, as well as a panel discussion on obstacles faced by technology companies - SME support mechanisms. The conference was attended by 68 participants.

The 18th meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries was concurrently held with the Arab Conference for Creativity, Innovation and Competitiveness.

### **Recommendations:**

- 1- To cooperate and link universities with local and international research centers, plants, institutions and production companies (Arab program to link academia with industry).
- 2- To encourage entrepreneurship for projects serving sustainable industrial development, particularly among university youths in order to commercialize innovations and optimize industrial clusters.
- 3- To conduct a case study on models of leading countries benefiting from scientific research and innovation output, such as China and South Korea, and apply them in the Arab countries to reach clear and specific mechanisms.
- 4- To set a general objective for the scientific research and innovation in the Arab countries, aiming at reducing imports in the industrial sector, including spare parts for example.
- 5- To enhance the role of centers and institutions in transferring technology to raise the competitiveness of Arab industries.
- 6- To focus on success stories in terms of turning innovations into industry.
- 7- To make visits, hold meetings and conduct joint researches between industrial centers.
- 8- To endorse support mechanisms for research projects aiming to solve industrial issues and benefit all cooperating parties.
- 9- To improve the percentage of design and innovation in the overall local product.
- 10- To develop clear mechanisms to support innovation and patents in Arab universities and

- research centers, and to transfer them to the producer.
- 11- To organize sessions to train scientists on how to build partnerships with the industry or funds to implement ideas and establish startups.
  - 12- To link investor with innovators through the “Ideas Bank” or the “Creativity Bank”.
  - 13- To call for the creation of the Arab Network for the Plumbing Industry Development in the Arab world.
  - 14- To call for harnessing the Fourth Industrial Revolution and studying its associated downsides.

### **Eighteenth meeting of the Coordinating Committee for the Arab Industrial Research Centers**

The 18th meeting of the Coordinating Committee for the Arab Industrial Research Centers was opened with an address by the representative of the Arab Industrial Development and Mining Organization (AIDMO), Eng. Saleh Aljaghdaif, Director of Research and Development Department. He welcomed the participants in the meeting, conveying the greetings of Eng. Adel Al-Saqer, AIDMO’s Director General, and his concerns regarding the importance of the outcomes of AIDMO’s Advisory Committee. The organization’s representative mentioned the Committee’s objectives and mission, warmly thanking IRI’s Director General, Dr. Bassam Frenn, the president of the Committee’s 17th meeting, as well as his associates. He also thanked Prof. Dr. Taha Mattar, the President of Central Metallurgical Research and Development Institute (CMRDI), for hosting the 18th meeting of the Committee. He gave an overview of the outcomes achieved by the Committee since its creation and up to the 18th meeting. He also acknowledged its future role in helping and preparing the Arab countries to join the Fourth Industrial Revolution.

Then, Prof. Dr. Taha Mattar, the President of Central Metallurgical Research and Development Institute (CMRDI), was nominated as Chairperson of the 18th meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries. Eng. Saleh Aljaghdaif, AIDMO’s Director of Research and Development was nominated as the meeting rapporteur, and the Drafting Committee selection (Tunis, Sudan, Iraq and Egypt).

The participants in the 18th meeting of the Coordinating Committee for the Arab Industrial Research Centers discussed the agenda items and reached these main recommendations:

#### **Recommendations:**

##### **1. Implementation status of the recommendations formulated by the 17th meeting of the Coordinating Committee for the Arab Industrial Research Centers:**

- The Committee was briefed on the organization’s efforts and the progress in preparing the technical studies in selected areas (water - renewable energy - food industries). The Committee appreciated these efforts and considered that the five studies carried out until now were adequate and sufficient. It urged the organization to disseminate the studies to focal points in the Arab countries in order to benefit from them and refer them to relevant national centers.

- To spread the link of the web portal, designed by the organization, to the Committee members in order to cooperate on enhancing its content, communicating and exchanging views through the interactive basis ([www.aidmo.org/accirc](http://www.aidmo.org/accirc)).
2. To call upon the focal points of the Coordinating Committee for the Arab Industrial Research Centers to submit their views on how to prepare the Arab countries to embrace the Fourth Industrial Revolution. These views will be presented during the Arab countries preparations regarding the “Arab Artificial Intelligence and Technological Prospects amid the Fourth Industrial Revolution organized by AIDMO (The 2019 Plan). The meeting participants thanked the ESCWA on its invitation to host this seminar and helping in organizing it. Dr. Fouad Mrad, ESCWA’s representative called for the seminar to be held in Beirut during 2019.
  3. To call upon the Arabic countries to introduce or develop legislations that support or boost the scientific and technological research, as well as innovation.
  4. To call upon the Committee’s focal points in the Arab countries to benefit from the programs presented by the European Union to support the scientific and technological research, and to promote innovation (including PRIMA and Horizon 2020).

On the sidelines of the meeting and in light of the coordination and integration between industrial research stakeholders in the Arab world, a framework Memorandum of Understanding was signed between the Applied Industrial Research and Development Center in Libya and the Central Metallurgical Research and Development Institute in Egypt.



## IRI'S TECHNOLOGY AND DEVELOPMENT DIRECTOR, DR. IMAD HAGE CHEHADE PARTICIPATES IN IBEF, THE ECONOMY PROMOTION PROJECT AND THE TRAINING OF SENIOR STAFF ON QMS AUDIT

**The Technology and Development Director at the Industrial Research Institute, Dr. Imad Hage Chehade, took part in internal and external activities, including:**

1- For the ninth consecutive year, Dr. Chehade represented the Industrial Research Institute in the International Beirut Energy Forum (IBEF), which was held at Le Royal Hotel, from September 26 to 28, 2018.

As usual, the institute had a constant presence through its participation in lectures and activities. It also maintained a stand displaying IRI's general activities related to the energy sector.

Meetings were held with energy companies and stakeholders from Lebanon and abroad in order to assess the potential for cooperation.

Furthermore, Dr. Chehade participated in the National Consultation Meeting on the "Green Neighborhood Project" proposed by the Green Climate Fund (GCF), to discuss the project's feasibility.



2- Amid the continuous development of its human resources, systems and services, the Industrial Research Institute and its international partner Fréa, organized a training session on Quality Managements



Systems (QMS) auditing in compliance with the revised standard ISO 9001-2015.

IRI’s senior staff, as well as auditors from Lebanese institutions, underwent international tests qualifying them to perform the audits in accordance with the requirements of the International Register of Certificated Auditors (IRCA).



The Director General of Fréa, George Abi Rached and Dr. Imad Hage Chehade from IRI were involved in the training of the participants.

- 3- As part of the technical cooperation project “Quality Infrastructure for the Promotion of Trade and Consumer Protection”, the Industrial Research Institute participated as a member in the project’s Steering Committee, represented by Dr. Imad Hage Chehade, in its first meeting in Amman on July 30 and 31, 2018. Participants included the project manager Karl Wolf, European experts and representative of 4 beneficiary countries: Lebanon, Jordan, Egypt and Palestine. The participants followed up on the decisions of the meeting for the project launching, which was held in Beirut during 2017. They made observations regarding the obstacles they are facing, and discussed their possible reasons.





# PROF. JOSEPH MATTA REPRESENTS THE IRI IN WORKSHOPS, SEMINARS AND RESEARCH, SCIENTIFIC AND ENVIRONMENTAL CONFERENCES ORGANIZED BY UNIVERSITIES AND GLOBAL SPECIALIZED BODIES IN LEBANON AND ABROAD

## 1- First Joint USJ/AUB Research Workshop

The Industrial Research Institute, represented by Professor Joseph MATTA, participated in the “First Joint USJ/AUB Research Workshop”, organized by the Lebanon’s two oldest universities AUB and USJ at Campus of Innovation and Sports, USJ on January 19, 2018.

The workshop allowed the scientific institutions representatives to exchange among each other on the progress they made in the applied research field in general and especially in biomedical sciences and engineering.



## 2- Environmental Impact Assessment Study

As part of the cooperation with public institutions, to safeguard the citizen’s health and safety, the Industrial Research Institute, represented by Professor Joseph Matta, participated in the meeting on the “Environmental Impact Assessment for a Hazardous Waste Facility Installation and Operation Project in Beirut”, in the Ministry of Environment on March 29, 2018.



## 3- Medtest II Project

Professor Joseph MATTA, completed a training on the integrated approach for introducing resource efficiency, cleaner production, material flow



cost accounting and management systems in industries. Professor MATTA participated in the transfer of Environmentally sound technology in the southern mediterranean region and in the

implementation of UNIDO MED TEST II project, as part of the EU funded SwitchMed programme, in the lebanese industry.

#### 4- 7th International Congress of the Faculty of Pharmacy USJ

Professor Joseph MATTA represented Dr Bassam FRENNE, in the 7th International Congress of the School of Pharmacy, held on April 12, 2018 at the Medical Sciences Campus Saint Joseph University of Beirut USJ in partnership with the Lebanese Ministry of Public Health (MOPH), with the participation of the executive committee of the Scientific Association of Colleges of Pharmacy in the Arab World.



Professor MATTA emphasizes on maintaining close co-operation with universities, official institutions and industrial organizations and mentions the studies conducted as well as the applied research performed at IRI in this field.

#### 5- Sécurité et Qualité des produits agroalimentaires – SQUAD 2

The Industrial Research Institute, represented by Professor Joseph MATTA, participated in the second international conference of « Sécurité et Qualité des produits agroalimentaires – SQUAD 2», that took place at the Chamber of Commerce, Industry & Agriculture of Tripoli & North Lebanon on 12- 14 April 2018. This congress gathered national and international scientists to discuss problems and solutions related to food safety issues.



This congress gathered national and international scientists to discuss problems and solutions related to food safety issues.

Professor Joseph MATTA addressed the subject from a scientific perspective and shared the IRI efforts on the innovative testing methods and applied research as diagnostic tools and prevention techniques for the control of hazards within the food sector.

#### 6- LIRA Funds 2018 accepted projects

Professor Joseph MATTA was awarded a prize in the 14th annual Lebanese Industrial Research and Achievements “LIRA 14 - Forum of Technology and Industrial Innovation” held on 15 May 2018. The applied research innovative project was developed with Saint Joseph University USJ as part



of scientific collaborations and concretizes the strategic vision of IRI regarding the valorization of innovation and the transfer of technology, to support industry and innovation, which has been executed following three main axes:

The planning and development of technical knowledge through different internationally accredited laboratories, the performance of the organizational system through the Quality approach and the certification, the interactions and scientific collaborations through the development of a network of national and international partners at the highest level.

### 7- 9th Research Day at the USJ

The Vice-Rector of Research of Saint Joseph University of Beirut (USJ), in collaboration with l'Agence Universitaire de la Francophonie (AUF), organized a Research Day on Monday, June 21, 2018 at the campus of the medical sciences in the USJ. Professor Joseph MATTA, representing the Director General of the Industrial Research Institute (IRI) Dr Bassam Frenn, explained IRI's strategic vision for the valorisation of research, innovation and technology transfer that has been carried out next to the development of technical knowledge through internationally accredited laboratories covering the different industrial fields and providing many essential services in the field of applied research, compliance, quality, analytical tests and the application of mandatory standards.



In addition, the establishment of specialized centers that provide support for industry and innovation, are focused on simultaneously addressing the needs of Lebanese industries, in particular through the establishment of the European Center for Industrial Modernization (ELCIM). ) whose activities focused on supporting local SMEs in the areas of technical and financial management; the Lebanese Cleaner Production Center (LCPC), whose ultimate objective is to encourage and help industries to use clean technologies in their production processes, but also through the establishment of the Center for Innovation and Technology (CIT) which has worked with its network of academic relays to serve the Lebanese industry soliciting innovative technologies.

### 8- Validation workshop on Natural Soap producers

The Industrial Research Institute, represented by Professor Joseph MATTA, participated in the National Validation workshop on Natural Soap producers, organized by The United Nations Conference on Trade and Development (UNCTAD) in collaboration with the Lebanese Ministry of Economy and Trade (MoET) on 12





September 2018.

The aim of this conference is to enhance exports of natural soap products.

The workshop involved many interventions from many soap producers, who explained the problems they face in exporting their products. Professor Joseph Matta addressed the subject from a scientific perspective and described the IRI activities in this field such as testing, quality control, as well as the specialized technological consulting services to support natural soap producers to comply with international standards. He mentions the studies conducted as well as the applied research performed at IRI in the cosmetic field in general.

The discussion showed broad agreement on a wide set of actions to advance the sector. Among these were the following actions:

- Develop a specialized cluster for the soap industry can potentially be a sustainable solution, allowing it to become more competitive on the national and international scale
- Enhancing the infrastructure of soap production

## 9- 2nd Nutrition and Food Technology Conference

Professor Joseph MATTA, participated as a Keynote speaker in the 2nd Nutrition and Food Technology Conference, organized by Saint Joseph University (USJ) - Faculty of Pharmacy Department of Nutrition on 25th - 26th October 2018.

Professor Joseph MATTA addressed the subject related to Food Quality Control. He highlights that food quality and safety is directly related to the process of continuous development of economy and society. He exposes new problems, new contradictions and foodborne diseases that are rising every year. Professor MATTA emphasizes that success of international food trade depends greatly on the structure and degree of control at the national level along with compliance with international agreements. Reducing the food risk requires that the industry produce



safe, high-quality food and that all governments have food-control systems in place to ensure that. It is a balancing act for which government-industry integration is critical to success. Professor MATTA stresses that each government has a responsibility to provide a national food-control system with a supporting infrastructure, to assume an advisory and regulatory role and, when necessary, to enforce food laws and shared the IRI efforts on the imported food inspection in Lebanon. Professor MATTA discusses the different types of approaches for managing risks related to imported food, the effectiveness of the control measures and provides, after the combination of the analysis, recommendations to protect Lebanon's import food safety measures as well as policy proposals.

### 10- Research Excellence Award

The National Council for Scientific Researchy (CNRS) and Saint Joseph University (USJ) celebrated on October 30th, at the university campus, the success of the scientific researchers who were granted the Research Excellence Awards, including for the third time, Professor Joseph MATTA, Applied Research and Testing Acting Director at IRI.

The Research topic awarded focused on Treatment and recovery of oil mill effluents in Lebanon.

These researches awarded reflected the importance of cooperation between IRI, USJ and the CNRS in the promotion of applied scientific researches to support innovation and excellence for the industrial development, which is one of the IRI's top priorities.



### 11- IRI represents Lebanon internationally as an associated member in Eurolab Berlin

Professor Joseph MATTA, representing IRI and its Director General Dr Bassam FRENN, participated

in in the general assembly held in Berlin (Germany) on 15-16/11/2018, as an international associated member in the European Federation of national associations of measurement



testing and analytical reference laboratories (EUROLAB). IRI took part in the technical committees for laboratories international accreditation and placed Lebanon, once again, in an international scientific position.

### 12- These Cynthia Bou Serhal POP

Professor Joseph Matta participated in the doctoral thesis jury at the Lebanese University - Ecole doctorale en sciences et technologie on december 4th, 2018. The thesis entitled “Total oxidation of volatile organic compounds (VOCs) on transition metal catalysts prepared by the hydrotalcite method”, was carried out under joint supervision between Littoral Cote d’Opale University (France) and the Lebanese University.



This participation and the research topic revealed the importance of cooperation between IRI and the academic sector in the promotion of applied scientific researches to support industrial improvement.

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### 13- ISO MENA STAR national trainee

As a national expert for the Environment ISO MENA STAR project, Professor Joseph MATTA participated actively as national trainee in the area of environmental management and life cycle assessment (ISO 14001, ISO 14040 AND ISO/TR 14044) implemented from 2016 to 2018.

The ISO MENA STAR project aims to strengthen the institutional infrastructure on standards and regulations to support business and industry



### 14- Visits by university students delegations

Lebanese University delegations visited IRI’s laboratories to learn about the institute’s scientific developments, particularly the progress in the fields of environment, public health, petrochemicals, food safety, cosmetics, etc.





## THE CENTRAL LABORATORY FOR GRAINS, FLOUR AND BREAD RESEARCH CONDUCTED 9 THOUSAND TESTS ON WHEAT AND BARLEY

### Eng. Amine Jbeily represents the Central Laboratory in Hungary, Netherlands and Taipei to enhance the food quality and safety and to protect consumers

IRI's Director General, Dr. Bassam Frenn, showed a special interest in activities and issues contributing to food quality, safety and security for the people's health and wellbeing. In order to follow up on these pressing topics, he delegates Eng. Amine Jbeily, Head of the Central Laboratory for grains, flour and bread research, deputy national delegate, and Chair of the Technical Committee of the Vienna-based International Association for Cereal Science and Technology (ICC).

1- Eng. Jbeily represented IRI and ICC in the 30th meeting of International Organizations Working in the Field of Methods of Analysis and Sampling (Inter-Agency Meeting; IAM-30), and the meeting of the Codex Committee for Methods of Analysis and Sampling (CCMAS) in Budapest, Hungary, from April 5 to 7, 2018, to stay abreast of the latest activities in standardization and validation.

### 2- Dietary Fibers and Fermentation

Eng. Jbeily also attended the 7th International Dietary Fibers Conference 2018 - Fiber Diversity in Food, Fermentation and Health in Rotterdam, the Netherlands from June 4 to 6.

The conference focused on the importance of dietary fibers intake on "gut microbiota" and their beneficial effects on the health and wellbeing of the consumers, as well as the strategies that governments could adopt to encourage the consumption of whole grain products.



### 3- Food Safety Standardization Methods

During the last two decades, the Industrial Research Institute strongly supported the re-establishment of the national "Quality Infrastructure", particularly the development of modern Standardization and Standards that would serve as a strong foundation to promote various vital economic sectors, such as industry, agriculture and trade. IRI's role evolved from being a national key player, to an international decision maker contributing to the development of global standards and testing methods.



In this context, Eng. Amine Jbeily was invited as a speaker to the conference held in Taipei, Taiwan, on “Grains for Wellbeing”, to present the most recent developments of standardization methods related to food safety and quality, emphasizing the crucial role that these methods will play in the future as a tool to tackle the problems emerging from intensified farming, adulteration, food security and global warming.

During his stay from November 5 to 8, Eng. Jbeily visited prominent institutes in the food and cereals industries, to discuss the latest R&D issues.

#### 4- Solid Ground to Guarantee Quality

During the months of October, November and December, IRI launched a project laying out a strong foundation for the food quality and safety assurance in the future.

Agricultural crops, such as wheat, are crucial for national food security, as well as the development of rural areas and a wide industrial sector (mills and bakeries).

Quality control and grading of wheat, according to the latest testing technologies, are the cornerstone for developing the capabilities of this sector.

For this reason, the Industrial Research Institute, through the Central laboratory for grains, flour and bread research, took on the monumental challenge of fulfilling this task by supervising the reception and sampling of locally grown wheat crops according to ICC 101/2 and ISO 24333, and on-site testing, using automated and highly accurate instruments that conduct tests in compliance with international standard methods (ICC 102, ICC 110/1, ISO 712, ISO 7970 and ISO 7971-3).

Results are issued immediately, which allows the engineers to base their verdicts on precise results rather than on highly controversial visual examinations.

For the long-term goals, this transparent, science-based approach will motivate farmers to improve their agricultural practices and consequently the “grade” of their crop.

Throughout this period, 9,054 tests were conducted on 1,509 samples of wheat and barley.

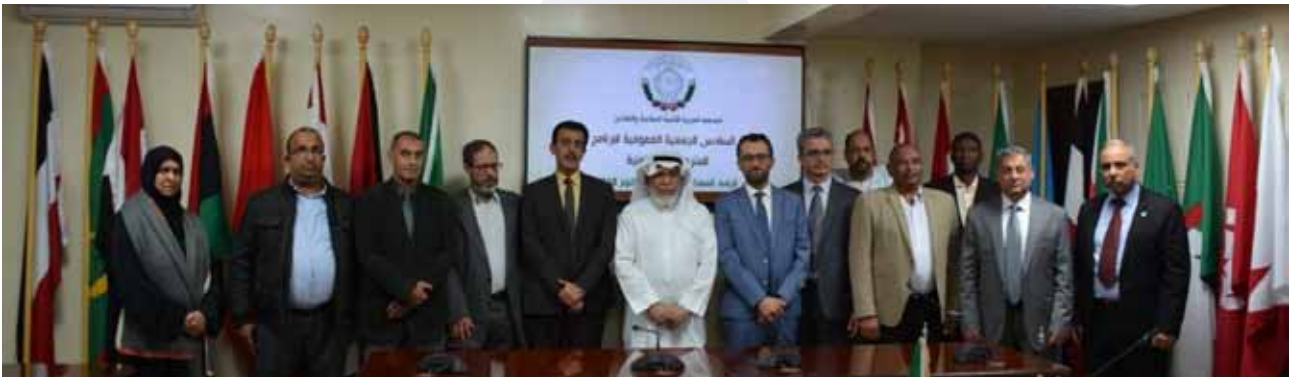




## 1- IRI'S ENG. ELIAS MAALOUF ELECTED VICE CHAIRMAN OF ARAMET

**Rabat - 19/11/2018**

During the sixth General Assembly of the Arab Program for Scientific and Industrial Metrology (ARAMET), held at the headquarters of the Arab Industrial Development and Mining Organization (AIDMO), in Rabat, Kingdom of Morocco, IRI's Head of Metrology Laboratory Eng. Elias Maalouf was unanimously elected as the Vice Chairman of ARAMET. Its primary tasks consist of qualifying the member states in the Arab Program to sign the Mutual Recognition Arrangement with members of the International Bureau of Weights and Measures (BIPM), known as the CIPM-MRA agreement. The Industrial Research Institute is a member in all technical specialized committees and working groups associated with the program and responsible for the training, development and information exchange.



## 2- IRI PARTICIPATES IN TUNIS IN A SCIENTIFIC AND INDUSTRIAL METROLOGY WORKSHOP

**Tunis - July 2 to 4, 2018**

As part of the Arab joint action in metrology and calibration, and in the context of strengthening the role of the Arab Program for Scientific and Industrial Metrology (ARAMET) in qualifying Arab member states, the Arab Industrial Development and Mining Organization (AIDMO), organized in cooperation with Tunisia's National Agency of Metrology (ANM), a workshop on Scientific and Industrial Metrology in Tunis from July 2 to 4, 2018.

The Industrial Research Institute participated in the workshop, represented by the Metrology Laboratory Head Eng. Elias Maalouf, and the Laboratories Division Head Professor Joseph Matta, along with representatives from metrology national institutes in Egypt, Mauritania, Morocco, Sudan, Libya, Iraq and Palestine.



The workshop revolved around major topics, including:

- The quality infrastructure map at the national, regional and international levels
- International requirements to participate in technical efficiency experiments
- Importance of uncertainties calculation in measurements and its impact on technical efficiency experiments
- How to use quality control charts
- Metrology terms and definitions published by international organizations

### 3- STUDY VISIT ON THE ORGANIZATION OF A NATIONAL METROLOGY SYSTEM IN BRATISLAVA, SLOVAK REPUBLIC

The Industrial Research Institute represented by the Head of Metrology Laboratory, Eng. Elias Maalouf, and the Unit Head Mr. Edgar Shaaya, participated in a study visit on the organization of a National Metrology System in Bratislava, Slovak Republic from 5th to 9th of November 2018.

This visit has been organized by the German Federal Institute of metrology



Physikalisch - Technische Bundesanstalt (PTB) in cooperation with the Slovak Legal Metrology (SLM) within the project “Quality Infrastructure for the Promotion of Product and Consumer Protection”.

The following topics have been discussed:

1. General outlines of the metrology system in the Slovak republic
2. Authorization and registration of legal metrology activities
3. Role of the National Metrology Institutes
4. National measurement standards system
5. Verification of legally controlled measuring instruments
6. Conformity assessment of measuring instruments
7. Industrial metrology in economical enterprises

The mission has included visits to the National Slovak Metrology Institute (SMU), Slovak Legal Metrology Institute (SLM) and Volkswagen Metrology Center.

## CUSTOMIZED REAL TIME PCR TRAINING

In the city of Darmstadt also known as the city of science in Germany, the microbiology laboratory head Eng. Hovig Kouyoumdjian participated in a customized professional training on latest Real Time PCR methods for the detection and quantification of GMOs and Pork DNA detection.

During the three days visit, current and future testing challenges were discussed in the R-biopharm laboratories and the possibility to use RT-PCR on new testing methods in food and cosmetics testing.





**APPLIED RESEARCH  
& STUDIES**

## THE INSTITUTE PERFORMED 15 ENVIRONMENTAL AND TECHNOLOGICAL STUDY AND ANALYZES

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 15 studies and analyzes in 12 factories, among which studies in environmental auditing and in environmental analyzes and technical field studies, as follows:

### Comprehensive Environmental Analyzes and Technical Field Studies

- Chemipaint s.a.r.l.
- Municipality of Mtein and Mchikha
- Sustainable Environmental Solutions
- Cimenterie Nationale s.a.l.
- Municipality of Rachiine
- Unipack Tissue Mill s.a.l.
- Filitex s.a.l.
- Solicar s.a.l.
- Lebanon Chemicals Co. s.a.l.
- Liban Cables
- Cosmaline s.a.l.
- Algorithm s.a.l.







**SCIENTIFIC  
PUBLICATIONS**

Scientific research plays a crucial role in the progress and development of societies, resulting in better living conditions. During 2018, the Industrial Research Institute had many contributions in this regard and the findings appeared in international scientific publications, supporting the progress of science and knowledge. Professor Joseph Matta, IRI's Acting Director of Applied Research and Testing, published scientific researches on health, food and environment issues.

ScienceDirect

Journal of Clinical Densitometry  
Volume 22, Issues 4, July-September 2018, Pages 440-451

Original Article

### Positive Correlations Between Free Vitamin D and Bone Variables in a Group of Young Lebanese Women

Amr Khaw<sup>a,\*</sup>, Youssef Samaha<sup>b</sup>, Youssef Hammad<sup>c</sup>, Elwanis Elwanis<sup>d</sup>, Elwanis Elwanis<sup>e</sup>, Angelina Samra<sup>f</sup>, Youssef Samra<sup>g</sup>, Youssef Samra<sup>h</sup>, Youssef Samra<sup>i</sup>, Youssef Samra<sup>j</sup>, Youssef Samra<sup>k</sup>, Youssef Samra<sup>l</sup>, Youssef Samra<sup>m</sup>, Youssef Samra<sup>n</sup>, Youssef Samra<sup>o</sup>, Youssef Samra<sup>p</sup>, Youssef Samra<sup>q</sup>, Youssef Samra<sup>r</sup>, Youssef Samra<sup>s</sup>, Youssef Samra<sup>t</sup>, Youssef Samra<sup>u</sup>, Youssef Samra<sup>v</sup>, Youssef Samra<sup>w</sup>, Youssef Samra<sup>x</sup>, Youssef Samra<sup>y</sup>, Youssef Samra<sup>z</sup>

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Received 12 September 2017; Accepted 23 January 2018; Available online 23 March 2018

Keywords: Vitamin D; Bone density; Bone strength; Young women

Abstract

Optimizing bone mass in adulthood is of great importance to prevent the occurrence of osteoporosis in later age. Vitamin D is an essential component of bone health. Low serum vitamin D is associated with low bone mineral density (BMD), which is an important predictor of fracture risk. However, most cells, apart from renal tubular cells, are exposed to free rather than to total 25-hydroxyvitamin D. Whether free vitamin D would be a better marker than total vitamin D is still under debate. The aim of the present study was to explore the relationships between serum total vitamin D, vitamin D-binding protein (BP), free vitamin D, and bone parameters in a group of young Lebanese women. This study included 88 young female adults aged between 18 and 35 y. Body composition and BMD were assessed by dual-energy X-ray absorptiometry, and the lumbar spine trabecular bone score was derived. Bone mineral content (BMC) and BMD were measured at the whole body (WB), the lumbar spine (L1-L4), the total hip (TH), and the femoral neck (FN). To evaluate hip bone geometry, dual-energy X-ray absorptiometry scans were analyzed at the FN, the intertrochanteric region, and the femoral shaft by the Hip Structure Analysis program. The cross-sectional area, the index of axial compression strength, and the section modulus (Z), as well as index of bending strength, were measured from bone mass profiles. Composite indices of FN strength (compressive strength index [CSI], bending strength index, and impact strength index [ISI]) were calculated as previously described. Direct measurement of free 25-hydroxyvitamin D concentrations was performed by immunoassay, which detects free vitamin D by ELISA on a microtiter plate. Serum vitamin D BP was measured using a Quantikine ELISA kit, which employed the quantitative sandwich enzyme immunoassay technique. Serum free vitamin D was positively correlated with WB BMC ( $r = 0.36$ ,  $p < 0.05$ ), WB BMD ( $r = 0.29$ ,  $p < 0.05$ ), L1-L4 BMD ( $r = 0.28$ ,  $p < 0.05$ ), TH BMD ( $r = 0.34$ ,  $p < 0.01$ ), FN BMD ( $r = 0.29$ ,  $p < 0.05$ ), CSI ( $r = 0.24$ ,  $p < 0.05$ ) and ISI ( $r = 0.28$ ,  $p < 0.05$ ). No positive correlations were detected between the total vitamin D level, the vitamin D BP, and BMD. The positive associations between free vitamin D and several bone variables (WB BMC, WB BMD, L1-L4 BMD, TH BMD, FN BMD, CSI, bending strength index, and ISI) remained significant after adjustment for weight. In conclusion, the current study suggests that the free vitamin D serum level is a stronger positive determinant of bone parameters and hip bone strength indices in young female adults than total serum vitamin D.



ScienceDirect



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Volume 21, Issue 3, July–September 2018, Pages 459–461



Letter to the Editor

## Positive Correlations Between Free Vitamin D and Bone Variables in a Group of Young Lebanese Men

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ScienceDirect



Journal of Clinical Densitometry  
Volume 21, Issue 3, July–September 2018, Pages 453–458



Original Article

## Vitamin D and Trabecular Bone Score in a Group of Young Lebanese Adults

Abir Alwan<sup>1</sup>, Nathalie Al Rassy<sup>1,2</sup>, Abdel-Jalil Berro<sup>1</sup>, Maroun Rizkallah<sup>3</sup>, Joseph Matta<sup>4,5</sup>, Fabienne Frenn<sup>4</sup>, Falah Bachour<sup>4</sup>, Amer Sebaaly<sup>4</sup>, Ghassan Maalouf<sup>3</sup>, Hassane Zouhal<sup>6</sup>, Rawad El Hage<sup>1</sup>✉

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<https://doi.org/10.1016/j.jocd.2018.02.002>

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### Abstract

The relationship between **vitamin D** and **trabecular bone score (TBS)** in young adults remains unclear. The aim of this study was to explore the relationship between **25-hydroxyvitamin D [25(OH)D]** serum levels and TBS in a healthy adult population. A total of 54 men and 61 women whose ages range from 18 to 35 participated in the present study. Participants with 25(OH)D insufficiency (between 21 and 29 ng/mL) were 55.7%, and those with 25(OH)D deficiency ( $\leq 20$  ng/mL) were 11.4%. TBS positively correlated with 25(OH)D in men ( $r = 0.393$ ;  $p < 0.05$ ) and women ( $r = 0.324$ ;  $p < 0.05$ ). In both genders, TBS was significantly higher in 25(OH)D-sufficient participants ( $\geq 30$  ng/mL). The present study provides evidence that vitamin D positively affects bone health and suggests that maintaining adequate vitamin D status may be essential for optimal TBS values.





ScienceDirect



Journal of Clinical Densitometry

Available online 22 March 2018

In Press, Corrected Proof



Original Article

## Muscular Maximal Strength Indices and Bone Variables in a Group of Elderly Women

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### Abstract

The aim of the present study was to explore the relations between muscular maximal strength indices and bone parameters (bone mineral density [BMD], hip geometry indices, and trabecular bone score [TBS]) in a group of elderly women. This study included 35 healthy elderly women whose ages range between 65 and 75 yr (68.1 ± 3.1 yr). BMD (in gram per square centimeter) was determined for each individual by dual-energy X-ray absorptiometry at the whole body, lumbar spine (L1-L4), total hip (TH), and femoral neck (FN). L1-L4 TBS and hip geometry indices were also evaluated by dual-energy X-ray absorptiometry. Maximal muscle strength of bench press (1-repetition maximum [RM] bench press), maximal muscle strength of leg press (1-RM leg press), and handgrip were measured using validated methods. 1-RM bench press was positively correlated to TH BMD ( $r = 0.40$ ;  $p < 0.05$ ), FN BMD ( $r = 0.41$ ;  $p < 0.05$ ), FN section modulus ( $r = 0.33$ ;  $p < 0.05$ ), and FN cross-sectional moment of inertia ( $r = 0.35$ ;  $p < 0.05$ ). 1-RM leg press was positively correlated to TH BMD ( $r = 0.50$ ;  $p < 0.01$ ), FN BMD ( $r = 0.35$ ;  $p < 0.05$ ), FN cross-sectional area ( $r = 0.38$ ;  $p < 0.05$ ), and TBS ( $r = 0.37$ ;  $p < 0.05$ ). Handgrip was correlated only to FN cross-sectional moment of inertia ( $r = 0.43$ ;  $p < 0.01$ ). This study suggests that 1-RM bench press and 1-RM leg press are positive determinants of BMD in elderly women.

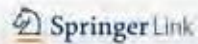
### Key Words

Menopause, muscular strength, prevention of osteoporosis

Conflicts of Interest: The authors state that they have no conflicts of interest.

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*Environmental Science and Pollution Research*  
 May 2012, Volume 25, Issue 13, pp 14350–14360 | [View article](#)

## Serum concentrations of selected organochlorine pesticides in a Lebanese population and their associations to sociodemographic, anthropometric and dietary factors: ENASB study

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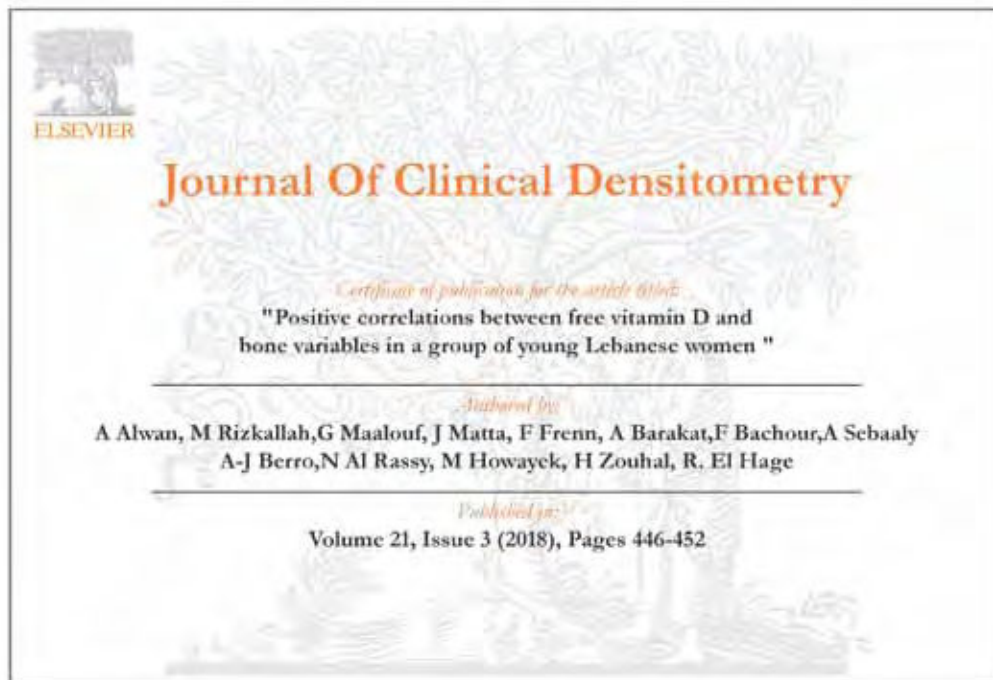
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### Abstract

Organochlorine pesticides (OCPs) were banned by the Stockholm Convention many years ago; however, they are still detected in the environment due to their high persistence, their current illegal use, and their import from countries where they have not been banned. We evaluated the serum concentrations of selected OCPs (hexachlorobenzene (HCB),  $\beta$ -hexachlorocyclohexanes ( $\beta$ -HCH), p,p'-dichlorodiphenyltrichloroethane (DDT) and its metabolite p,p'-dichlorodiphenyldichloroethylene (DDE) in a sample of Lebanese adults using gas chromatography coupled to an ion trap mass spectrometer detector. The mean concentrations of HCB,  $\beta$ -HCH, DDT, and DDE were 7.1, 8.6, 2.1, and 18.9 ng/g of lipids, respectively, and the major contributor among the four OCPs was DDE. The OCP levels in the present study were in general lower than the values observed in several countries worldwide and their concentrations at the 95th percentile were lower than the biomonitoring equivalents (BEs) excluding any appreciable health risk. We observed an inverse association between HCB concentrations and body mass index (BMI) as well as HCB,  $\beta$ -HCH, and DDE levels, and smoking habits. Milk consumption however was positively associated with an increased serum level of  $\beta$ -HCH. This study, which was the first to investigate OCP serum levels in a Lebanese population, provides a baseline to which future measurements can be compared.



Moreover, Eng. Fady Melhem, Head of Electrical Laboratory Unit at IRI's Technology and Development Directorate prepared research papers in the field of energy and environment management.

### **Energy Management in Electrical Smart Grid Environment Using Robust Optimization Algorithm.**

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2018 IEEE Transactions on Industry Applications (TIA), DOI: 10.1109/TIA.2018.2803728, Publication date: May. 2018, vol. 54, no. 3, Page(s): 2714 - 2726, IEEE PUBLICATIONS.

### **Thermal and Electrical Load Management in Smart Home Based on Demand Response and Renewable Energy Resources.**

**F. Y. MELHEM<sup>a, b</sup>, O. GRUNDER<sup>b</sup>, Z. HAMMOUDAN<sup>c</sup>, N. MOUBAYED<sup>d</sup>**

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2018 SDIWC International Journal of Digital Information and Wireless Communications (IJDWC), Publication date: Sep. 2018, vol. 8, no. 3, Page(s): 189 - 194, SDIWC PUBLICATIONS.



**ACTIVITIES OF THE  
EUROPEAN-  
LEBANESE CENTER  
FOR INDUSTRIAL  
MODERNISATION –  
ELCIM**

## ELCIM ORGANIZES THREE TRAINING SESSIONS IN 2018, HOLDS MEETINGS ON PACKAGING INDUSTRIES AND SIGNS MEMORANDUMS OF UNDERSTANDING

- 1- Three public trainings were held during year 2018; Emotional Intelligence provided by Ms. Cecilia Moudaber: the objective is helping employees and managers being able to control their behaviors in order to get along better with others, build stronger relationships, better relate to customers, and facilitate effective solutions in times of crisis. Risk Management training provided by Mr. Nahed Khairallah: Risk management is the process of identifying, assessing and controlling threats to an organization's capital and earnings, in the aim to reduce any financial risk. FSSC 22000 training by Dr. Hussein Hassan: this workshop is about Food Safety Policy and Objectives within the International norms.
- 2- Several meetings were held with NDU regarding a study related to the Packaging industry in Lebanon, The aim of this study is to assess the status of the food packaging manufacturers in Lebanon from a food safety perspective. The objective will be to evaluate the PRPs (Pre-Requisite Programs) in food packaging manufacturing organizations across Lebanon and to associate these findings with microbiological and chemical testing of packaging materials, in addition to the microbiological quality of compressed air and water taken from these organizations. This project will continue during 2019 by visiting the packaging industries and workshops will be held.
- 3- Meetings with LAU and USEK preparing for the Memorandum of Understanding.

### HORECA 2018

The Industrial Research Institute (IRI)/Euro Lebanese Centre for Industrial Modernization participated in Horeca Fair for the year 2018 that was held at the Seaside Arena, Beirut. During this event, hundreds of professionals from different sectors visited IRI/ELCIM stand where they discussed their





## ACTIVITIES OF ELCIM

needs and visions. Many presentations were provided by IRI/ELCIM on its new co-financed programs the ELCIM SME Support Program (ESSP) as well as the Innovation Vouchers. The response was very positive during these sessions.



## LEBANON SOFTSHORE • PARTICIPATION OF THE LSS IN COMEX 2018 OMAN

Being aware of the promising potential for IT investment in Oman, the Lebanon SoftShore (LSS) Cluster at the Industrial Research Institute (IRI), in collaboration with the Investment Development Authority of Lebanon (IDAL) organized the Lebanese pavilion in COMEX 2018 IT fair supporting its software member companies to discover the available opportunities in this market.





The booth managed by the Lebanon SoftShore Cluster (LSS) gathered five leading Software companies: Profiles, Ideatolife, Aims, Intelligile and BSynchro.

During the COMEX exhibition, promising contacts with several local entities were made by the attending companies valuing their participation as well as the collaboration with the Lebanese companies in the Omani market.

### • MEETING WITH BERYTECH 30/05/2018

On May 30th 2018, a meeting was organized by Berytech and the Lebanon SoftShore (LSS) Cluster at Berytech-Mathaf in order discover collaborative opportunities and showcase the PUM program, a support program tailored to assist SMEs in Lebanon and supported by the Netherlands.

### • LEBANON SOFTSHORE ACADEMIC FORUM 08/06/2018

The Lebanon Softshore Academic Forum, which took place on June 8, brought together the country's academic and software industry leaders for a series of talks and panel discussions.

The one-day event was organized by the "Lebanon SoftShore Cluster" (LSS), in partnership with the "Ecole supérieure d'ingénieurs de Beyrouth" (ESIB) and the "Institut National des Télécommunications et de l'Informatique" (INCI) at Saint-Joseph University of Beirut (USJ).

The purpose of this forum was to address the significant gap between the needs of the local software companies and the curricula provided by the Lebanese educational system. Software development is one of the most sought after jobs in the market today, yet the supply of graduates in the software development field seems to be insufficient.

The panels addressed different topics, such as the employment needs and challenges of the Lebanese software industry, the computing curricula at universities and the role of multinational technology providers.

The objective of this forum was to be an initiation of issues that could be solved, and to establish a platform of communication between the relevant stakeholders for concrete and efficient follow up.

### • FIRST MEETING OF THE ACADEMIC FORUM COMMITTEE 26/07/2018

Following the Academic Forum organized by the LSS Cluster, a committee was formed with the objective of following up the proper implementation of the forum's recommendations and



establishing a platform for long term cooperation between the academia and the Lebanese software industry.

The said committee gathers esteemed representatives from the local universities, multinationals present in Lebanon, representatives from the Software sector and the LSS Cluster.

The first committee's meeting was held on the 26 of July, 2018 at the Industrial Research Institute (IRI) in Hadat where fruitful discussions were undertaken and subcommittees were formed to follow up.

## • PARTICIPATION IN GITEX 2018 14/10/2018

In what has become a tradition since 2007, and with its aim to support Lebanese software know-how and to better serve the IT sector in a very competitive market, the LSS cluster at the Industrial Research Institute (IRI) participated in the 2018 GITEX Edition MENA's largest technology event.

The "Lebanon Software Innovators" booth will gathered leading local software companies. The mission was co-financed by the Industrial Research Institute with the collaboration of IDAL.





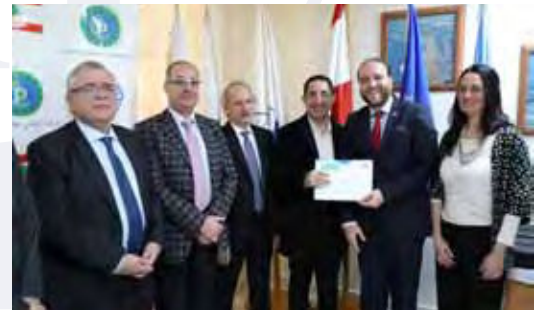
**ACTIVITIES OF  
THE LEBANESE  
CLEANER  
PRODUCTION  
CENTER - LCPC**

## LEBANESE CLEANER PRODUCTION CENTER (LCPC)

- The Lebanese Cleaner Production Center (LCPC) was established in 2002 at the Ministry of Environment, by the United Nations Industrial Development Organization (UNIDO) and the European Union (EU).
- In February 2004, the LCPC moved into the Industrial Research Institute (IRI) premises, inside the Lebanese University campus in Hadat - Baabda.
- The LCPC is part of the global UNIDO-UNEP network of National Cleaner Production Centers (NCPC) in 81 countries.
- Its role is to improve the environmental performance of the products, operations and services, by focusing on the causes of the environmental problems. It also promotes economic development and industrial growth by reducing costs and facilitating international markets access for national products.
- The LCPC helps national industries and SMEs in particular, in adopting sustainable production practices by implementing the cleaner production and transferring the environmentally sound technologies.
- The Center supports the industrial facilities in enhancing their productivity and facilitating their access to new and most coveted markets, while improving their environmental and social performance.

### LCPC'S ACTIVITIES DURING 2018:

- Awarding of Resource Efficiency and Cleaner Production certificates, as part of the MEDTEST II project at the Industrial Research Institute, in the presence of the Minister of Industry, the United Nations Industrial Development Organization (UNIDO), the European Union, IRI's Director General and the representative of the Environment Minister.



- The 8th edition of the Arab Forum on SMEs organized by the UNIDO, the Arab Industrial Development and Mining Organization (AIDMO), the Swedish International Development Cooperation Agency (Sida) and the Moroccan Enterprises in Rabat.







- While launching the Green Economy Financing Facility (GEFF) in Lebanon at Bank Audi, in cooperation with the European Bank for Reconstruction and Development (EBRD).



- In the SwitchMed conference, which was refinanced by the European Union to support and link the stakeholders in order to expand the ecological and social innovations in the Mediterranean region.

### THE NETWORK NOW INCLUDES 81 MEMBERS

- 47 governing members
- 29 monitoring and supervision members
- 5 associate members
- 3 membership applications under review by the Executive Council LCPC's activities until the end of 2018

### LCPC'S ACTIVITIES UNTIL THE END OF 2018

- 65 Workshops
- 52 Awareness Seminars
- 214 Field Visits
- 59 Training Sessions

### 2018 ACHIEVEMENTS

- 290 Events
- 3,785 Participants
- 47 SMEs
- 72 Resource Efficiency Experts Graduated
- 9 Industrial Sectors
- 5,860,000\$ of Savings per Year

#### Booklets

- Newsletters (21) • Annual Reports (16) • Handbooks (6)
- Facts (47) • CD ROM

Book: "Half is enough: An Introduction to Cleaner Production"





**ACTIVITIES OF  
THE CENTER FOR  
INNOVATION &  
TECHNOLOGY  
– CIT**

## ELCIM AND CIT LAUNCH NEW PROGRAMS SUPPORTED BY THE INDUSTRIAL RESEARCH INSTITUTE

### ELCIM /CIT SUPPORT PROGRAMMES

- Preparations are underway by CIT and ELCIM to launch the new IRI supported programmes:
- The Innovation Vouchers Project IVP , where limited vouchers amounting each up to 6000USD are available for Lebanese entrepreneurs/researchers/ innovators for innovative ideas at prototyping stage able to be commercialized.
- ELCIM SME Support Programme ESSP : an IRI co- financed technical assistance to SME's in order to reinforce their capacities in their various production processes.
- The Scientific Platform ,linking research to manufacturing enterprises : a new initiative by the CIT launched in 2018 in order to reinforce the relations between academia and manufacturing SME' s with the aim of boosting their innovative capacities
- Renewable Energy research publication

Research submitted and accepted at REDEC conference 2018 entitled:

The first BIPV plant in Lebanon: Optimized hybrid configuration with diesel generator case study and performance analysis.





**IRI COOPERATION  
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 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 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 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 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 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.

## **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:

1. 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 Certificate No. 17025 .
2. 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.
3. Oversight of the local market. This function is tasked to the Consumer Protection Directorate at the Ministry of Economy and Commerce .
4. 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**

## **Industrialists**

IRI allots great importance to industrialists and industry in Lebanon. Nine 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 more than ten years ago. 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 certificate No. 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.



# EXHIBITIONS

## IRI MAINTAINED A STRONG PRESENCE IN SPECIALIZED EXHIBITIONS

True to its tradition of attending scientific activities, the Industrial Research Institute participated in conferences, workshops and lectures, in and outside Lebanon. It also took part in specialized exhibitions with a strong scientific presence and a moral support, sharing with the trade shows its expertise and experience.

### 1- Horeca 2018 in Lebanon

The Industrial Research Institute and the Euro-Lebanese Centre for Industrial Modernization (ELCIM) participated in Horeca 2018, one of the major annual trade fairs that brings together experts from the hospitality, food and beverage sectors in Lebanon and the region. Horeca expo took place at the Seaside Arena from 20 to 23 March 2018.



During the event, ELCIM organized short presentations focusing on the food sector, and held meetings with technical experts in various fields.

### 2- Ninth Beirut Energy Forum (IBEF)

As usual, the Industrial Research Institute participated in the 9th edition of the International Beirut Energy Forum (IBEF), which was held at Le Royal Hotel in Dbayeh, from 26 to 28 September 2018, through many activities. IRI maintained a continuous presence in a stand where it displayed the institute's general activities and gave presentations on its energy activities.

Moreover, Dr. Imad Hage Chehade took part in the National Consultation Meeting on the "Green Neighborhood Project" proposed by the Green Climate Fund (GCF), and discussed the project feasibility.



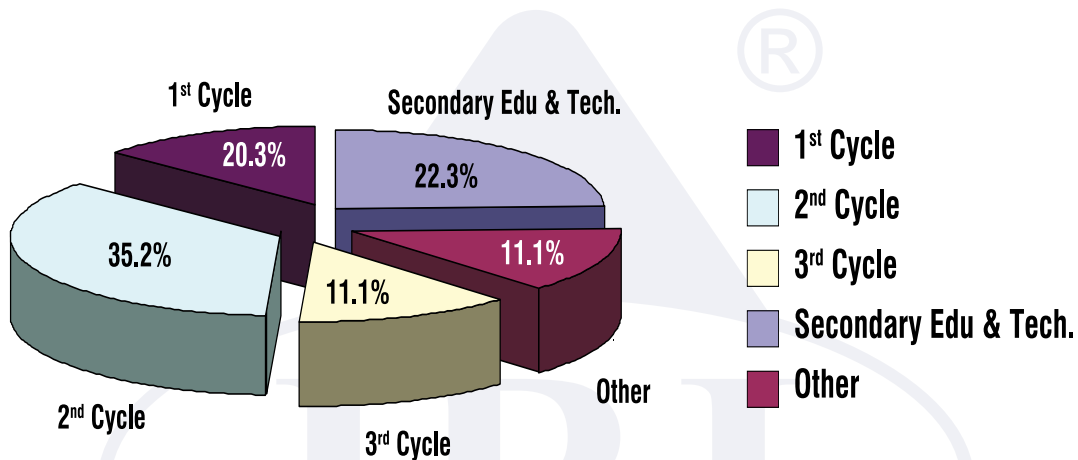


# DEVELOPMENT OF HUMAN RESOURCES

The number of IRI staff members amounted to 162 at the end of 2018; 69% are males, while 31% are females. The average age is around 37 years.

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

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



Elementary Levels	No.	%
3rd Cycle	18	11.1
2nd Cycle	57	35.2
1st Cycle	33	20.3
Secondary Education & Tech	36	22.3
Other	18	11.1

Average Age	Gender	
37 Years	69% Male	31% Female





**ON-GOING  
EMPLOYEE  
TRAINING**

## International training, seminars & workshops

Participant	Organizer	Object/Title	Date	Location
Naji Abi Zeid Sandra Sarkis Richard Skaff	OITE	ICET Exhibition COMEX 2018	23-25/04/2018	Muscat, Oman
Amine Jbeily	ICC	IAM & CODEX Committee on Methods of Analysis and Sampling	05/05/2018 07-11/05/2018	Budapest, Hungary
Amine Jbeily	ICC Services GmbH	7th International Dietary Fibre Conference 2018 - Fibre Diversity in Food, Fermentation and Health	04-06/06/2018	Rotterdam, The Netherlands
Hassan Raad	Ministry of commerce, People's republic of China, The Economic and Commercial Counselor's Office of the Embassy of China	2018 Seminar for Officials & Business Leaders of Developing Countries Involved in Machinery Industry	21/06- 11/07/2018	Beijing, China
Elias Maalouf Joseph El Helou	الوكالة الوطنية للمترولوجيا والمنظمة العربية للتنمية الصناعية والتعدين	المترولوجيا العلمية والصناعية	02-04/07/2018	تونس
Dany Frenn	Ministry of commerce, People's republic of China, The Economic and Commercial Counselor's Office of the Embassy of China	The Construction and Management of Industrial Park for Lebanon, 2018	5-24/07/2018	Tianjin / Shanghai, China
Imad Hage Chehadeh	PTB - Germany	Middle East Regional Project Steering Committee Meeting	30-31/07/2018	Amman, Jordan
HovigKouyoumdjian	R-Biopharm AG	Training R-biopharm	19-21/09/2018	Germany
SelimKfoury	المنظمة العربية للتنمية الصناعية والتعدين	الملتقى العربي للإبداع والابتكار والتنافسية والاجتماع ال ١٨ للجنة التنسيق لمراكز البحوث الصناعية في الدول العربية	01-04/10/2018	الغردقة، مصر
Naji Abi Zeid Sandra Sarkis Ramzi Bhamdouni Dara Maria Mouracade	Dubai World Trade Centre	GITEX Technology Week 2018	14-18/10/2018	Dubai
Elias Maalouf	المنظمة العربية للتنمية الصناعية والتعدين	اجتماعات المترولوجيا	30/10- 01/11/2018	الرباط، المغرب
Amine Jbeily	China Grain Products Research and Development Institute	Authenticity and Safety of the ICC International Conference - Grains for Wellbeing	05-08/11/2018	Taipei, Taiwan
Elias Maalouf EdgardShaaya	PTB - Germany	Quality Infrastructure for the promotion of trade and consumer protection in the Middle East	05-09/11/2018	Slovakia
Imad Hage Chehadeh	The Italian Ministry of the Environment, Land, and Sea And the WEC Lebanon Committee	ECOMONDO 2018	06-09/11/2018	Rimini, Italy
Joseph Matta	Eurolab	Eurolab National Members' Meeting 2018	15-16/11/2018	Berlin, Germany

## MISSIONS (Trainers, Experts & Speakers)

Participant	Organizer	Object/Title	Date	Location
Joseph Matta Siham Youssef Carine Slaiby	LIRA Program	LIRA Fund Award Ceremony	15/05/2018	Le Royal Hotel - Dbayeh
Robert Haddad	IRI & FREA Formation- France	IRCA ISO 9001: 2015 Lead Auditor training courses	16&23/05/2018	IRI
Naji Abi Zeid Sandra Sarkis	LSS at ELCIM IRI & Faculty of Engineering: ESIB - INCI	LSS Academic Forum 2018	08/06/2018	ESIB, Mkalles
Bilal Houssein	LSES & OEA	Building Integrated Solar Technologies	19/06/2018	OEA
Joseph Matta	وزارة الاقتصاد والتجارة والايونكتاد	ندوة حول العوائق التي تواجه تصدير صابون زيت الزيتون والحلول المقترحة	11/09/2018	وزارة الاقتصاد والتجارة
Joseph Matta Elie Melky	Faculty of Pharmacy, Department of nutrition at USJ Beirut	Les 2e Journées de Nutrition et technologie Alimentaire	26/10/2018	USJ Beirut

## Local Training, Seminars & Workshops

Participant	Organizer	Object/Title	Date	Location
Thomas Sabbagh	OMSAR	أساسيات التواصل	11/01/2018	Online
Hanane El Hayek	CitésUniesLiban	IRCA ISO 9001: 2015 Lead Auditor training courses	16&23/05/2018	IRI
Bureau Technique des Villes Libanaises	مؤتمر اطلاق الدورة التدريبية شهادة الكفاءة في الهندسة المدنية للمدينة المستدامة في لبنان	مقر نقابة المهندسين - بيروت	16/01/2018	ESIB, Mkalles
Thomas Sabbagh	OMSAR	Being customer-oriented	31/01/2018	Online
Thomas Sabbagh	OMSAR	التطوير الذاتي	19/02/2018	Online
Imad Hage Chehadeh	LCEC & Ecofys Germany	Energy efficient Heating and Cooling Technologies in the building sector	21/02/2018	The Key Aparthotel, Beirut
Ahmad Hassan	Lebanese University	Hult Prize Lebanon - Harnessing the power of energy	26/02/2018	Lebanese University - Saida
Halim El Bayeh	LIBNOR - ISO	ISO 14046: 2014 Environmental management - Water footprint - Principles, requirements and guidelines	09/03/2018	Radisson Blu Hotel, Ain El Mryasseh, Beirut
Jihad Hajj Chehadeh Rabih Issa	معهد باسل فليجان المالي والاقتصادي	معايير المحاسبة الدولية للقطاع العام: اهميتها ونطاق تطبيقها	14/03/2018	معهد باسل فليجان المالي والاقتصادي

Participant	Organizer	Object/Title	Date	Location
Siham Youssef	The Lebanese Center for Water Management and Conservation Project & UNDP & Beirut Order of Engineers and Architects	National Guideline for Rainwater Harvesting Systems	23/03/2018	The Order of Engineers and Architects, Beirut
Thomas Sabbagh	OMSAR	Managing projects in the digital age	22/03/2018	Online
Hovig Kouyoumdjian	Project "Building a Rule of Law Society: to enhance bases of democratic governance and rule of law"	Workshop on Food Safety in Lebanon: Needs, Governance and Enforcement	27/03/2018	Grand Se-rail, Beirut
Joseph Matta	ELARD شركة الأرض للتنمية المتطورة للموارد ش.م.ل.	اجتماع مشاركة العامة ضمن دراسة تحديد نطاق تقييم الاثر البيئي	29/03/2018	وزارة البيئة - القاعة الخضراء
Thomas Sabbagh	OMSAR	الادارة الحديثة	05/04/2018	Online
Joseph Matta	Université Saint Joseph, Beyrouth	7ème Congrès de la Faculté de pharmacie: "Le pharmacien au coeur des déficits thérapeutiques et humanitaires"	12/04/2018	Université Saint Joseph, Beyrouth
Fady Melhem	USEK	IEEE MenaComm 2018	18/04/2018	USEK, Jounieh
Thomas Sabbagh	OMSAR	أساسيات الخطابة	24/04/2018	Online
Ahmad Hassan	نقابة المهندسين في بيروت - فرع مهندسي الكهرباء الاستشاريين	نحو نقل نظيف في لبنان - السيارات الكهربائية	25/04/2018	نقابة المهندسين - بيروت
Hanane El Hayek	IMELS and LCEC	Green Neighborhoods	03-04/05/2018	Le Royal Hotel, Dbayeh
Dany Tahchy	Apave	Risk control & applicable standards for elevators in Lebanon	17/05/2018	Apave training center, Beirut
Maya Majdalany Dany Frenn	USAID - LIVCD, SLFI & Food Safety and Quality management Program at NDU	Road-Map to Food Product Development	05/06/2018	NDU Main Campus
Eliane Sawma Awad	معهد باسل فليجان المالي والاقتصادي	ورشة عمل تعريفية حول «ما يجب ان تعرفه عن الشراكة بين القطاعين العام والخاص»	07/06/2018	معهد باسل فليجان المالي والاقتصادي
Joseph Matta	USJ	9e journées de la recherche	21/06/2018	USJ, Beirut
Ziad Moukarzel	معهد باسل فليجان المالي والاقتصادي	المؤتمر حول «الشراء العام وفرص تعزيز الصمود والنمو المستدام»	26-27/06/2018	معهد باسل فليجان المالي والاقتصادي
Ahmad Hassan	IFP & EcOrient	Project Lebanon 2018 - EcOrient 2018 - Towards a Greener Middle East - Lebanese Energy Sector - Future Expectations, Projects & Opportunities	28/06/2018	Biel, Beirut

Participant	Organizer	Object/Title	Date	Location
Hanane El Hayek	Ecofys& LCEC	IKI Project Accelerating 0-emission building ambitions in the MENA region	04-05/07/2018	Movenpick Hotel, Beirut
Dany Tahchy Ahmad Habli Sahar Estephane	LIBNOR	Fundamentals of Project Management	23-24/07/2018	LIBNOR, Sin El Fil
Siham Youssef	Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon	Indian Business Delegation	12/09/2018	CCIABML premises
Siham Youssef RamziBhamdouni	The Faculty of Agricultural and Food Sciences of the Holy Spirit University of Kaslik	4th Wine Conference: New Strategies and Technologies for the Lebanese Wine Industry	13/09/2018	USEK, Jounieh
Mohamad Hajjar	ENEPLAN	ENEPLAN Final Conference	13-14/09/2018	AUB Beirut, Faculty of agricultural and Food Sciences
Mahmoud Amhaz	وزارة الاقتصاد والتجارة	Workshop on Export Control	18-19/09/2018	الاتحاد الأوروبي
Ramzi Bhamdouni Richard Skaff	US Aid - Ministry of Trade and Economy	Workshop on Enhancing the Work of the Small and Medium Enterprises in Lebanon	02/10/2018	Ministry of Trade and Economy
Antoine Fayçal	Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon	Visit of the Greek Delegation to Beirut	03/10/2018	CCIABML premises
Siham Youssef	The Ministry of Agriculture, The Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP)	World Food Day 2018	16/10/2018	Coral Beach Hotel, Beirut
Mahmoud Amhaz	معهد باسل فليحان المالي والاقتصادي	الاجتماع الثامن لشبكة النوع الاجتماعي والحكومة في دول البحر المتوسط	24/10/2018	معهد باسل فليحان المالي والاقتصادي
FadyMelhem	LAU School of Engineering	Lebanon on the pulse of e-mobility	31/10/2018	LAU Beirut
Joseph Matta Amine Jbeily HovigKouyoumdjian Halim El Bayeh	Ministry of Industry	Expert Mission on support to the ministry of Industry in conducting inspection on food industries	12-13/11/2018	Ministry of Industry, Beirut
Tarek Hakim	L'InstitutEuropéen de Coopération et de Développement (IECD) and Semeursd'Avenir (SDA)	Job & Orientation Forum	04/12/2018	Forum de Beyrouth, Beirut
Tony Chammai	The Orders of Engineers and Architects - Beirut, The Branch of Electrical Consultant Engineers	ICT in Lebanon towards a brighter future	04-06/12/2018	OEA Premises, Bir Hassan
Imad Hage Chehadeh Robert Hadadd Mohamad Hajjar	LCEC	SHAMCI Lebanon	20/12/2018	LCEC Of-fices, Beirut



## Local Meetings, Inaugurations & Exhibitions

Participant	Organizer	Object/Title	Date	Location
RamziBhamdouni Naji Abi Zeid Sandra Sarkis Richard Skaff Maya Khatib FadiFayad Manale Tabanji Hanna Francis Tony Chammai	Hospitality Services	HORECA 2018	20-23/03/2018	Biel
RamziBhamdouni Richard Skaff Maya Khatib Manale Tabanji Abbas Jaber Tony Chammai	LSS at ELCIM IRI & Faculty of Engineering: ESIB - INCI	LSS Academic Forum 2018	08/06/2018	ESIB, Mkalles
Imad Hage Chehadeh Mohamad Hajjar Hanane El Hayek Carine Slaiby Dany Tahchy Aline Jreijiry Siham Youssef Tarek Hakim Bilal Houssein Ahmad Habli Jean Dib KhoderFawaz Joseph El Helou Ahmad Hassan FadyMelhem Hachem El Ali Dany Frenn	LCEC & WEC	International Beirut Energy Forum 2018	26-28/09/2018	Le Royal Hotel, Dbayeh

## LIBNOR

Participant	TC Number	Standard Title	Date
Danielle Gemayel	NL TC 3016	NL 802 Non alcoholic beverages	20/06/2017 08/02/2018
Elias Bechara	NL TC 207 Environmental Management	ISO 14004, 14005, 14006	13/11/2017 16/02/2018
Tarek Hakim	NL TC 44	ISO 544 - ISO 9692-1/2/3/4	22/02/2018
Mark Tahchy	NL TC 59 Building construction	EN 13108-1/2/3/4/7 EN 13877/1/2 EN 15283-1/2	06/03/2017 27/02/2018
Mark Tahchy	NL TC 96	ISO 4301-1: 2016	06/03/2018
Dany Tahchy	NL TC 3001	ISO 10083:2006 Oxygen concentrator supply systems	09/01/2017 27/03/2018

Participant	TC Number	Standard Title	Date
Dany Tahchy	NL TC 3012 Safety and construction of lifts	ISO 4190-3 / ISO 4190-5	10/10/2017 27/03/2018
Dany Tahchy	NL TC 3012 Lifts	NL EN 115-2 / NL EN 115-3	27/03/2018
Dany Tahchy	NL TC 96 Cranes and Tower Cranes	ISO 9926-1 / ISO 9926-3 / ISO 16715	04/04/2018
Khaled Ghoul	NL TC 127 Earth Moving Machinery	ISO 20474 Part 1-2-3	18/04/2018 19/04/2018
Dany Tahchy	NL TC 3012 Lifts	NL 810:2018 - 115/2/3/4 - EN 81 -58/10/77	24/04/2018
Elias Melky	TC 61	ISO 17557:2018 / ISO 18188:2018 / ISO 23560:2015	25/04/2018
Khaled Ghoul	TC 2197	EN ISO 9905: 1997 + A: 2011, EN ISO 5199: 2002, EN ISO 9908: 1997 + A1: 2011	10/05/2018
Khaled Ghoul	NLTC 127 - Earth moving machinery	ISO 20474-4, 5, 6, 7, 8, 9 & 18:2017 20474-10 TO 13 (6) 2017	21/05/2018 19/06/2018
Dany Tahchy	NL TC 96 Tower Cranes	ISO 23853 / ISO 13200	05/06/2018
Khaled Ghoul	NLTC 2207 - Furniture	EN 1728: 2012 / AC: 2013, EN 1129-1: 1995, EN 1129-2: 1995	19/06/2018
Tarek Hakim	NLTC 44 Welding procedures	ISO 15614-1/2/3/4 - 5817	22/03/2018 05/07/2018
Haitham Shawa Khaled Ghoul	NL TC 2207: Furniture	EN 14434 - EN 12727	25/07/2018 25/07/2018
Wadad Daher Danielle Gemayel	NL TC 34/SC3	NL 241: الخملات	05/03/2018 27/07/2018
Dany Tahchy	NL TC 157 / Non systemic contraceptives STI Barrier	ISO 16038:2017 / ISO 29942: 2011 / ISO 29941: 2010 / ISO 8009: 2014 / ISO 16037: 2002 / ISO 7439: 2015 / ISO 25841: 2014 / ISO 23409: 2011 / ISO 407/2011	15/06/2018 03/08/2018
Halim El Bayeh	TC 1017 الأغذية المعدة لاستعمالات تغذوية خاصة	NL 459	21/06/2017 09/08/2018
Bilal Houssein	NL TC 3009 "Electrotechnical"	IEC 62052-11 + AMD1 CSV, IEC 62053-11 + AMD1 CSV, IEC 62053-21, IEC 62053-2	31/07/2018 10/08/2018
Khaled Ghoul	NLTC 127	ISO 7130: 2013 ISO 6165: 2012 ISO 5006:2017 Iso 2867: 2011 ISO 12508:2014 ISO 11112 - 10264 - 10533 - 10968 - 13031 - 15817 - 17063	14/08/2018
Dany Tahchy	TC 96 لجنة الرافعات	ISO 4306-5, ISO 12480:3, 4 , ISO 17096	29/08/2018
Tarek Hakim	NLTC 44 Welding and Allied Processes	ISO 15614-5-6-7-8	06/09/2018
Mark Tahchy Khaled Ghoul	NLTC 2197 Pumps	EN 16297-1/2/3: 2012; EN ISO 14847: 1999	26/07/2018 14/09/2018
Mark Tahchy	NL TC 59 - Construction	NL EN 14411	19/09/2018

Participant	TC Number	Standard Title	Date
Andre Kahaleh	NL TC 94 - Safety protective clothing and equipment	ISO/TR 2801 & ISO 3873	16/03/2018 25/09/2018
Hovig Kouyoumdjian	NL TC 2153 Machinery intended for use with foodstuff	CEN/TR 15623: 2008, 13534: 2006 ; EN 1672-1: 2014; EN 1672-2: 2005; A1: 2009	09/08/2018 06/09/2018
Andre Kahaleh	TC 94: Personal safety-protective clothing and equipment	ISO4855 - ISO4854 - ISO4852 - ISO4851 - ISO/TR11610 - 11612 - 6942 - 6530 - 6529 - ISO9151 - 9185 - 11613 - 16602 - 9150 - 6529 - ISO20347 - 20346 - 20345 - 4643 - ISO/TS1199-2 - ISO11999-1/3/4/5/6/9 - ISO/TR21808	04/07/2018 19/09/2018
Danielle Gemayel	TC 106 - Dentistry	ISO4823 - ISO6872 - ISO6873 - ISO9333 - ISO9693-1/2 - ISO14233 - ISO14356 - ISO15854 - ISO15912 - ISO10139-1/2 - ISO10271 - ISO10477 - ISO13017 - ISO28399 - ISO20795-1/2 - ISO21563 - ISO22112 - ISO22674 - ISO28319	25/07/2018 22/10/2018
Mark Tahchy	NL TC 59 - Construction	EN 13950 - EN 14496 - EN 14190 - EN 14195 - EN 13963 - EN 13914-2 - EN 1340 - EN 13915 - EN 1279-1/2 - EN 14353 - EN 15319 - EN 15254-2	19/04/2018 28/11/2018
Andre Kahaleh	NL TC 63 Glass containers	ISO12821: 2013 - ISO12822: 2015 - ISO 9058: 2008 - ISO9057 - ISO9100-1/2/3/4/5/6/7/9/10/12/13/14 - ISO9885 - ISO12818 - ISO7458 - ID08113 - ISO9008 - ISO9009	03/08/2018 29/11/2018
Mark Tahchy	TC 138	ISO 18373-1 ISO 13229 ISO 9851 EN 1905	30/11/2018
Tarek Hakim	NLTC 44: Gas welding equipment	NLISO 2503 - ISO 5171 - ISO 7291 + And 1 - ISO 10225 - ISO 17671-1/2/3/4	08/11/2018 12/12/2018
HaithamShawa	NL TC 2207 Furniture	EN1729 - EN15372 - EN1729-2 - EN1957 - EN1730 - EN14749 - EN16139 - EN/TR14073-1 - EN581-1	24/09/2018 06/12/2018
Halim El Bayeh	NL TC 1018: Pesticide Residues in Food	NL 662	15/11/2017 17/12/2018

### IRI Seminars / Conferences

Participant	Organizer	Object/Title	Date	Location
Elie Dawaliby Ahmad Wehbe	Electrical Lab-IRI	Needle flame test and resistance to mechanical stresses and Impact test	28/02/2018	IRI
Raymonde Khazzaka Elias Melky HovigKouyoumdjian Dany Tahchy Sandra Sarkis Jihad Hajj Chehadeh Dany Frenn Stephanie El Asmar Imad Kahil	IRI & FREA Formation- France	IRCA ISO 9001: 2015 Lead Auditor training courses ISO 14004, 14005, 14006	13/11/2017 16-20 /04/2018	IRI
Thomas El Homsy	Electrical Lab-IRI	Resistance to heat testing	16-17/05/2018	IRI
Muhi Dine Habli	Electrical Lab-IRI	Performing the test of Power Transformer	29/08/2018	IRI
Thomas El Homsy	Electrical Lab-IRI	Performing the CFL test according to IT/ELC/37	17/09/2018	IRI

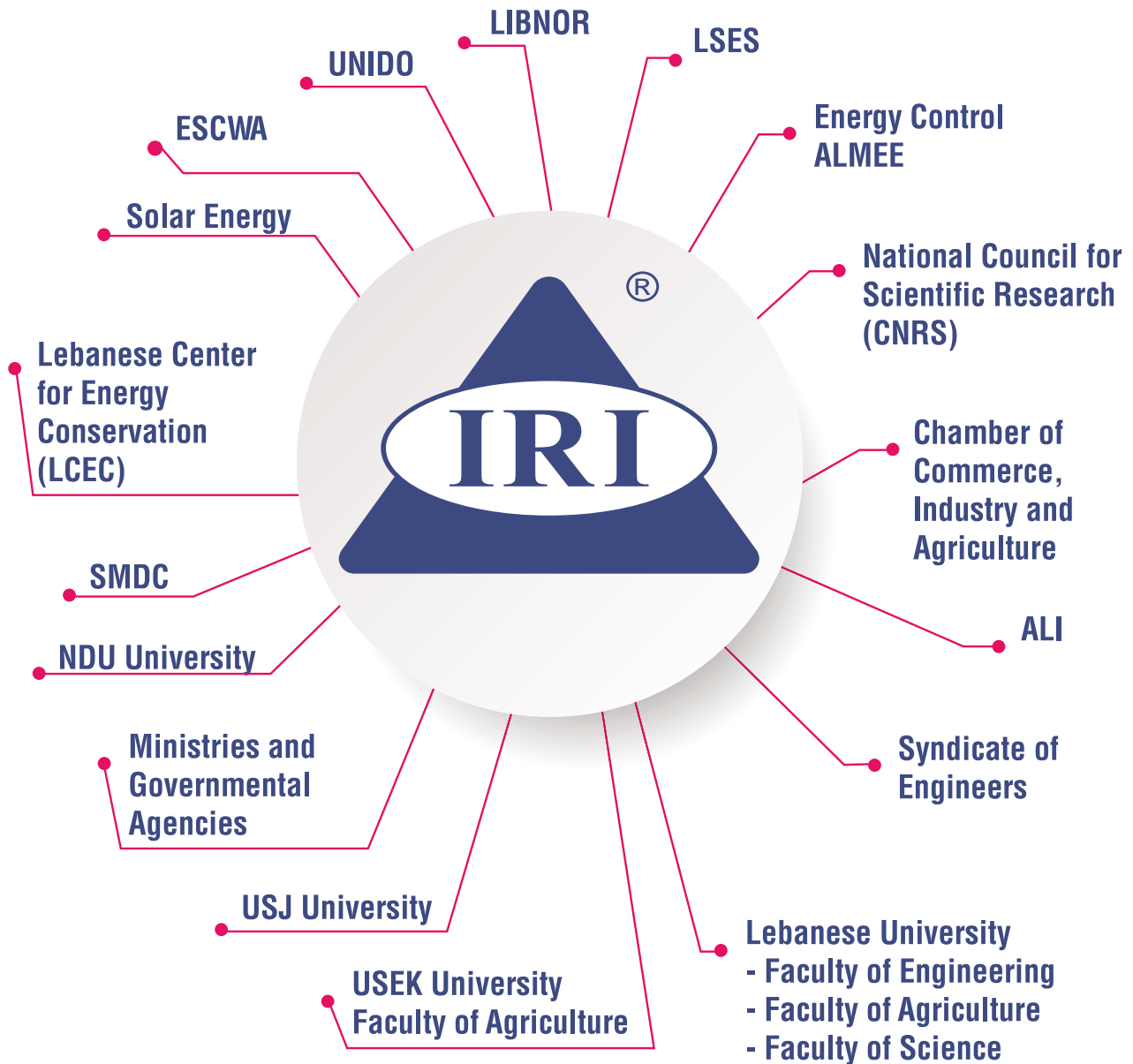
Participant	Organizer	Object/Title	Date	Location
Elie Dawaliby	Electrical Lab-IRI	Perform Glow wire test	24/10/2018	IRI
Thomas El Homsy	Electrical Lab-IRI	Performing the lead acid batteries test	21/11/2018	IRI
Thomas Sabbagh Jean-Pierre Samia MirnaChehab Tony Chammai Sahar Estephane AmanyGerges Dany Frenn Elias Maalouf Elias Dib Imad Kahil Tarek Hakim MyriamMaatouk WadadDaher Perla Hanna EdgardShaaya Joseph Matta HovigKouyoumdjian Petra Youssef Amine Jbeily Elias Bechara Ahmad Hassan Marc Cherfan Siham Youssef Ahmad Habli RaymondeKhazzaka Bilal Houssein Halim El Bayeh RabiHssa Hachem Al Ali Lama AbouRjeily Joelle Saikaly Rana Matar Danielle Gemayel Rana Feghali FadyMelhem Carine Slaiby Aline Jrejiry Maya Majdalany Mohamad Zeaiter Gilbert Fadel Ali Ayoub AchrafArabi Mark Tahchy Hanna Francis Dany Tahchy Hiba Yaacoub Sami Harb Hassan Raad Mohamad Hajjar CameliaKanaan Zainab Saleh Ziad Moukarzel Jihad Hajj Chehadeh	Quality management - IRI	Training on ISO 17025: 2017 requirements & Risk assessment	16/23/05/2018	IRI



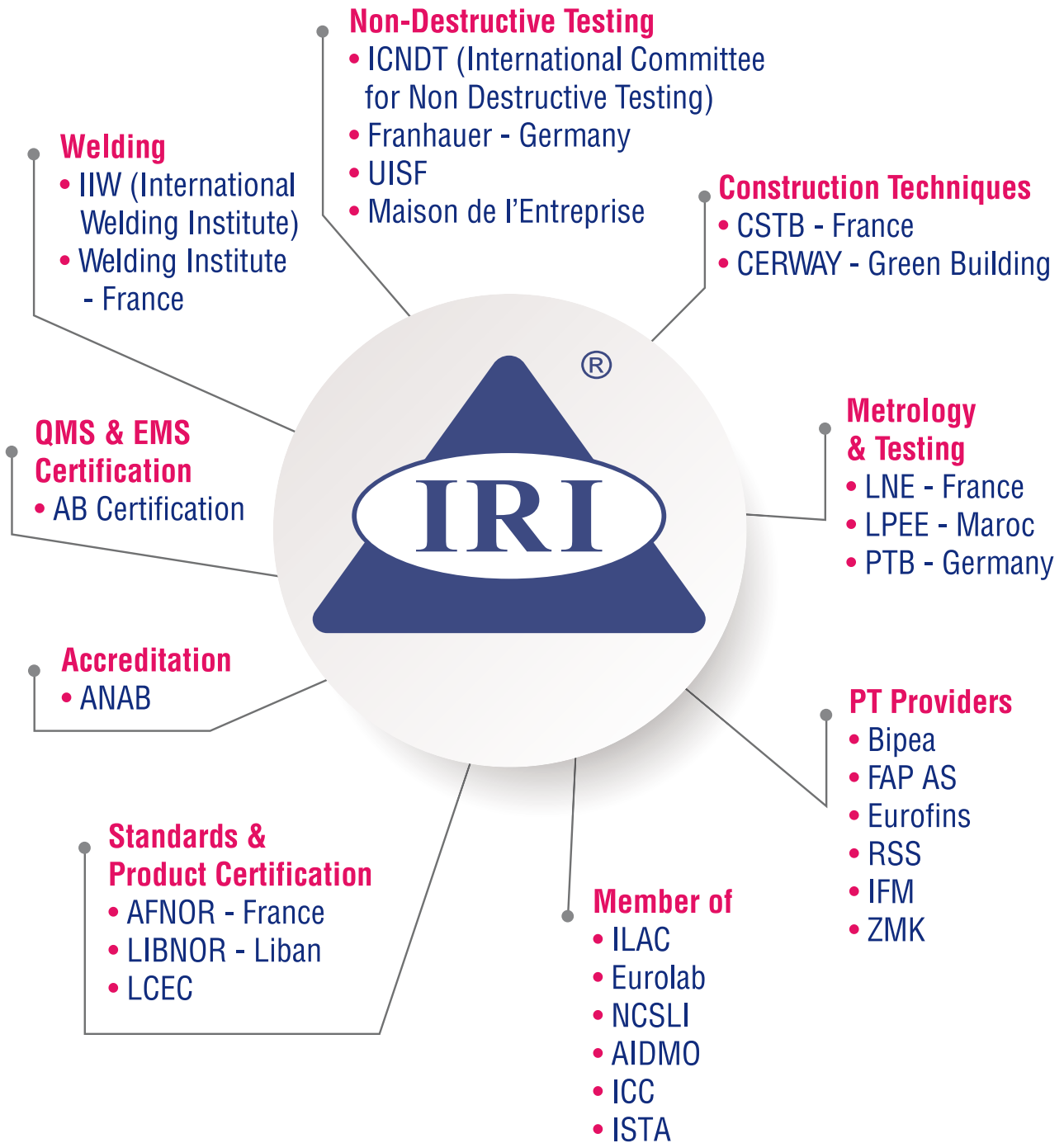
**INTERNATIONAL  
AND LOCAL  
PARTNERSHIPS**



# LOCAL PARTNERS



# INTERNATIONAL PARTNERS





**DECREES, LAWS  
AND DECISIONS**

## CIRCULARS

Law		Subject	Authority
Nbr	Date		
2/2018	16/01/2018	To all public administrations to include the reasons of drafts laws and decrees	President of the Council of Ministers
4/2018	29/01/2018	To all public administrations regarding the numbering of the laws and decrees pages	President of the Council of Ministers

## DECISIONS

Law		Official Gazette		Subject	Authority
Nbr	Date	Nbr	Date		
6779/ت	18/12/2017	1	04/01/2018	Technical requirements and specifications for equipping water treatment and bottling plants	Ministry of Industry
1294/1		1	04/01/2018	Environmental requirements to transport hazardous and infectious waste of health institutions	Ministry of Environment
10	11/01/2018	3	18/01/2018	Amending Decision No. 175 of 15/09/2015 on the replacement of metal gas cylinders (butane / propane) in local market	Ministry of Energy and Water
1/ات/م/1	17/01/2018	5	01/02/2018	Joint Decision No. 1/ات/م/1 to mention the importer's name and address on imported food items	Ministry of Economy and Trade
17/1	26/02/2018	10	08/03/2018	Amending Decision No. 114/1 on procedures and documents necessary to apply for an industrial certificate, for the water treatment and bottling plants	Ministry of Industry

Law		Official Gazette		Subject	Authority
Nbr	Date	Nbr	Date		
57/أ.ت	16/03/2018	24	24/05/2018	Reorganization of the National Council for Measurement	Ministry of Economy and Trade
69/1	31/05/2018	26	07/06/2018	Conducting laboratory tests on imported and packaged pasta and vermicelli products	Ministry of Industry
7060/ت	09/05/2018	23	17/05/2018	Determining the procedures to be followed by existing slaughterhouses	Ministry of Industry
100/1/أ.ت	06/06/2018	27	14/06/2018	Amending Decision No. 135/1/أ.ت of 28/7/2017	Ministry of Economy and Trade
75/1	19/06/2018	29	28/06/2018	Amending Decision No. 25/1 of 25/2/2015	Ministry of Industry
76/1	19/06/2018	29	28/06/2018	Amending Decision No. 33/1 of 27/3/2015	Ministry of Industry
563/1	24/07/2018	34	02/08/2018	Accreditation of a laboratory for the microbial, chemical and mycotoxin tests	Ministry of Agriculture
586/1	31/07/2018	35	09/08/2018	Conducting analyses of pesticide residues on imported tea, rice and dried fruits	Ministry of Agriculture
1431/1	17/09/2018	42	27/09/2018	Procedures of completing the voluntary destruction of expired goods and food products	Ministry of Finance
176	28/09/2018	44	11/10/2018	Annex to Decision No. 100/1/أ.ت of 6/6/2018 concerning the declaration mechanism of private power generators' owners at the Ministry of Economy and Trade	Ministry of Economy and Trade
202/1/أ.ت	30/10/2018	49	15/11/2018	Dumped imports of bars, angles and profiles entering Lebanon	Ministry of Economy and Trade



Law		Official Gazette		Subject	Authority
Nbr	Date	Nbr	Date		
226	07/11/2018	53	13/12/2018	Amending Decision No. 175 of 15/09/2015 on the replacement of metal gas cylinders (butane / propane) in local market	Ministry of Energy and Water

## LAWS

Law		Official Gazette		Subject	Authority
Nbr	Date	Nbr	Date		
78	13/04/2018	18	19/04/2018	Law on the Protection of Air Quality	President of the Republic
80	10/10/2018	45	18/10/2018	Integrated Management Of Solid Waste	President of the Republic
81	10/10/2018	45	18/10/2018	Electronic Transactions and Personal Data	President of the Republic

## DECREES

Law		Official Gazette		Subject	Authority
Nbr	Date	Nbr	Date		
2234	26/01/2018	5	01/02/2018	Conclusion of industrial cooperation protocol between the Republic of Lebanon and the Republic of Egypt	President of the Republic
2268	02/02/2018	6	08/02/2018	Memorandum of Understanding between the Government of Lebanon and the Government of Egypt for the cooperation on Micro, Small and Medium-sized Enterprises (MSMEs)	President of the Republic
2503	09/03/2018	12	22/03/2018	Adoption of a technical rule on Liquefied Petroleum Gas cylinders manufactured from composite materials and metal, and their accessories, as a legally binding rule	Ministry of Energy and Water



**COMMUNICATION  
& MEDIA**

**Al Morakeb Al Mali – Issue Nr. 315 – February 2019**

Interview with Dr Bassam Frenn



**Al Sinaa wal Iktisad – Issue Nr. 167 – March 2019**

Interview with Dr Bassam Frenn



## Annual Gathering at The Industrial Research Institute

a. LBC 09-01-2018



b. Al Manar 09-01-2018



c. NBN 09-01-2018







# النهار

الأربعاء 10 كانون الثاني 2018 السنة 85 - العدد 26458

## الفرن قدم جردة عن تطوّر معهد البحوث الحاج حسن: لم نلمس آثار النمو



السنين العشرين الماضية التي تولى فيها الدكتور الفرن لدارة المعهد، وأضاف: "أجدت المطالبة بضرورة وضع سياسة اقتصادية لتقود النشاطات الاقتصادية التي تزيد من نمو وتكثّر حجم الاقتصاد". وسأل: "هل نريد أن يبقى الناتج القومي بحدود 52 مليار دولار أم زيادته إلى 70 مليارات خلال فترة زمنية محددة؟ هل نريد رفع حصة القطاع الصناعي ومساهمته في الناتج المحلي وكيف وبأي مقدار؟ وبالتالى كيف نعمل على تطوير البحث العلمي والصناعي الذي نشقّ عليه وبدعمه ليساهم في تطوير الاقتصاد؟ هذه الأسئلة موجّهة إلى أركان الدولة والمسؤولين. وسأطرحها مجدداً في اجتماع اللجنة الاقتصادية الوزارية التي ستعقد عسر غد برئاسة رئيس مجلس الوزراء، وهو الاجتماع الأول لهذا العام بعد اجتماعين فقط العام الماضي. المطلوب تفعيل عمل هذه اللجنة لتخرج بمقررات ونتائج تعرضها على مجلس الوزراء لاتخاذ القرارات المداسية". وأوضح أن الحكومة حققت بعض الإنجازات على الصعيد السياسي والاقتصادي، مؤكداً أن تراجع الصادرات وزيادة الواردات والتعجز والنمو دليل واضح على ذلك. وختم: "يقال إن النمو سجل نسبة 2% العام الماضي، لكن آثاره لم تساهم تراجع مستوى البطالة مثلاً، ولا على مستوى تأجيز فرص عمل جديدة، ولا على زيادة الصادرات".

قدم المدير العام لمعهد البحوث الصناعية بسام الفرن في اللقاء السنوي لمديري المعهد وكوادره وموظفيه برعاية وزير الصناعة حسين الحاج حسن وحضوره والعديد من الوزارات داني جدهون، جردة تناول فيها أبرز الإنجازات التي تحققت خلال السنين العشرين الماضية منذ العام 1998 ولغاية نهاية العام 2017. وقال: "أصبح للمعهد اليوم دور أساسي في حماية الاقتصاد الوطني والمجتمع اللبناني والصناعة والتجارة والبيئة، وقد تطوّرت العلاقة بين المعهد ووزارة الصناعة والوزارات والادارات المعنية وكذلك مع القطاع الخاص، بهدف حماية المواطن اللبناني وتأمين البيئة النظيفة والصحة السليمة والسلامة العامة، ونحن موجودون لنستمر بفضل جهودكم ويتعاون أعضاء مجلس الإدارة. ونحن اليوم في مرحلة توسعية كبيرة من خلال تشييد بناء جديد محصّن بأفضل التقنيات لتصبح مساحات المعهد 14 ألف متر مربع تتوزّع فيما المراكز البحثية والمختبرات والمكاتب الفنية والإدارة لخدمة المواطن". وأثنى الحاج حسن على ما بات عليه معهد البحوث الصناعية من تطوّر وجدائه، "بحيث أصبح مرفقاً اقتصادياً مهماً للبنان، ويؤدي دوره ومهامه وفق رؤية وبرامج ودراسات واستراتيجيات الإنجازات المحققة أصبحت ناجزة بفضل الإدارة والموظفين والتسهم المتميز وبفضل تراكبات الإنجازات خلال

# الذيار

الثلاثاء 17 نيسان 2018

## سفيرة سويسرا في لبنان تزور معهد البحوث الصناعية



زارت سفيرة سويسرا في لبنان مونيك سشموتز كبيرو، معهد البحوث الصناعية، بدعوة من المدير العام للمعهد الدكتور بسام الفرن، وجات في الأقسام المختلفة والمختبرات ومراكز الدراسات والتخطيط، واطلعت على سير الأنشطة واستمعت إلى شروح تفصيلية وعلمية وفنية دقيقة عن طرق العمل بحسب المعايير العالمية والأوروبية على وجه التحديد، وأبدت إعجابها

سفيرة سويسرا في معهد البحوث

غابي ناصر وأركان السفارة السويسرية في لبنان وكبار المسؤولين في المعهد. وتمّ البحث في كيفية تعزيز تبادل الخبرات، ووضع رؤية مستقبلية للعمل المشترك في السنوات المقبلة. ورحب الدكتور بالسفيرة والوفد المرافق لها في معهد البحوث الصناعية، وأعرب عن تشجيعه التعاون والعمل المشترك بهدف تحقيق الأهداف المرجوة.

بالنقد والتطوير الكبيرين وبأسلوب العمل المتفتح. شاركت في الجولة المدير العام لوزارة الصناعة داني جدهون، إضافة إلى الوفد السويسري المرافق للسفيرة ووفد من مجلس الاعمال السويسري في لبنان ضمّ نائب الرئيس حبيب حاتم والأمين العام وايد اليان ورئيس غرفة التجارة الفرنسية - اللبنانية

# الشرق

الطبعة 11 حزيران 2018 - السنة 81 رقم العدد 26458

## لبنان في مؤتمر الإستشاريين الدوليين في الإدارة في فيينا



أول مناجة الجلسة الإستشارية

خلال حضور فعاء لتعقد المكوند الصناعية الدوليّة بسام فرن إنزال في مؤتمر الإستشاريين الدوليين في الإدارة، التي استضافتها غرفة الاقتصاد اللبنانيّة التصويّة في العاصمة النمساويّة فيينا بمشاركة عدد من أبرز رؤساء الشركات ومخاض الإدارة والمهنيين والعلماء والمسؤولين في الإدارة العامة والمؤسسات الصناعيّة الأوروبية والأميريّة. وقرر الفنّ عدم تناول فعاء العلاقات بين لبنان وأوروبا ومع انتماء على مختلف الصعد التنوّيع والاقتصاديّة والتجاريّة والثقافيّة والإكاديميّة، حدداً على المناجاة: علاقة متطوّرة وغير متاركة تتواءم على الصّمود والكلفة وتعاون والمثاق والتّمسك بشعائر العادات والتقاليد المعروفة والسّنة والعمارة.

وقرر الفنّ عدم تناول فعاء العلاقات بين لبنان وأوروبا ومع انتماء على مختلف الصعد التنوّيع والاقتصاديّة والتجاريّة والثقافيّة والإكاديميّة، حدداً على المناجاة: علاقة متطوّرة وغير متاركة تتواءم على الصّمود والكلفة وتعاون والمثاق والتّمسك بشعائر العادات والتقاليد المعروفة والسّنة والعمارة.

