



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 Hadat, and it is entitled to establish branches in all parts of the Lebanese Republic and abroad.

IRI is an independent national research center, and combines:

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

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

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

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

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

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

OUR ETHICAL STANDARDS

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



THE PRODUCTIVE ECONOMY RESCUES LEBANON

Director General of the Industrial Research Institute
Dr. Bassam Frenn

Since October 2019, Lebanon is reeling under huge economic pressures, coupled with the novel coronavirus outbreak the complication to another dimension. No cure have been found (until now) by scientists and researchers, the pandemic bewildered the global economies, while nations and populations are facing unprecedented hardships from lockdown, social distancing, business break down, loss of jobs compounded by a paralyzed economy, and catastrophic slumping of financial markets.

In Lebanon, since the last quarter of 2019, the import and export mechanisms of basic commodities were crippled due to the inability of transfer of hard currency liquidity, which halted the import of necessary raw materials and essential goods for the local market.

Furthermore, the COVID-19 infection prevention kept the Lebanese away from Chinese and non-Chinese products imported to Lebanon from countries heavily affected by the pandemic. They have also avoided means of transport dealing with Chinese ports and other countries plagued by the virus.

Fear overcame Lebanon as most of the countries thus obliging to take isolation measure.

As “the need is the mother of invention”, these factors should urge the Lebanese industry to take more initiatives towards recovery by taking bold and firm decisions to secure high-quality production of the needed products that cannot be imported and monitoring by the Industrial Research Institute. Equipped with high-tech scientific laboratories, IRI has also a highly diversified and experienced team, and can compete with similar international organizations.

By encouraging the national industry with high quality and competitive produce, we will uplift Lebanon’s economy. The Lebanese will then witness a long-awaited revival, from a dependent economy failing to an independent productive economy able to live by its own production.

The expansion of Lebanon’s industry offers multiple employment opportunities, in this sector and in other trade and service sectors. For every new job in the industry, three more jobs are created in other

sectors. Thus, household income increases, boosting their spending power and setting the stage for a rebound in the market and trade, in Lebanon.

On the other hand, the agricultural sector is similarly struggling, despite consolidating its diversification, enhancing its productivity and improving its quality. However, after border exit points were closed and the consumer markets were affected, the government had to back its exports by sea.

The agricultural produce constitute, by definition, the raw materials for the agro-food industry, which is a leading activity in Lebanon, ahead of many other sectors. When the industry thrives, the agricultural sector will follow suit and be a productive market for the local rural farming families, who will remain rooted in their villages and plains.

Driving the industrial and agricultural sectors to higher levels of exceptional production needs the creation of a Ministry of Industry and Foreign Trade. Therefore, legislation, regulation and coordination will ensure complementarity to contribute together to the economic objectives and the promotion of the national production, in both internal and external markets.

With an integrated economic approach for the local production process, trade services will flourish, Lebanese consumer demand will improve, export volumes will rise, trade deficits will shrink, balance of payments will swing to a surplus and the country will hold more hard currencies due to a decline in imports and an increase in export earnings. The national currency will be stronger and its purchasing power will be bolstered again, in an economy on the mend, rebounding from its steep downturn.

Undoubtedly, the industry coupled with innovation, have an important added value to the national economy, which was well deserved for decades.

We are all hopeful that the officials in general and the industrialists in particular, will seize the golden opportunities.



GENERAL PUBLIC ACTIVITIES



For Lebanon, 2019 has proven to be a year unlike any other. By mid-year, the political and security picture was muddled in this small country. Everybody adopted a wait-and-see stance, in anticipation of any new developments in the surrounding region, of a fragmented conflict between the United States and its allies on the one hand, and Iran and its allies on the other.

This caution crippled any economic progress, before the popular protests broke out on October 17 and paralyzed the country, its institutions and citizens. Many economic institutions closed down and tens of thousands of employees and workers were dismissed. The unemployment gripped the country when the national currency continued its depreciation, and the banks failed to cater for their customers' needs.

This bleak situation had ripple effects on IRI's activities, for the first time in 20 years. The decline is clear in the statistics recorded last year, as well as in the official activity of the Minister of Industry with the Industrial Research Institute and its Director General, Dr. Bassam Frenn who was present in all the official activities, workshops and seminars. His significant attendance in these events was a steady trend, unchanged since he took the reins of the Institute in 1998.

THE ECONOMIC ATTACHÉS VISIT IRI'S FACILITIES

DR. FRENN: "YOU WILL REBUILD LEBANON'S REPUTATION ABROAD AND RESTORE ITS PRISTINE IMAGE TARNISHED BY SOME POLITICIANS"

The Industrial Research Institute organized a broad tour for the economic attachés – appointed in the Ministry of Foreign Affairs and Emigrants – inside IRI's directorates on the 20th of February 2019, departments and laboratories. They were briefed on the Institute's role and interests, and on how they can cooperate with IRI's management, after taking office in their diplomatic missions abroad.

IRI's Financial and Administrative Director, Salim Kfoury, delivered an address on behalf of Director General Dr. Bassam Frenn, saying, "I welcome you in the Industrial Research Institute. Our meeting aims at showing the economic attachés IRI's activities, role and interests. On this occasion, I would like to acknowledge the initiative taken by the Ministry of Foreign Affairs and Emigrants, namely Minister Gebran Bassil, who prioritized in Lebanon's foreign policy what became known as the 'Economic Diplomacy'."



"At first, he promoted this diplomacy by dedicating to it conferences inside and outside Lebanon. It aims to enhance communication between the Lebanese in their homeland and the diaspora. He followed this initiative by appointing you in the role of economic attachés in several Lebanese embassies in Arab, European, American, African and Asian countries. You were not aware of the important role that you were able to play in the past, in the interest of Lebanon. As the French saying goes 'Mieux vaut tard que jamais', although this long-overdue step was late, it was better late than never. Thus, you will be Lebanon's economic ambassadors, so to speak," he added.

"Your main role is to revitalize Lebanon's economy, because you are the voice of Lebanese businesspeople, whether they are industrialists, farmers, entrepreneurs or investors. You will help them in finding external channels to market their products. Crossing the borders towards the foreign markets

is a major obstacle hindering the export of Lebanese products, although they have the specifications and quality required by international standards. This is where you will be playing an important role in facilitating this mission, in coordination with Lebanese institutions, led by the Industrial Research Institute. IRI will provide you with all the necessary information, details and data that you need in order to support the eligibility of the Lebanese production to transit towards the countries still barring access to their markets,” he said. “You will defend the Lebanese products, entrepreneurs and investors abroad. You will rebuild Lebanon’s reputation abroad, and restore its pristine image tarnished by some politicians, unfortunately,” he added.



“Lebanon is unable to continue its self-flagellation. Lebanese people deserve the best from us, and from you. They are waiting many achievements from the Lebanese government, which announced its new slogan ‘Let’s Start Work’. We have high hopes that concerted efforts will be made in this regard – especially with the new Minister of Industry Wael Abou Faour, after a successful experience with him in the Ministry of Public Health – in order to contribute to the recovery, reconstruction and development awaiting the country. We hope that all parties will avoid actions that might negatively affect Lebanon and its economy, as well as political wrangling and bickering. The country cannot afford more risks, amid a severe economic and social crisis. Lebanon will only be able to overcome the obstacles through joint actions, good intentions and bold initiatives,” he said.

“I wish you success in your new missions. Rest assured that the Industrial Research Institute, through its management, directors and employees, will always stand ready to fully cooperate with you, in the service of Lebanon and its economy, as well as the health and safety of the Lebanese citizens,” he concluded.

THE MINISTRY OF INDUSTRY AND FRANSABANK ORGANIZE A WORKSHOP AT IRI ON “SUGGESTED SOLUTIONS TO FINANCE THE SUSTAINABLE ENERGY USE IN INDUSTRY”

The Ministry of Industry and Fransabank organized in March 2019, a workshop at the Industrial Research Institute on “Suggested Solutions to Finance the Sustainable Energy Use in Industry”, under the patronage of the Minister of Industry Wael Abou Faour, represented by MOI’s Director General, Dany Gedeon.

The event was attended by IRI’s Director General Dr. Bassam Frenn, Fransabank’s General Manager Nabil Kassar, the Environment Committee Head at the Association of Lebanese Industrialists Eng. Ibrahim Mallah, representing the Chairman of the Association Fady Gemayel, the Director of the Lebanese Center for Energy Conservation Pierre El Khoury, industrialists, environmentalists and employees in MOI, Fransabank and IRI, along with representatives of ministries, public administrations and academic institutions.

Dr. Frenn

In a speech, Dr. Frenn stressed that “the seminar centers on three main topics of considerable importance and reveals the strategic correlation between the components of this research. In other terms, how to find the best methods to finance the industrial production with sustainable, alternative or renewable energy, which is a green and cost-efficient energy, in order to reach the so-called Green Industry. IRI was and remains at the forefront of the efforts aiming to guide the industrialists – and help them through ad hoc seminars and workshops, as well as field visits to plants – towards the importance and necessity of using the resource efficiency and the cleaner production, inside the industrial enterprises to lower the cost of production, rationalize the use of raw materials, power and fuel, reduce the negative environmental impact and adopt and apply the modern manufacturing technologies, to boost the export of Lebanese products.”

“In Lebanon, we can rely on several sources of renewable energy, primarily the solar power, with an important role for the wind power and the hydropower,” he concluded.

Mallah

Ibrahim Mallah said that the “Association of Lebanese Industrialists (ALI) attached a great importance to the energy sector, whether for its sources, uses, costs or impact on economy and environment. ALI called for launching a broad national strategy to rationalize and reduce the cost of energy use, to adopt the alternative energy, to support the extensive energy and to tap into the future energy. This is the responsibility of the Lebanese plants, by embracing modern management methods, increasing the production capacity, using new high-tech machineries and being energy efficient by adopting the



interactive system, based on an available financing from funding programs and subsidized long-term loans with as low as 1 percent interest.” Mallah encouraged “the widespread use of various alternative energy, especially that Lebanon has more than 300 sunny days per year, as well as many windy areas that are ideal to build wind farms, and many choices for harnessing the hydropower.”

Kassar

Nabil Kassar mentioned the importance of realizing the “danger of the climate change and the global warming, and of their negative impact on future generations.” He emphasized that “together, we will be able to encourage and prompt you to change the quality of your work and adopt the energy efficiency and the renewable energy in your activities. This will allow you to reduce the energy bills by more than 50 percent, and to safeguard the environment at the same time.”

He declared that “Fransabank funded, during the last three years, with over \$120M, energy-efficiency, renewable energy and green building projects, covering more than 175 plans. These projects contributed to a significant reduction in carbon dioxide emissions (in excess of 7,000 tons), and to over 11 million kilowatts of power per year. In April 2018, Fransabank was the first bank in the Levant region to issue Green Bonds with the value of \$60M. The International Finance Corporation (IFC) has subscribed for \$45M, while the European Bank for Reconstruction and Development (EBRD) subscribed for the remaining \$15M. These Green Bonds are exclusively used to promote green and environmentally friendly projects.”

Gedeon

Dany Gedeon explained the importance and need of innovation in industrial production for the sustainability and prosperity of the Lebanese industrial sector. He stressed the importance of embracing the alternative energy to achieve a cost-efficient production, safeguard environment and promote a Green Industry concept, as part of the Ministry's integrated vision "Lebanon Industry 2025." One of the vision's operational objectives is to adopt the knowledge economy, by being committed to the innovation, specialization and integration in production, development and environmental conservation.

Gedeon thanked the Industrial Research Institute – the best paradigm of cooperation between the public and private sectors, since the mid-twentieth century, as a center for technical and laboratory research, development and tests – for hosting the renewable energy workshop. He also thanked Fransabank for its initiative, collaboration and partnership with the Ministry in adopting the renewable energy, and for its role in launching funding programs for interested industrialists, organizing workshops in different regions and fostering cooperation with foreign countries, and China in particular."

The Association of Lebanese Industrialists, the long-standing partner of the Ministry of Industry, was also mentioned by Gedeon who wished an ongoing joint action for the benefit of the industrial sector. He also wished every success to all the participants in the event.

Finally, two documentaries were screened, about the Ministry of Industry's activities and Fransabank's initiative in funding sustainable energy projects.

Zarifeh

Antoine Zarifeh, Fransabank's Head of the Branch Network Division (BND), spoke about the financial and economic benefits of the gradual transition towards the use of sustainable energy.

El Khoury

In his address, the Director of the Lebanese Center for Energy Conservation, Pierre El Khoury, presented the alternative energy projects, plans and initiatives. Our objective, he said, is to reach 12% of our energy consumption from alternative energy sources.

Kikano

Fares Kikano, IFC Sustainable Energy Finance Consultant, described the role of alternative energy use in reducing the cost of agricultural production.

Saliba

In his speech, Salah Saliba, team leader of Lebanon Water Project (LWP), outlined the plans aiming to efficiently manage the water sector in Lebanon, especially as the percentage of water resources waste is very high.

THE MINISTRY OF INDUSTRY AND IRI HOLD A WORKSHOP ON THE CHALLENGES OF IT ADVANCES IN THE INDUSTRIAL SECTOR

The Ministry of Industry and the Industrial Research Institute held a workshop on “Addressing the Challenges Facing the Lebanese Industrial Sector Amid the IT Advances” on the 7th of March 2019, in cooperation with the Triple C consultancy, in the Institute’s headquarters, in Hadat.

The workshop was under the patronage of the Minister of Industry, Wael Abou Faour, who was represented by Dany Gedeon, Director General of the Ministry. The event was attended by IRI’s Director General Dr. Bassam Frenn, the Education and Higher Education Minister’s representative Dr. Naim Ouaini, as well as industrialists, IT experts, academics and employees from the Ministry, the Institute and other departments.



Frenn

In his address, Dr. Frenn explained how “the relation between the IT and industrial sectors is not a traditional concept anymore, and it went beyond its formal state, whether in research, innovation or economic development. The new concept became a steppingstone towards an investment partnership in a globalized economic world, with totally different criteria. IT and industry offer a broad scope for the specialized youth, to meet their requirements, and an opportunity to launch their creative and innovative initiatives in a confined space open to the wider universe.”

He underscored that the “industrial investment needs advanced IT systems in order to become a more productive sector and to comply with stricter standards and specifications, by applying practical policies and processes, based on flexible parameters that reconsider the existing concepts. The information technology world is diametrically opposed to the past, thriving in the present, with a totally unknown foreseeable future.”

He described the advanced role played by the Industrial Research Institute, which “appears in motivating the creativity and backing it with expertise, studies, consultancies and material support sometimes, in different ways. An example of these motivational models is a contest organized by IRI’s Centre for Innovation and Technology (CIT) on innovation, and a 10,000-euro prize for the

winning projects. We are firmly convinced that these projects contribute to the economic growth and the social and economic sustainable development in the Lebanese society.”

Rizk

The CEO of Triple C, Eng. Bernard Rizk, said that after “the e-commerce boom and the opening-up of international markets, the world of industry experienced more competitions and challenges. The industrialists became obsessed with manufacturing new, high-quality products with very competitive prices. This contributed to the use of smart machineries, robots and Internet inside the factories. The information technology, its networks, the cyber security and the data security became an utmost priority for every manufacturer.”

“The introduction of information technology into the industrial sector posed new challenges for the manufacturers. The elaboration of new studies became indispensable, along with the creation and protection of an advanced IT network. It was necessary to protect the data, the new “oil” of the IT world, and to follow up on, maintain, backup it and ensure its accessibility at all times and in all places,” he added.

Gedeon

Dany Gedeon emphasized, in his address, the need to keep pace with the Fourth Industrial Revolution that is actively underway around the world, based on the Artificial Intelligence, notably the advanced electronics, technologies and innovation. “Lebanon in general and the national industry in particular, should stay the course and keep developing the production and innovating new and advanced products and manufacturing methods. They also should electronically protect any gains, information and operational data, which requires giving a special attention to these objectives, in both the public and private sectors,” he said.

Gedeon thanked the Industrial Research Institute for its pioneering developments, researches, laboratories tests and studies, and for hosting, organizing and actively participating in workshops, conferences and seminars. He also thanked Triple C, the programming and IT system solutions company, for its cooperation and initiatives in organizing this meeting with industrialists and specialists in order to exchange expertise and access the most up-to-date technologies in the information technology, and to use them in the industrial sector.

DR. FRENN: “WE ARE COMMITTED TO DEVELOPING INITIATIVES TO MAINTAIN THE EFFICIENT USE OF RESOURCES” IRI DEVELOPED THE FIRST ASSESSMENT SYSTEM FOR THE GREEN BUILDINGS IN LEBANON AND SIGNED AN AGREEMENT WITH “JBEIL AHLA” TO BUILD A GREEN-COMPLIANT CONVENTION CENTER

The Industrial Research Institute’s Director General, Dr. Bassam Frenn, announced on 12 March 2019, that “the Institute developed the first evaluation system for the green buildings in Lebanon, named CEDRE, to deliver a Certificate of Conformity for the sustainable buildings complying with the specific durability requirements contained in the applicable international standards. The new brand name CEDRE is the property of the



Industrial Research Institute. This allows IRI to manage alone the new system, or to authorize its use, in accordance with the required conditions it imposes. The green buildings evaluation system CEDRE is now comparable to international specialized assessment systems, such as the HQE (Haute Qualité Environnementale) that is operated by CERWAY.”

“The Jbeil Ahla association, headed by Nabil Hawat, initiated the CEDRE and HQE systems in a public development project, which it plans to execute within the Jbeil Municipalities Union. The “Antoine Abdel Massih Convention Center” project is a 1,300-seat auditorium and conference rooms, as well as green areas and playgrounds covering 6,000 square meters,” he added.

To this end, a contract was signed between the Industrial Research Institute, represented by Dr. Frenn, and Jbeil Ahla, represented by Mr. Hawat, under which the association has committed to apply the green buildings system requirements.

Dr. Frenn welcomed the initiative, underscoring IRI’s commitment to develop the partnership with the public and private sectors, through development initiatives for the environmental conservation, public safety, efficient use of resources, management, operation and maintenance, which require a close cooperation at all the project implementation stages, between the design team, supervisors, engineers and architects.

He stressed that embracing the concept of green buildings is steadily progressing, with new evolving technologies, in order to limit the wide construction implications on the human health and natural environment, by:

- Using the energy, water and other resources efficiently

- Protecting the human health and improving the employees productivity
- Reducing waste, pollution and environmental degradation

He wished that this step would be a role model to municipalities and associations for the sustainable development in Lebanon.



MENTAL HEALTH CONFERENCE SPONSORED BY CLAUDINE AOUN ROUKOZ; ATTENDED BY MP DR. SALIM KHOURY AND IRI'S DIRECTOR GENERAL DR. BASSAM FRENN

The Lebanese University Faculty of Public Health organized a conference on the mental health on 3 April 2019, which was sponsored and attended by Claudine Aoun Roukoz, President of the National Commission for Lebanese Women (NCLW).

The main figures participating in the event were MP Dr. Salim Khoury, IRI's Director General Dr. Bassam Frenn, Faculty of Public Health Dean Dr. Nina Saadallah Zeidan, Faculty of Public Health Director Dr. Samir Taha, Head of the Department of Occupational Therapy Dr. Sarkis Abi Tannous, Head of Midwifery Department Dr. Zeina Kattar and Head of ASIL Center Maliha El Sadr.



The conference was held on April 3, 2019, to raise awareness on the



importance of the mental health in the Lebanese society and how to deal with daily pressures within the family, at work and in the society, as well as on the importance of the mental health in fighting illnesses, particularly the chronic diseases. The conference also highlighted ways to maintain a work-family balance in order to face any exhaustion that might lead to depression, and to protect university students against stress and psychological pressure.

Dr. Taha, Dr. Zeidan and NCLW's President Claudine Aoun Roukoz delivered opening addresses at the beginning of the conference.

ABOU FAOUR FOLLOWS UP WITH IRI AND ALI TO FACILITATE THE ENTRY OF INDUSTRIAL RAW MATERIALS THROUGH SEAPORTS AND TO EASE RESTRICTIONS

The Minister of Industry, Wael Abou Faour, chaired a meeting on 8 April 2019, between the Industrial Research Institute (IRI) and the Association of Lebanese Industrialists (ALI), to discuss how to ease the entry of industrial raw materials through seaports and the obstacles hindering this process by several departments and directorates.

The meeting was attended by the Director General of the Ministry of Industry Dany Gedeon, IRI's Director General Dr. Bassam Frenn and ALI's Deputy Chairman Georges Nasrawi.

They emphasized IRI's leading role in serving the industrial sector and its positive cooperation with the Association of Lebanese Industrialists. The Minister of Industry Wael Abou Faour requested the preparation of lists including the raw materials facing entry restrictions, to study them with the relevant ministers and officials.

Dr. Frenn

After the meeting, Dr. Bassam Frenn said, "We discussed the issue of easing some procedures for the industrialists, in particular how to reduce the obstacles hindering the industrial raw materials when they enter through seaports. It is known that IRI is charging symbolic fees for the laboratory tests, especially for the industrialists. The Institute will prepare lists to be submitted to the Minister of Industry, as a prelude to adopt the Ministry of Industry as the only reference in dealing with the industrial materials. Abou Faour seemed insisting on this approach, and we stand by him in order to find the best methods and procedures to facilitate the work and reduce the burden on the industrial production sector."

Nasrawi

Georges Nasrawi thanked "Abou Faour for his initiative in convening this meeting," underscoring "the permanent and positive collaboration between the Association of Lebanese Industrialists and the Industrial Research Institute that is providing all the necessary assistance to the industrialists. We discussed the process of easing the entry of industrial raw materials, and reducing the restrictions hindering their entry, by other directorates and ministries. The Minister Abou Faour will follow up on this issue with the concerned ministers in order to meet this target."



THE MINISTER OF INDUSTRY VISITS THE INDUSTRIAL RESEARCH INSTITUTE

**DR. FRENN STRESSES THE IMPORTANCE OF BACKING THE NEGLECTED APPLIED RESEARCH SECTOR IN LEBANON
ABOU FAOUR: “WE ARE PROUD OF IRI’S ACHIEVEMENTS AND HOPE THE INDUSTRIAL RESEARCHES AND EXPERIMENTS WILL RECEIVE ADDITIONAL OFFICIAL SUPPORT”**

The Minister of Industry Wael Abou Faour visited the Industrial Research Institute on the 8th of May 2019 and was received by its Director General Dr. Bassam Frenn, the Industry Ministry’s Director General Dany Gedeon, as well as IRI’s directors and senior staff. The Minister toured the Institute visiting its research and study centers, laboratories and different sections.

Abou Faour praised the role and mission of the Industrial Research Institute, underlining the continued facilitation provided to the industrialists, after completing the first list including raw materials used in the industry, which need to be exempted from lab tests, to reduce the charges incurred by industrialists. “We intend to study a new list that will be read very soon,” the Minister said.

Dr. Frenn

After the screening of a film about the Institute, its inception and development, Dr. Bassam Frenn delivered a speech welcoming the Minister Wael Abou Faour and commending a previous experience with him, when he was the Minister of Public Health. He emphasized his patronage and constructive role in developing the industry and supporting the Institute. Dr. Frenn also explained how IRI is self-sufficient and self-funded, without any support from the state.



He stressed the importance of supporting the neglected applied research sector in Lebanon. He distinguished between the scientific research and the applied research, knowing that the latter is more important for a country like Lebanon. Experience to date has shown that every 1 dollar spent in the applied research yields around 20 dollars.

He expressed his regret that the procedures of protecting inventions and discoveries are nonexistent, saying that, “amid IRI’s development, Lebanon promoted its economic role, scientific position, research prospects and new technological performance, which is comparable to what we can see in the finest similar European institutions.”

“IRI’s management equipped its laboratories with the most advanced state-of-the-art machines for testing and calibration. Their credibility, reliability and competency are reflected in the international certificates of conformity granted by the Institute. This is helping to easily export the Lebanese industry products to countries of destination, and the citizen to consume goods and products, whether they are local or imported, complying with global quality and safety standards,” he said.

Dr. Frenn added that “The Industrial Research Institute has many specialized centers, namely the Lebanese Cleaner Production Center (LCPC), the Euro-Lebanese Centre For Industrial Modernization (ELCIM) and the Center for Innovation and Technology (CIT). These centers conduct research and development, and provide guidance and counselling to industrialists.”

Minister Abou Faour

The Minister of Industry, Wael Abou Faour, said “I am proud of this visit to the Industrial Research Institute, which is playing an essential role. If there is any opportunity for Lebanon to compete with its production, it will be through prioritizing researches and studies. We regret to see what other countries are dedicating in their budgets to the scientific researches, in comparison to an inexistent investment in this field here, although Lebanon has a strong scientific base and human resources. The Israeli enemy, for example, is spending 10% of its GDP on education and research. In Lebanon, the research budgets for the relevant ministries, institutions and the Lebanese University are negligible. We are falling behind other countries and this negative impact will be felt soon after Lebanon was at the forefront with its unique scientific position. Its role is declining compared to the emerging countries that have the economic and scientific vision, and are willing to invest in this field.”

“We are proud of the Industrial Research Institute and of its achievements thanks to the commitment and dedication of its Director General and personnel. We will continue with the same pace and efforts,



after realizing that IRI is conducting studies and development plans on the research, capabilities and laboratories. I draw the attention to the importance of developing the Institute’s role with other ministries and institutions,” he added.

“When I was a Minister of Public Health, I had a successful experience with the Industrial Research Institute, and we were relying at the Ministry on the tests we were conducting inside its laboratories. We discovered at that time the importance of these specialized labs and institutes for this purpose in Lebanon,” he recalled.

He also underlined that, “Not investing in research in the future will have a negative effect on growth and development.

As a Minister of Industry in charge of this Institute, I am willing to do all what can help in developing its work, supporting it and consolidating its position and national role.”



“I will strive to strengthen IRI’s role in developing

and serving the industry. The economic approach and political mentality that prevailed in Lebanon during the past years, did not offer the industry what it really deserves. This rent-based mentality is still the same and refuses all productive logic in Lebanon. The injustice against that industry, but also the agriculture, is the result of the control by this approach of the political decision-making over the previous years. This led to the decline of the industrial sector and its role. I proceed from a completely different mindset, which is fully biased towards production. A long-awaited confrontation should happen inside the political decision-making process concerning the stance on the productive sectors,” he said.

“In the past, we tried to rely on the services, banking and real estate sectors. This proved to achieve an economic advancement, but it was unstable, unsustainable and fragile. Positioning the industry in the place it deserves requires many procedures that should be taken inside the Cabinet, on the protection, export promotion and support levels. I hope we will be able to ratify a first batch of already studied files needing protection. Some goods that need to drop protectionist fees were re-examined with the Ministry of Economy, upon the Prime Minister’s request, in order to guarantee a fair competition and to protect our economy. There are also other useful procedures for the industrialists, which we started considering with the Industrial Research Institute. This will help the industrialists to lower their costs and to promptly achieve the administrative procedures,” he concluded.

I CONSIDER IT A QUANTUM LEAP DRIVING US TO INCREASINGLY ADHERE TO COOPERATION BETWEEN CCIAT AND IRI

**DABBOUSSI: THE MEETING WITH DR. FRENN IS THE OUTCOME OF CLOSE COOPERATION
DR. FRENN: WE ARE PARTNERS IN DEVELOPING OUR ECONOMIC SECTORS AND
ATTRACTING INVESTMENTS**

In the context of developing the close cooperation between the Chamber of Commerce, Industry and Agriculture of Tripoli and North Lebanon (CCIAT) and the Industrial Research Institute (IRI), the Chamber's President Tawfik Dabboussi received IRI's Director General Dr. Bassam Frenn, and discussed the investment and development projects launched by CCIAT to revive the national economy and to place Lebanon, from Greater Tripoli, on the Lebanese, Arab and international investment map. The meeting was attended by IRI's Applied Research and Testing Acting Director, Professor Joseph Matta, the Development Director Dr. Imad Hage Chehade, the Administrative Director Salim Kfoury and Mr. Khaled Al Ghoul, as well as CCIAT's Vice President Ibrahim Foz and the Chamber's General Manager Ms. Linda Sultan.

President Dabboussi

CCIAT's President Tawfik Dabboussi considered that "the meeting with the Director General of the Industrial Research Institute Dr. Bassam Frenn and his team is the outcome of a close cooperation between the Institute and the Chamber, for many years, since the idea of adopting quality control laboratories in Tripoli's CCIAT. Moreover, the advanced stage reached by the laboratories, as for the international reliance and the state-of-the-art technical infrastructure, is an integral part of IRI's aspirations."

"We consider ourselves as real partners in our approach to different projects of economic revival and sustainable development, and in tackling different investment projects, especially that CCIAT has



a national economic development project in Lebanon from Greater Tripoli, which is an integrated multifunctional economic system. We look forward to expanding our partnership with the Industrial Research Institute, by jointly adopting any procedure that can strengthen this partnership at different levels," he added.

Visiting CCIAT's Projects

After the meeting, Dr. Frenn and the delegation accompanying him were briefed in an internal tour on the Chamber's projects, from the Business Incubator, to the Quality Control Center Laboratories (QCC) and the Industrial Development and Research Center. On the sidelines of

the visit, Dr. Frenn commented on his meeting with President Dabboussi and their discussions on different topics of common concern. He thanked “President Dabboussi for this opportunity to see the major achievements recorded in the Chamber of Tripoli, which are an honor and a source of pride for us. The relation between IRI and CCIAT is based on strong foundations, for many years now, and we have many major and common future collaborations together.”



Dr. Frenn

In his address, Dr. Frenn expressed his “great appreciation to the major economic system that President Dabboussi showed us. This project, if implemented, will reduce the burden of overcrowding and saturation in the capital Beirut, and is certainly a promising and ambitious future project.”

“As for the projects implemented in the Chamber of Commerce, Industry and Agriculture of Tripoli and North Lebanon, they are exceptionally focusing on the Lebanese products and their quality, which are essential Lebanese products, whether they are agricultural or industrial. In all the projects, that we were briefed on by President Dabboussi, there was a clear evidence of the deep commitment of CCIAT’s President, board of directors and administration, in major national issues revolving around the human health and consumer protection. We always reach out, as in all the stages, to cooperate since we are partners in preserving the quality, promoting investments and securing employment,” he added.

At the end, President Dabboussi thanked Dr. Frenn for “his good impressions,” noting that “his visit constituted a quantum leap that drives us to increasingly adhere to cooperation in a coherent teamwork aiming to develop this collaboration, to become a real partnership. We are proud of this partnership with Dr. Bassam Frenn, which is a driving force for the national services offered by both the Industrial Research Institute and Tripoli’s Chamber.”

AGREEMENT BETWEEN IRI AND LAU APPLIED RESEARCH PROGRAMS AND CONTINUOUS EXCHANGE OF INFORMATION, EXPERTISE AND TRAINING

The Lebanese American University (LAU) and the Industrial Research Institute signed a cooperation agreement to provide a legal framework for collaboration between the LAU and IRI on applied research programs, and the continuous exchange of information, expertise and training, in the service of Agro-Food sector, as part of the development dynamics strengthening.



The university was represented by Dr. Costantine Daher, Interim Dean of the School of Arts and Sciences, along with professors from the School and the Nutrition Program. On the other hand, IRI's Administrative Director Salim Kfoury was acting on behalf of the Director General who was representing the Industrial Research Institute. The meeting was also attended by Naji Abi Zeid, Director of the Euro-Lebanese Centre For Industrial Modernization (ELCIM) and Ramzi Bhamdouni.

In his address, the Interim Dean Costantine Daher welcomed the audience, emphasizing the importance of cooperation between the LAU, IRI and ELCIM, particularly that the university possesses the academic capabilities and capital entitling it to support IRI's objectives and the center that focuses on supporting the SMEs in the Agro-Food sector, in order to establish "Food Advisory Units", providing advisory support and developing Agro-Food industries in Lebanon.

IRI's Administrative and Financial Director Salim Kfoury pointed out to the importance of planning and developing the technical knowledge, such as laboratories and specialized centers, as well as ELCIM's Food Advisory Unit. He stressed the importance of applying the quality standards and the international accreditation certificates, along with the scientific interaction and collaboration with international institutions.

He considered that "the agreement falls under IRI's strategy of exposure to scientific institutions and the pioneering power of complementation between the Institute and the Lebanese American University, in the service of science, applied research, development, industry and consumer protection."

Finally, he thanked all the persons who contributed to finalize the agreement, particularly Dr. Hussein Hassan from the university, as well as Naji Abi Zeid and Ramzi Bhamdouni from ELCIM.



**LABORATORY SERVICES,
OBSERVATIONS &
ACTIVITIES**

DESPITE LEBANON'S INTERNAL CRISIS AND THE GENERAL ECONOMIC ACTIVITY DISRUPTION DURING THE LAST QUARTER OF 2019, THE INDUSTRIAL RESEARCH INSTITUTE (IRI) CONTINUES TO EFFICIENTLY DELIVER ITS SERVICES WITH 36,000 CUSTOMS FILES, 330,000 LABORATORY TESTS, 48,000 SAMPLES AND 672,000 GAS CYLINDERS.

IRI was actively engaged in its activities in spite of all the obstacles posed by a volatile regional backdrop and mounting internal uncertainties, which stalled the economic activity in Lebanon during the last quarter of 2019.

However, the persistence and determination of the Institute's management, and its continued presence by overcoming all the barriers, were another reaffirmation of IRI's goals since 1998, when Dr. Bassam Frenn became its Director General. He turned the Industrial Research Institute 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 Institute from internal political tensions and economic slump, confirming its commitment to work ethics and operational success, and promoting all the national economy sectors through scientific data and results, strengthening it locally and internationally.

IRI remains 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. The Institute allowed financial savings and offered a scientific support – achieving rapid results – in the campaign of controlling and inspecting the industrial, agricultural 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:

- 372,992 conformity tests and analyses were conducted by IRI's laboratories during 2019, decreasing by 40,916 operations compared to 2018, or by 11%, and reaching 1,294 daily tests on average.
- In addition to these tests and analyses, the Institute inspected 279 pressure receptacles, as well as 672,262 locally manufactured gas cylinders.
- Standardization and calibration tests reached 19,218 on 2,051 samples.
- As for the imported merchandises entering from Lebanon's border crossings, IRI carried out assessments of conformity to mandatory requirements, by examining 36,272 files at a daily rate of 142 files.

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

The Electrical Laboratories are still outpacing other laboratories in the number of tests they performed during 2019, by almost 36%, ahead of the Chemical Laboratories, whose share in the experiments was around 25%. The Engineering and Soil Laboratories accounted for around 18%, while Microbiological tests reached 10% of the total, followed by the Petroleum and Paint Laboratories, then the Central Laboratory for grains, flour and bread research and the Textile and Leather Laboratories.

Tests included 48,717 samples of the previously mentioned types.

The Welding Laboratory performed 2,303 experiments on nearly 7 projects.

NUMBER OF TESTS BY LABORATORY

Year	2019	2018	2017	2016	2015
Chemical and physico-chemical	81500	80600	67870	71400	72850
Microbiological analyses	33500	39300	35700	37620	39614
Textile, leather and rubber	5900	6750	7100	6830	6397
Paint, Petroleum and derivatives	16500	16150	15200	13200	12450
Civil Engineering	60010	80821	86868	93073	72972
Electricity	118484	122841	124633	119595	130011
Central Laboratory for grains, flour and bread research	13879	21678	14742	9973	7543
Welding	2303	4852	1194	3281	4015
Total	332076	372992	353307	354972	345852

According to statistical tables, laboratories activities were as follows:

Chemical and physico-chemical laboratories

The total number of experimental operations inside the chemical and physico-chemical laboratories reached 81,500 tests, increasing by 900 or 1.1%, and accounting for around 21.9% of all laboratories tests.

Microbiological analyses

There was a decrease in microbiological experiments by 5,800 or 15% to 33,500 tests. Overall, they represented 10% of the total number of experiments.

Textile, leather and rubber laboratories

The number of tests and analyses in these laboratories, during 2019, decreased by 850 or 14.5%, but this sector maintained some of its full production capacity, reached during the stable security situation. This recovery was initially due to the decline in exports from Syria or the inflow of skillful

Syrian workforce to Lebanon. The number of these experiments and tests reached 5,900 representing 1.8% of total experiments.

Petroleum and derivatives laboratories

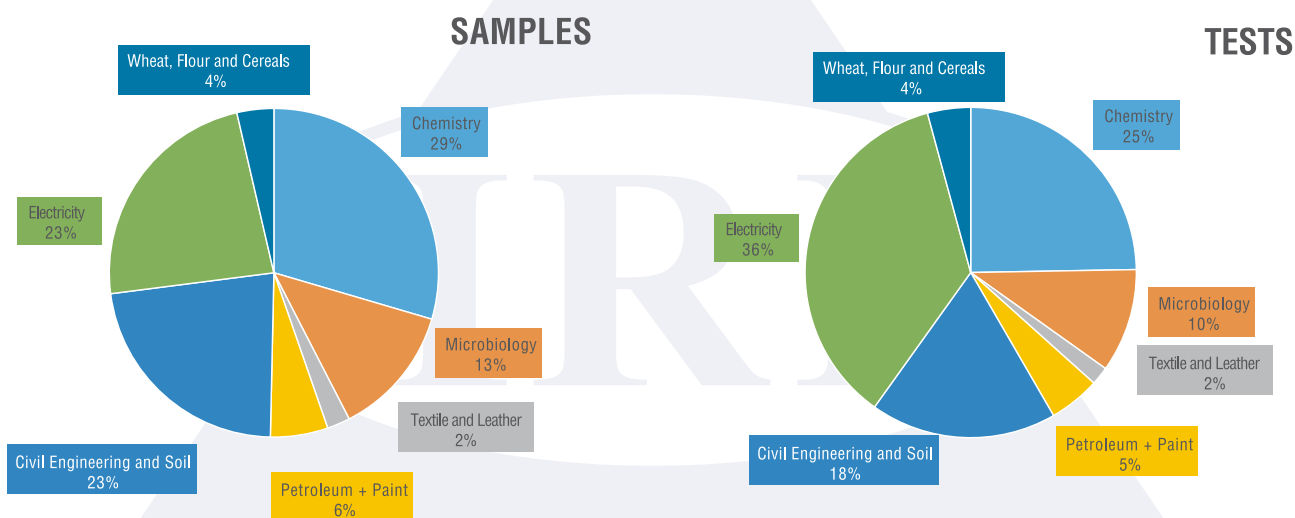
Paint and petroleum laboratories made a solid jump from 350 tests to 16,500 tests in 2019, accounting for 5% of the total activity.

Civil engineering laboratories

The civil engineering and soil laboratories conducted 60,010 tests accounting for about 18% of the total. The number of these tests decreased due the stagnating construction sector in Lebanon after the decline in demand for housing and the uncertainties during the last quarter of 2019.

Electrical laboratories

The electrical laboratories, which represent 36% of the overall laboratories operations, performed around 119,000 experiments, down from 123,000 in 2018, or by 3.6%.



EXTERNAL INSPECTION

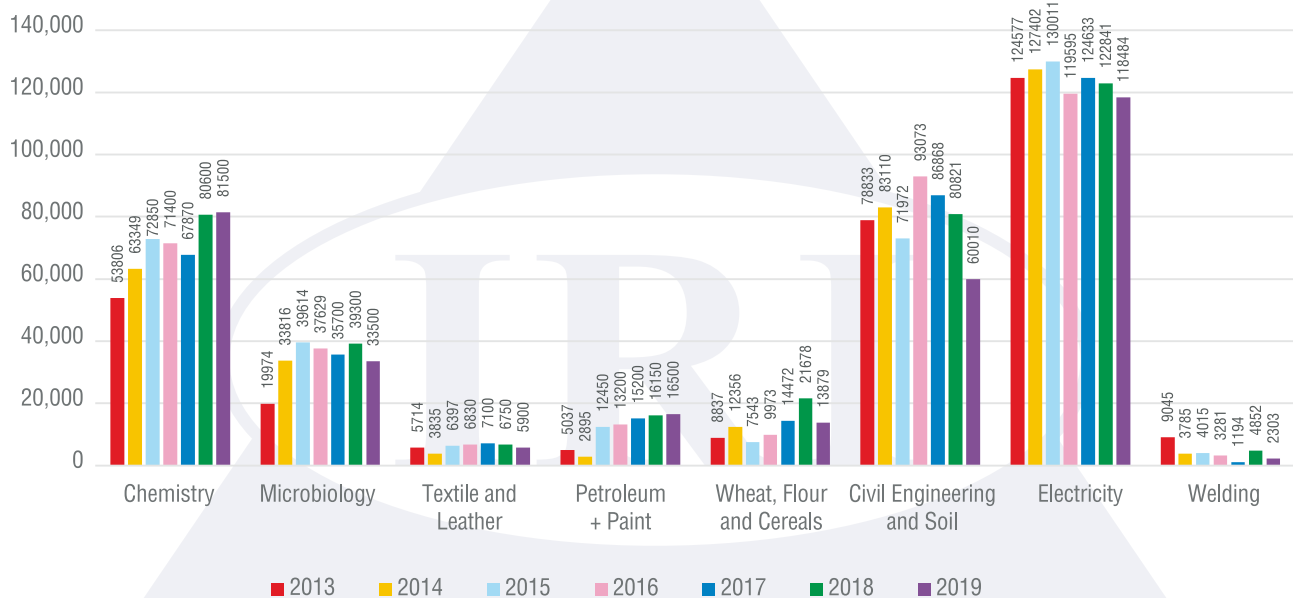
Year	2019	2018	2017	2016	2015
Gas storage tanks inspection	79	109	155	162	170
Fuel tanks inspection and calibration	39	41	50	93	70
Steam boiler inspection	161	188	99	81	108
Various pressure devices inspection					
Total	279	338	304	336	348
Local gas cylinders inspection and control	672262	677600	649776	615570	0
Imported gas cylinders inspection and control	0	14784	5000	0	8920

THE CENTRAL LABORATORY FOR GRAINS, FLOUR AND BREAD RESEARCH

In light of the close cooperation between the Ministry of Economy and Trade and the Industrial Research Institute, the laboratory is in the service of the Ministry given its responsibility towards performing laboratory tests on imported wheat, as well as inspecting the majority of imported and locally produced goods. The tests conducted by the Central Laboratory for grains, flour and bread research, decreased from 21,678 tests in 2018 to 13,879 in 2019, down by 7,799 tests or 36%.

WELDING LABORATORIES

As for the number of welding operations, it reached 2,303, decreasing by 2,549 operations, or by 52% compared to 2018.



METROLOGY AND CALIBRATION LABORATORIES

Metrology laboratories increased their activity during 2019, seeing a growth by 2.5% compared to 2018, and performing 19,218 tests compared to 18,566 in the previous year.

These laboratories received 2,051 metrology instruments. The tests covered the temperature, pressure, force, mass, dimensions and electricity.

The activities of these laboratories included:

Temperature

Temperature laboratories received 553 instruments and performed 5,330 tests, representing a decrease of 180 tests or 3.3%, at a rate of 10 tests per device, which is the same rate since 2010.

Pressure

The laboratories received 18 instruments destined for the pressure measurement. They were used to conduct 144 tests, at a rate of 8 tests per device, which is the same previous rate.

Force

Nine instruments were delivered to the force measurement laboratories. They were used to perform 108 tests, at a rate of 12 tests per instrument.

Mass

The number of mass units reached 1,228 and they were used to conduct 11,532 tests, at a rate of 9.4 tests per unit.

Dimensions

The number of units increased to 187, and tests rose to 1,496 at a rate of 8 tests per unit.

Electricity

The number of tests on electrical equipment decreased to 38 devices in 2019, and to 304 tests at a rate of 8 tests per device.

Other tests

As for the other tests, their reached 304 and were performed on 38 instruments.

Total Activity	2019		2018		2017		2016		2015	
	Tests	Units	Tests	Units	Tests	Units	Tests	Units	Tests	Units
Temperature	533	5330	551	5510	515	5150	512	5120	426	4260
Pressure	18	144	70	560	96	768	87	696	68	544
Force	9	108	6	72	10	95	5	40	3	24
Mass	1228	11532	1170	10816	1298	11844	1062	9680	964	9024
Dimensions	187	1496	113	904	163	1304	115	920	52	416
Electricity	38	304	52	416	29	232	63	504	54	432
Other tests	38	304	36	288	37	296	43	344	47	376
Total	2051	19218	1998	18566	2148	19689	1887	17304	1614	15076

CUSTOMS FILES

CONFORMITY ASSESSMENTS OF IMPORTED GOODS DECLINE 16% INTERNAL TURMOIL AND AILING BANKING SECTOR HINDERED ANNUAL IMPORT GROWTH; DAILY ASSESSMENT RATE AT 142 FILES

Conformity assessments of goods imported to Lebanon, and subject to mandatory requirements provisions to be applied by the Industrial Research Institute, declined by 16% during 2019, compared to their level in 2018.

They reached 36,272 files, compared to 43,307 in the previous year, decreasing by 7,035 files due to Lebanon's turmoil since mid-October until the end of the year, compounded by the inability of Lebanese banks to open foreign currency credits needed to imports goods, which stalled the external trade.

The daily rate of conformity assessments reached 142 files.

The decline affected most of customs data by different types of imported merchandises and goods. The data were as follows:

- The data that were subject to prior conformity assessment in the country of origin, as part of IRI's mechanism, were 969 files.

Customs Files 2019

Files type	Pre-Shipment	Chemical	Electrical	Medical	Elevators	Mechanical	Energy	Paint	Pressure	Civil Engineering	Textile	Transport	Common files	Total
Number	969	6686	9523	6139	159	864	127	2.221	176	2593	2701	1343	2771	36272
Files subject to	969	4985	5766	5341	89	324	87	614	79	2525	2252	1101	1998	26130
Files not subject to	0	1.701	3.757	798	70	540	40	1.607	97	68	449	242	773	10142
Percentage of files not subject to	0.00	25.44	39.45	13.00	44.03	62.50	31.50	72.35	55.11	2.62	16.62	18.02	27.90	27.96%
Non-conforming files	0	10	602	10	0	0	13	20	3	156	20	0	0	834
Percentage of non-conforming files	0.00	0.20	10.44	0.19	0.00	0.00	14.94	3.26	3.80	6.18	0.89	0.00	0.00	3.19%
Rectified files	0	2	589	3	0	0	13	13	3	156	20	0	0	799
Rejected files	0	8	13	7	0	0	0	7	0	0	0	0	0	35

- The number of files subject to conformity reached 26,130, while those that were not subject to mandatory specifications provisions were 10,142 files.
- The number of non-conforming files was 834; 799 files were rectified and 35 were rejected.

Files distribution by imported merchandises were listed in order of importance as follows:

Electrical Appliances

They are still accounting for the biggest share, with 26% of the total customs files. They reached 9,523 files, declining from 11,838 files in 2018, by around 20%.

Chemical Products

The number of chemical files decreased from 7,939 in 2018 to 6,686 in 2019, by 1,253 files or 15.7%. They represented 18.5% of the total files.

Medical Devices

The medical devices represented around 17% of the total files. Their number dropped from 6,314 in 2018 to 6,139, down by 175 files or 2.7%.

Textile Files

Customs files pertaining to textile imports were 2,701, down from 3,146 by 445 files or 14%. They represented 7.5% of the total customs files.

Building Materials

The number of building materials files declined from 3,572 to 2,593, by 979 files or 27.4%. Their share represented 7.15% of the total files.

Paint and Petroleum Derivatives

Their files reached 2,221 accounting for 6.12% of the total. They were 2,579 before dropping by 358 files or around 14%.

Common Files

The number of common files reached 2,771 compared to 3,440 in the previous year. They decreased by 669 files or by around 20%. They accounted for 7.6% of the total customs files.

The remaining data pertained to 1,343 files of car tires (3.7%), 969 files approved in the countries of origin (2.7%), 864 mechanical files (2.4%), 176 pressure devices files, 159 elevators files and 127 energy customs files.

BORDER CROSSINGS TRAFFIC

67% AT THE PORT OF BEIRUT AND 30% AT BEIRUT AIRPORT

Border crossings traffic remained almost unchanged, maintaining its previous rates despite a slight, but insufficient, improvement through Lebanese borders with Syria, compared to the high traffic witnessed during the first decade of the twenty-first century. The number of customs files at the Masnaa Border Crossing jumped from 62 in 2018 to 607 during 2019, representing a tenfold hike.

The main border crossings were:

Port of Beirut

The number of files examined at the Port of Beirut dropped from 30,401 to 24,439 by 5,962 files or 20%. They accounted for 67.4% of the total number of files.

Beirut Airport

The number of files that were subject to a conformity assessment at Beirut Airport reached 10,693 compared to 12,130 files in the previous year. They fell by 1,437 files, or by around 12%. These files accounted for 29.5% of the total number of files.

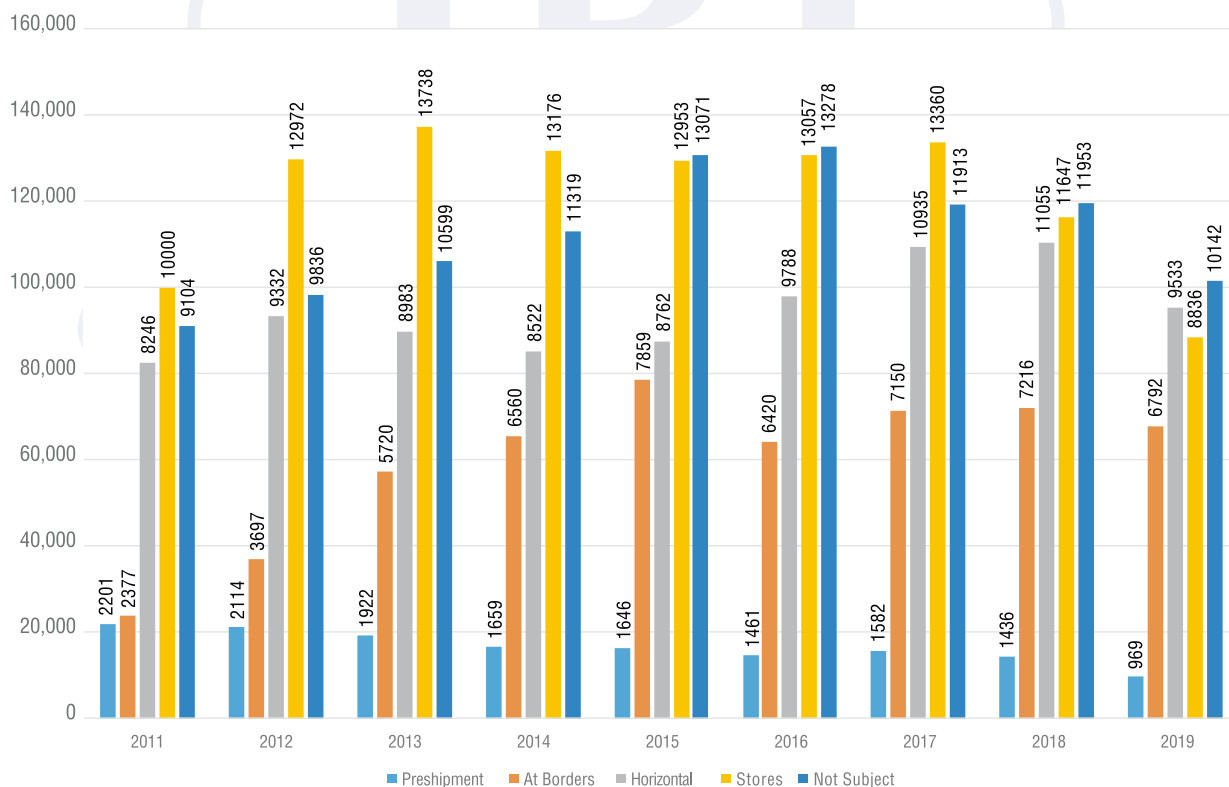
Port of Tripoli

At Tripoli's port, the number of customs files subject to conformity declined from 681 to 511, dropping by 170 files or 25%.

Through the remaining border crossings, the number of customs files that were reviewed and assessed amounted to 16 in Aboudiyeh, 3 in the Port of Saida and 3 at the Arida border crossing.

Merchandises by border crossings

Files type	Pre-Shipment	Chemical	Electrical	Medical	Elevators	Mechanical	Energy	Paint	Pressure	Civil Engineering	Textile	Transport	Common files	Total
Masnaa	0	147	23	18	0	5	2	58	1	1	327	0	25	607
Port of Beirut	969	4.365	6.359	1.577	140	772	113	2.022	144	2.543	2.117	1.211	2.107	24.439
Arida	0	0	0	0	0	0	0	0	0	0	3	0	0	3
Saida	0	0	1	0	0	1	0	0	0	0	0	0	1	3
Tripoli	0	86	144	7	2	7	4	24	7	18	92	51	69	511
Aboudiyeh	0	0	0	0	0	0	0	0	0	0	16	0	0	16
Airport	0	2088	2996	4537	17	78	8	117	24	31	146	81	570	10.693
Total	969	6686	9523	6139	159	863	127	2221	176	2593	2701	1343	2772	36272



CERTIFICATES OF QUALITY

The Industrial Research Institute continued its efforts aiming at strengthening and promoting the Lebanese industry. Until the end of 2019, IRI awarded 36 quality certificates as follows: the ISO 9001 standard to 24 industrial institutions, the Environment Management System ISO 14001 to five institutions, the Food Safety System ISO 22000 to one institution and the Medical Devices Quality Management Systems ISO 13485 to four institutions. One institution was awarded the OHSAS 18001 that aims at developing a set of specifications for occupational health and safety management systems, while another institution received the HACCP Certificate.

Product Accreditation Certificates

Since 2014, the Industrial Research Institute granted the Certificate of Quality to 53 products from 16 different productive institutions.

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 238 welding certificates through the Lebanese Welding Center (CLS), one certificate of nondestructive testing inspector and 24 certificates of trainees in nondestructive testing.

NEW EQUIPMENT METROLOGY LABORATORY'S NEW EQUIPMENT

1- Portable Furnace

The Hart Scientific 9150 thermocouple furnace can be used for calibrating thermocouples and RTD temperature probes. It operates over a wide temperature range of 150 °C to 1200 °C.



2- Resistance Standard

The Fluke 742A Resistance Standard is a high-accuracy working standard for precision, on-site resistance calibration.





**INTERNATIONAL
ACCREDITATION**

INTERNATIONALLY RECOGNIZED FROM THE WORLD'S MOST RIGOROUS ACCREDITATION BODIES 1000 DOCUMENTS, 30 INDICATORS, 47 AUDITORS AND 500 MAN-DAYS OF AUDIT

Quality management overview

The quality management section personnel, assisted by 47 trained auditors, keep and maintain a sound quality management system in accordance with ISO 17025 (testing and calibration) & ISO 17020 (inspection) requirements.

With 1000 controlled documents, 30 Key Performance Indicators continuously monitored and 500 man-days of audits and assessments performed, the competence of IRI was recognized from the most rigorous accreditation bodies in the world successively DAKKS and ANAB.

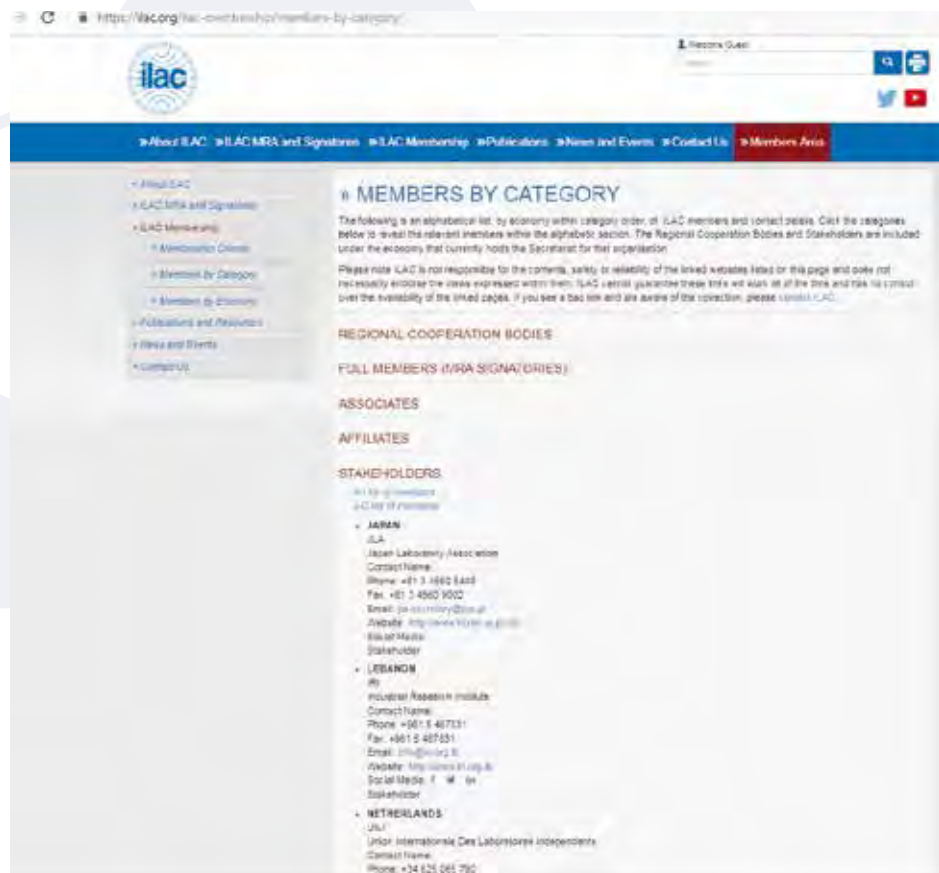
ANAB is a full member in the international organizations IAF and ILAC and a signatory of mutual recognition agreements. This makes the institute's reports and results trustable and recognized in the world.

Besides 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 success ratio of 97%.

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

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



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

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

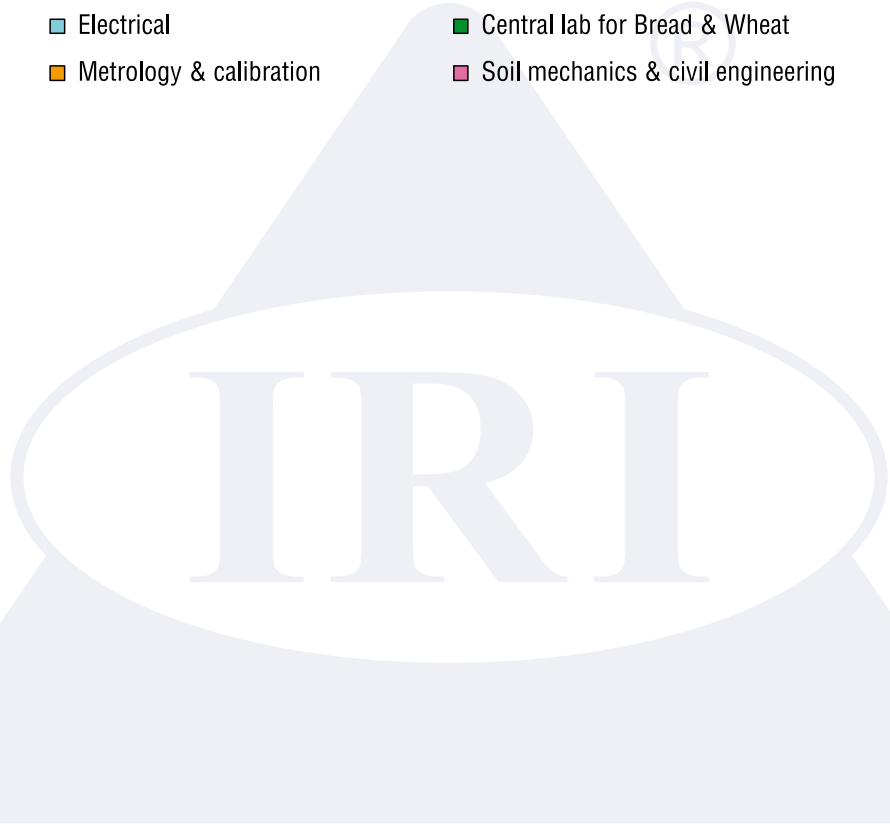
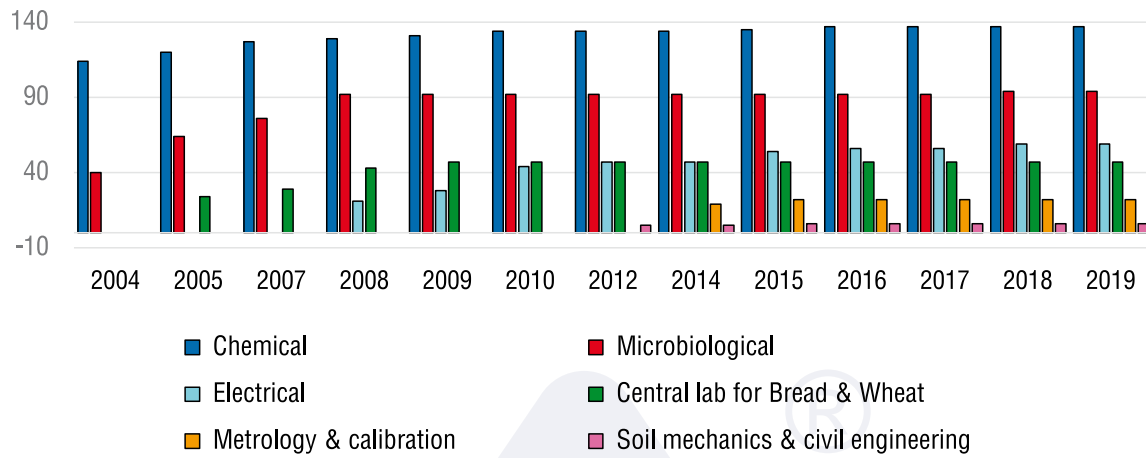
It covers the following:

Items, Materials OR Products Inspected	Type and Range of Inspection	Methods and Procedures
Boilers Ceramic Tile Cosmetic Diapers Electrical Appliances Fire Extinguishers Food Gas Cylinders Glass Medical Items Notebook Oil Sanitary Wares Solar Water Heaters	Qualitative and /or Quantitative Inspection of New Products	Internal Procedures: PR/CFM/03 IT/CFM/04 IMP/CFM-e/01 to 04 IMP/CFM-h/01 to 32 IMP/CFM-n/01 to 03 IMP/CFM-r/01 to 07 IMP/CFM-s/03 & 02 Customer-Provided Inspection Requirements

The scope of accreditation according to ISO 17025 requirements covers over 370 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.

Distribution of test methods by laboratory per year





CERTIFICATE OF ACCREDITATION

ANSI National Accreditation Board

11617 Coldwater Road, Fort Wayne, IN 46845 USA

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 17020:2012

while demonstrating technical competence in the field of

INSPECTION

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

AI-2499

Certificate Number



ANAB Approval

Certificate Valid Through: 08/29/2021
Version No. 003 Issued: 08/06/2019



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).



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while demonstrating technical competence in the field of

TESTING

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

ACT-1898
Certificate Number

Certificate Valid Through: 08/29/2020
Version No. 005 Issued: 09/09/2019



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



**INTERNAL
& EXTERNAL ACTIVITIES**

SALIM KFOURY REPRESENTS THE INDUSTRIAL RESEARCH INSTITUTE IN THE 19TH MEETING OF THE COORDINATING COMMITTEE FOR THE ARAB INDUSTRIAL RESEARCH CENTERS

As every year, the Industrial Research Institute's Administrative Director Salim Kfoury represented IRI in the 19th meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries. The meeting was held in the Jordanian capital Amman on 31 July 2019.

Report and Recommendations of the nineteenth meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries (Amman – Hashemite Kingdom of Jordan – 31/07/2019)

At the invitation of the Arab Industrial Development and Mining Organization (AIDMO), and hosted by the ESCWA Technology Center (ETC), the nineteenth meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries was held in the Jordanian capital Amman on Wednesday 31/07/2019, with the participation of the Committee's members and experts from the Arab world (Jordan, Tunisia, Sultanate of Oman, Iraq, Palestine, Kuwait, Lebanon, Libya, Egypt and Mauritania), as well as the ESCWA Technology Center – (participants list in Annex 1).

It coincided with ETC's Technical Committee meeting and the expert group meeting on "Green Technology Transfer, Adaptation and Investment Required for Implementing the Goal 12 of UN's 2030 Agenda for Sustainable Development Goals.

The 19th 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), Dr. Ayad Jalloul, Interim Director of Research and Development Department. He welcomed the participants in the meeting, conveying the greetings of Eng. Adel Al-Saquer, AIDMO's Director General, and his concerns regarding the outcomes of AIDMO's Advisory Committee. The organization's representative outlined the Committee's objectives and mission, warmly thanking ETC's Executive Director Reem Nejdawi, and all her assistants, for hosting the meeting and

for the efforts made by the ESCWA Technology Center for its success. He gave an overview of the Coordinating Committee for the Arab Industrial Research Centers, its missions and objectives. He also summarized the R&D outcomes achieved by the Committee between the 18th and 19th meetings of the Coordinating Committee.

ESCWA Technology Center’s National Officer Nael Al Mulki welcomed the participants in the meeting from the Arab countries, wishing them a pleasant stay in their second country Jordan. In his address, he stressed the importance of the Committee and of its coordinating role between the Arab countries in R&D fields. He also emphasized ETC’s commitment to permanently cooperate with this Committee and to share its expertise in order to develop its performance.

After the meeting, Dr. Hala El Kady, Head of Engineering Research Division at the National Research Center (NRC) was elected as Chairperson of the 19th meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries. Dr. Ayad Jalloul, AIDMO’s Interim Director of Research and Development, was elected as the meeting rapporteur. Dr. Hala El Kady welcomed the members of the Coordinating Committee for the



Industrial Research Centers in Arab countries, participating in this event. She stressed the importance of the Committee and praised its role in linking academia with industry, as well as the collaboration and coordination between the Arab Industrial Research Centers, and the technological research and development in the Arab countries.

The Drafting Committee consisted of:

- Dr. Maysoun Ibrahim / Higher Council for Innovation & Excellence / Palestine.
- Eng. Mohamed Al Khalidi / Ministry of Industry, Trade and Supply / Jordan.
- Dr. Oussama Dowidar / Technology Transfer Office - National Research Center / Egypt.

At the beginning of the meeting, the following agenda was adopted:

First	The Organization’s report on the implementation of recommendations of the 18th meeting of the Coordinating Committee for the Industrial Research Centers in Arab countries
Second	Reports of the Committee members on the implementation of the previous meeting
Third	National reports

Fourth	Discussion about the activation of the Coordinating Committee's Web portal www.aidmo.org/accirc
Fifth	How to enhance the Committee's work in the coming period
Sixth	Further unscheduled work

The participants in the 19th meeting of the Coordinating Committee for the Arab Industrial Research Centers discussed the agenda items and agreed on these recommendations:

Recommendations

1. To call on the Industrial Research Centers in Arab countries to find the adequate mechanisms for enhancing cooperation between them, in order to cope with the technological challenges in light of the Fourth Industrial Revolution and the Artificial Intelligence.
2. Task the Committee members with the preparation of lists including the name of industrial authorities and investors for each country. They should submit the lists to AIDMO in order to post them on the Web portal of the Coordinating Committee for the Industrial Research Centers in Arab countries www.aidmo.org/accirc, to make them accessible to beneficiaries.
3. Support the Arab working group created by AIDMO to link academia with industry by exchanging the databases and information of the group and Web portal of the Coordinating Committee for the Industrial Research Centers in Arab countries.
4. AIDMO should periodically send communications to the focal points of the Coordinating Committee in the Arab countries, permanently mentioning the Committee's Web portal.
5. Call upon the focal points of the Coordinating Committee for the Arab Industrial Research Centers to submit to AIDMO electronic versions of industrial development legislations, decisions and strategies, to post them on the Committee's Web portal in order to make them accessible by investors and stakeholders.
6. Call upon the Industrial Research Centers in Arab countries to submit to AIDMO the research outputs of their industrial applications to post them on the Committee's Web portal. The strategic and investment projects will also be made accessible to stakeholders and investors on the Committee's Web portal.
7. Use the Videoconferencing technology to hold the Committee's meetings in order to periodically assess and follow up on its works.
8. Call upon the ESCWA and AIDMO to organize a workshop on the legislations stimulating the investment in the field of scientific research and industrial technology. The Committee members will then submit to AIDMO their documentation about these workshops.
9. Benefit from the international experiences in the technological renaissance.
10. Emphasize the cooperation with the ESCWA and the international organizations related to the Committee's areas of work in order to optimize the use of activities and the exchange of experiences.
11. Express appreciation and gratitude to the Arab Industrial Development and Mining Organization

(AIDMO) for its preparation, the good organization of this meeting and the efforts it made in following up on its work.

12. Thank the ESCWA Technology Center (ETC) for hosting this meeting and for its contribution in providing the necessary assistance for its success.

Meeting Chairperson

Dr. Hala El Kady

Head of Engineering Research

Division

National Research Center (NRC)

Meeting Rapporteur

Dr. Ayad Jalloul

Interim Director of

Research and Development

Arab Industrial Development

and Mining Organization (AIDMO)

List of Participants

- 1- Eng. Mohamed Al Khalidi – Ministry of Industry, Trade and Supply – Hashemite Kingdom of Jordan
- 2- Eng. Abir Ramadna – Ministry of Industry, Trade and Supply – Hashemite Kingdom of Jordan
- 3- Nour Eddine Al Qaizani – Agency for the Promotion of Industry and Innovation – Ministry of Industry – Republic of Tunisia
- 4- Sarah Al Jarjis – Ministry of Higher Education and Scientific Research – Republic of Iraq
- 5- Dr. Rahma Al-Mahrooqi – Sultan Qaboos University (SQU) – Sultanate of Oman
- 6- Dr. Maysoun Ibrahim – Higher Council for Innovation & Excellence – Palestine
- 7- Dr. Futuh Al-Ragom – Kuwait Institute for Scientific Research – State of Kuwait
- 8- Salim Kfoury – Industrial Research Institute – Republic of Lebanon
- 9- Dr. Al Hussein Hassan Oraibi – Industrial Research Center – State of Libya
- 10- Dr. Youssef Lakbida – Ministry of Industry, Commerce, Investment and Digital Economy – Kingdom of Morocco
- 11- Dr. Hala El Kady – National Research Center (NRC) – Republic of Egypt
- 12- Dr. Oussama Dowidar – National Research Center – Republic of Egypt
- 13- Dr. Ahmed Al Hajj – Ministry of Higher Education and Scientific Research – Islamic Republic of Mauritania
- 14- Eng. Nael Al Mulki – ESCWA Technology Center (ETC)
- 15- Dr. Ayad Jalloul – Arab Industrial Development and Mining Organization (AIDMO)

IRI'S TECHNOLOGY AND DEVELOPMENT DIRECTOR DR. IMAD HAGE CHEHADE PARTICIPATED IN ENVIRONMENTAL, PROFESSIONAL, METROLOGICAL AND GREEN ACTIVITIES INSIDE AND OUTSIDE LEBANON, REPRESENTING THE INDUSTRIAL RESEARCH INSTITUTE OR ITS DIRECTOR GENERAL DR. BASSAM FRENN, IN LEBANON, KSA AND FRANCE

Activities by Dr. Chehade

1- World Day for Safety and Health at Work – Sibline

A presentation on international standards and a shield of recognition

As part of the World Day for Safety and Health at Work activities, on 28 April 2019, IRI's Technology and Development Director Dr. Imad Hage Chehade participated in launching the Safety Week that is organized by the cement company Sibline. In his address during this event, he

talked about the partnership between the Industrial Research Institute and the Lebanese industrial institutions for decades. The cement producer Sibline was the first company that received IRI's certificate,



as part of the Product Certification program. Dr. Chehade detailed the international standards related to the risk assessment methods and how to use them. He also listed the risks involved in the cement industry and the means of prevention.

He also received from Sibline's CEO, Talaat El Lahham, a shield of recognition for the Industrial Research Institute's efforts in supporting the enterprise.

2- PTB's second meeting of Regional Cooperation Project and a workshop on NMIs' role

Amid the ongoing cooperation in the field of metrology between the Industrial Research Institute and its local and international partners, IRI held two activities. It hosted the second meeting of the Regional Cooperation Project Committee directed by the German Federal Institute of metrology Physikalisch-Technische Bundesanstalt (PTB), including Lebanon, Egypt, Palestine and Jordan.



The meeting issued some directions and means of assistance, which helped introducing new activities in the Institute, such as the tanks calibration using cutting-edge technologies.



The second activity consisted of a workshop on the role of the National Metrology Institutes (NMIs). The participants discussed NMIs' duties and responsibilities towards the measurement system in each country, its relation with international organizations and how to connect the national metrological tools with the international system. The experts participating in this workshop stressed the importance of the Industrial Research Institute in this area. IRI has been playing this role for decades, driven by its national responsibility, being also the only institution in Lebanon with the ability to perform these duties and missions.

3- IRI participates in an official economic delegation to KSA to discuss the conformity assessment mechanisms

As part of the cooperation development and the trade facilitation with Saudi Arabia, an official economic delegation from Lebanese public institutions visited the Kingdom and held meetings with counterparts on 10 and 11 March 2019. IRI's Technology and Development Director Dr. Imad Hage Chehade represented the Institute and held meetings with representatives of ministries and authorities in charge of the conformity assessment mechanisms' implementation. The different





mechanisms adopted in the two countries were studied for this purpose. They also discussed the means of facilitating them for the benefit of both parties.

4- “Cities to Be” Conference: Green Building Certificates

By invitation of the French CERWAY organization, that certifies green buildings in accordance with the requirements and regulations of the French High Environmental Quality (HQE) certification – knowing that a cooperation agreement is signed between CERWAY and the Industrial Research Institute in this area – IRI’s Technology and Development Director Dr. Imad Hage Chehade represented the Institute’s Director General, Dr. Bassam Frenn, in the “Cities to Be” conference. The event took place in the French city of Angers on 12 and 13 September 2019. This participation was a good opportunity to meet institutions engaged in this activity in countries such as Brazil, China, Morocco and others.

The working processes adopted in each country were compared and relevant experiences were exchanged. Dr. Imad Chehade delivered a lecture on the green building certification mechanisms in Lebanon, based on the Convention Center model project that is planned in Jbeil in accordance with the HQE (Haute Qualité Environnementale) specifications. It will be the first project receiving the green building certifications issued by the Industrial Research Institute, the CEDRE evaluation system and HQE.



PROFESSOR JOSEPH MATTA CARRIES OUT DIFFERENT ACTIVITIES REPRESENTING THE INDUSTRIAL RESEARCH INSTITUTE IN ENVIRONMENTAL, HEALTH, INDUSTRIAL, INNOVATION AND TECHNOLOGY AND FOOD SAFETY

10th edition of USJ's Days of Scientific Research: Pollution, environment, health and research

The Vice-Rectorate for Scientific Research at the Saint-Joseph University of Beirut (USJ), organized on the 9th of May 2019, the 10th Edition of the Days of Scientific Research, under the patronage and in the presence of the Minister of Environment Fadi Jreissati at USJ's Campus of Medical Sciences.

These Days of Research brought together, around the themes of pollution, environment, health and research, experts from the USJ, Industrial Research Institute, AUB, Lebanese University, Lebanon's National Council for Scientific Research (CNRS)

and international experts. Professor Joseph Matta, who was representing IRI, had the opportunity to present and compare, with the different specialists, the results of researches in terms of environmental pollution and its effects, which are always harmful, on the environment and health.

The researchers also presented their latest findings, starting from the new diagnosis methods and cancer treatments, heart diseases, allergies, to the microbiota, which are related to the bacteria found in the human body. These microbiota could be partly responsible for neurological and digestive disorders. The researchers also highlighted some scientific findings in terms of renewable energies, fermentations, plants extracts and waste management.



Beirut Environmental Conference - 2019

Professor Joseph MATTA, representing the Industrial Research Institute, participated in Beirut Environmental Conference – 2019, organized by the Ministry of Environment under the patronage of President of the Republic, on May 2019. The conference dealt with the main environmental axes: integrated solid waste management, air quality and climate change, environmental governance, and others.

During the conference, Lebanon's commitment to the sustainable development goals of 2030 was announced and a national committee was established to follow up the implementation of the objectives.



Steering committee meetings of UNIDO and ministry of industry technical cooperation projects

Professor Joseph MATTA, representing IRI and its Director General Dr Bassam FRENN, participated in the Steering committee meetings of UNIDO and ministry of industry technical cooperation projects held at the Lebanese ministry of industry on May 2019.

The proposed projects aim at the assistance to Lebanon in establishing modern industrial zones.



Lebanese food nutritional composition

The Industrial Research Institute conducted applied research and testing on the Lebanese food nutritional composition in collaboration with the Lebanese University, Faculty of Public Health and the WHO Lebanon. The project aims to estimate the overall nutritional quality of traditional Lebanese dishes, which may help to identify those dishes whose consumption should be encouraged to promote healthy eating in Lebanon.



Developing a model of comprehensive approach in medical nutrition therapy for adults weight loss management in Lebanon. Doctoral thesis, Faculty of Organization Studies (FOS), Slovenia

Professor Joseph Matta directed the doctoral thesis jury of Ms. Marie Therese Khalil to obtain the Doctoral degree at the Faculty of Organization Studies (FOS) in Novo Mesto, Slovenia on July 2019. The thesis entitled “Developing a model of comprehensive approach in medical nutrition therapy for adults weight loss management in Lebanon”.

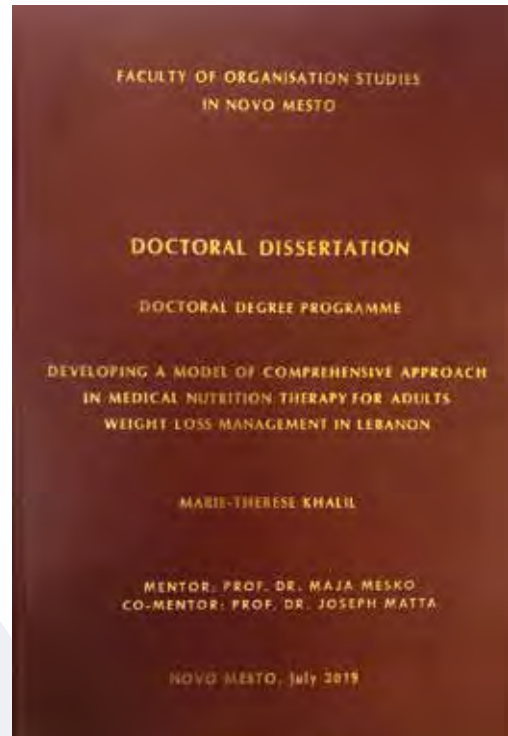
It focuses on Mediterranean diet in Lebanon, overweight problems, diet failure, lifestyle and quality management system. The results are obtained from a quantitative scientific research method, using seven hypotheses and modeled structural equations.

Variables affecting weight loss management were identified with the aid of the seven hypotheses using structural equation modelling; body shape and BMI were found inter-related with:

- Cognitive behaviors toward food, such as self-monitoring of food and calorie intake and selected lower calorie food
- Lifestyle practices such as BIS, indoor and outdoor physical activities.
- Medical conditions, such as bloating, constipation, mood swings, digestive problems, fatigue, lower back pain, oedema and migraine/headache.
- Food and beverages types.

The study indicates the importance of elements to consider when assessing patients weight loss, taking into consideration the external factors that influence the therapy.

This research work is the first at the national level and provide significant insights to Lebanese nutritionists and dietitians, enabling them to increase their quality of service at multiple levels in the field of weight loss therapy, in order to reduce health costs through preventive methods. Our 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 health improvement in Lebanon.



Joint USJ/AUB Research Healthcare Innovation and Technology

The Industrial Research Institute, represented by Professor Joseph MATTA, participated in the “USJ/AUB Healthcare Innovation and Technology Program”, organized by the Lebanon’s two oldest universities AUB and USJ at Campus of Innovation and Sports, USJ on December 2019.

The program provides funding for applied research projects in the multi-disciplinary field of healthcare technology innovation. This aims at contributing to technological advancement and economic growth in Lebanon.



25th Annual Science and Technology Fair

The Industrial Research Institute, represented by Professor Joseph MATTA, participated in the applied research and awareness campaign in the Education Students Society 2018-2019. This activity gathered scientists and students to discuss problems and solutions related to technology.

The students Ms Angela Zeidan, Ms Julie Karam and Ms Mia Madi,

supervised by Professor Joseph MATTA won the first prize of Science for the applied research project intitulated “Water purification at home” at the 25th Annual Science and Technology Fair that took place at Science and Mathematics Education Center, AUB on April 2019.



Fluoride in Salt

Representing the Director General Dr. Bassam Frenn, Professor Joseph Matta participated in the meetings of the Public Health Parliamentary Committee on table salt.

Researchers found that the fluoride content in table salt could affect the human health, and particularly the nervous system.

Consequently, it was decided to prevent the addition of fluoride to table salt, during a session held by the Parliamentary Committee of Public Health, Work and Social Affairs on 08/10/2019, headed by MP Issam Araji, and in the presence of MPs Salim Khoury, Fouad Makhzoumi, Ali Al Mekdad, Amin Cherri, Fadi Alameh, Mohammad Al Qeraawi, Inaya Ezeddine, Mario Aoun and Bilal Abdallah.



Environmental Scientific Research

Professor Joseph Matta was awarded grants for environmental scientific innovative research projects developed with Saint-Joseph University (USJ) as part of scientific collaborations. They concretize the strategic vision of IRI regarding the valorization of innovation and the transfer of technology, to support industry and innovation.

The projects focused on the nuisances that are threatening us every day, particularly the pollution, among other things,



which is a global phenomenon affecting the air, soil, water, food and citizens. Our research teams addressed these problem and the consequences seem very serious.

Among the pollutants being studied, there are the “Persistent Organic Pollutants” (POPs), some of which represent a chronic hazard such as the polychlorinated biphenyls (PCBs) that were once used in dielectric oils, building paints and coatings, and were also caused by uncontrolled incinerations of synthetic materials, as well as the organochlorine pesticides, which were forbidden but are still illegally used leaving their residues in the environment and making their way to the dairy products, fish, meat and even the fruits and vegetables.

It is important to note that exposure to these Persistent Organic Pollutants (POPs) in the general population is 90% from food intake. Dietary patterns provide a global estimation of exposure to POPs, taking into account multiple food sources of environmental contaminants.

The most serious problem is that we also find them in human blood and breast milk due to the exposure of the population. But fortunately, the rates found so far by the researchers in our team remain below the limits related to diseases resulting from these substances, such as diabetes, neurological illnesses, certain types of cancer, etc.

Reference:

Patterns of PCBs and OCPs exposure in a sample of Lebanese adults: The role of diet and physical activity

Environmental Research; Volume 179, Part B, December 2019, 108789

Mireille Harmouche-Karaki, Yara Mahfouz, Pascale Salameh, **Joseph Matta**, Khalil Helou, Jean-François Narbonne

Health Scientific Research

Professor Joseph MATTA developed health scientific innovative research projects developed with Bellevue Medical Center in a view of strategic vision of IRI regarding the innovation and the health support valorization.

The aim of the study was to describe femoral neck geometry among eumenorrhic underweight women around the age of peak bone mass. Proximal femur geometry and body composition were assessed

in underweight women and in healthy controls using dual-energy X-ray absorptiometry. The Hip Structural Analysis program was used to determine bone geometry at the femoral neck. The cross-sectional area (CSA) and the cross-sectional moment of inertia (CSMI) were significantly lower in underweight women than in controls. There was a trend toward lower sectional modulus (Z) and strength index in underweight women. The present study suggests that thinness is associated with low resistance to axial forces (CSA) and bending load (Z and CSMI) in adult eumenorrhic women. Lean Mass seems to be a key determinant of femoral neck geometry in underweight women.

Reference:

Bone Geometric Properties of the Femoral Neck in Underweight Eumenorrhic Women

Journal of Clinical Densitometry, Volume 22, Issue 2, April–June 2019, Pages 272-278

Nathalie AlRassy, Joseph Matta, Fabienne Frenn, Ghassan Maalouf, Maroun Rizkallah, Falah Bachour, Amer Sebaaly, Pierre Hardouin, Christophe Chauveau, Rawad El Hage¹



Food Safety Scientific Research

Professor Joseph MATTA developed food safety scientific innovative research projects developed with Lebanese University and USJ in a view of strategic vision of IRI regarding the innovation and the consumers health and protection support valorization.

For the very first time, the study investigates the simultaneous migration of several metals and bisphenol compounds from coated



tinplate cans into vegetable foods highly consumed worldwide. The role played by heat treatment, food type and brand, storage conditions, can denting and cooking food directly in cans is also assessed. Migration of bisphenol compounds was mainly affected by sterilization, whereas metal release was greatly influenced by storage. Based on a Principal Component Analysis different migration pattern groups were highlighted: BPA and Zn (and Pb to a lesser extent) showed similar migration trends, with dependence on food type, brand and storage temperature. Cd, Ni and Cu were similarly influenced by food type and can brand. Iron has a particular trend, with clear influence of storage time, and to a lesser extent of food type.

Reference:

Simultaneous migration of bisphenol compounds and trace metals in canned vegetable food

Food Chemistry, Volume 288, 1 August 2019, Pages 228-238

Sara Noureddine El Moussawi, Rosette Ouaini, Joseph Matta, Hanna Chébib, Mathieu Cladière, Valérie Camel

Visits by delegations of university students

Delegations from Lebanese universities 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.



HE CHAIRED THE TECHNICAL COMMITTEE TO DISCUSS PROBLEMS FACED BY R&D OPERATIONS

The Head of the Central Laboratory for Grains, Flour and Bread Research / the Technical Director of the International Association for Cereal Science and Technology - Austria, delivers a lecture in Vienna on how “Science meets Technology”

The international community is actively discussing the subject of test method validation and uncertainty on all fronts, and SDOs (Standards developing organizations) should monitor these discussions to remain abreast of the most recent developments, and their impact on accreditation requirements.

Reliable analytical results are essential to protect the health of consumers and to facilitate international trade. The ultimate goal in fair practice in

international trade depended, among other things, on the reliability of analytical results, as well as the importance of harmonization of validation criteria and validation protocols.

The suitability/ applicability/ reliability/ consistency/ ruggedness of an analytical method can be assured in an organization where there are defined quality control and quality assurance procedures in place. This process of method testing is termed a collaborative study or ring trials and is governed by rules and regulations.

Within this context, the Head of the Central Laboratory for Grains, Flour and Bread Research/ the Technical Director of the International Association for Cereal Science and Technology- Austria, Engineer Amine Jbeily was invited as a guest speaker representing IRI to ICC 19th Conference on “Science meets Technology” in Vienna-Austria, to present the recent developments of standard methods related to food safety and quality, emphasizing on the crucial role, these methods will play in the future as a tool to tackle the problems emerging from issues such as intensified farming, adulteration, food security and global warming.

During his participation on the 24th and 25th of April, Eng. Jbeily Chaired the Technical Committee meeting to discuss the latest issues in Research and Development, and briefed the members on the latest ICC released methods.



FOR THE EIGHTH CONSECUTIVE YEAR, THE LEBANESE WELDING CENTER ORGANIZES A TRAINING SESSION FOR STUDENTS OF THE ENGINEERING FACULTY AT THE LEBANESE UNIVERSITY

For the 8th consecutive year, the Lebanese Welding Center at IRI organized training sessions in the field of welding and Non-Destructive Testing, for the students of the Faculty of Engineering at the Lebanese University. The sessions were held from 22/07/2019 to 09/08/2019, as an implementation of an agreement set between IRI and the Faculty of Engineering at the Lebanese University.

The sessions were done with the participation of 24 students from the three branches of the Faculty of Engineering. Those majored in mechanical, civil and petrochemical engineering. The sessions were supervised by the Lebanese Welding Center training staff. The students received two weeks of training, during which they theoretically learned the various welding processes, then applied them manually using the manual metal arc welding process in the first week. During the second week, students took part in extensive and detailed lectures and got acquainted to Non-Destructive Testing and performed various tests in different NDT methods on weldments, including visual, liquid penetrant, magnetic particles, ultrasonic and finally x-ray testing, after which, students were able to apply the various testing methods on several welded materials to detect and locate defects.

TRAINING ON THE CALIBRATION OF VERTICAL CYLINDRICAL TANKS IN GERMANY

The Industrial Research Institute represented by the Head of Metrology Laboratory Eng. Elias Maalouf and the Unit Head Mr. Edgar Shaaya participated in a training on the calibration of vertical cylindrical tanks in Germany from 14th to 18th of October 2019

This training has been organized by the German Federal Institute of metrology Physikalish - 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:

- Legal basis and practice of verification of large Petroleum tanks
- Principle of volumetric measurements
- Functionality of LEICA MS60 multi-station
- Measurement of the inner surface of tanks
- Extraction of data using infinity software
- Tank modeling using solid works software
- Evaluation of the total volume
- Preparation of calibration table

DR. FADY Y. MELHEM – JURY MEMBER OF THE “11TH ANNUAL CONFERENCE FOR ENGINEERING AND ARCHITECTURE GRADUATES IN NORTH LEBANON - ACEAG’19”

The Order of Engineers and Architects – Tripoli, has organized the 11th Annual Conference for Engineering and Architecture Graduates in North Lebanon - ACEAG’19 that took place on Saturday 27, July in OEA Tripoli Lebanon.

The conference gathered highly distinguished experts from Lebanon and abroad and especially benefits the community of engineers, researchers, and students in the different fields of engineering.

Due to his successful professional career in the electrical and



renewable energy fields, Dr. Fady Y. MELHEM, Electrical Laboratory Unit Head at IRI, was invited to attend the conference and serve as jury member for the electrical engineering track.

DR. FADY Y. MELHEM – MEMBER OF THE “18 FUTURE ENERGY LEADERS OF LEBANON”

The World Energy Council (WEC) in Lebanon has organized the “Future Energy Leaders of Lebanon (FELL-18)” program designed to inspire, grow and develop Lebanon’s energy leaders of tomorrow.



It offers young professionals a unique opportunity for learning and development with exposure to critical issues in the energy debate. Only 18 participants in the FELL-18 program have been selected from all energy sectors in Lebanon.

As professional, academic and researcher, Dr. Fady Y. MELHEM, Electrical Laboratory Unit Head at IRI, was selected as one of the 18 Future Energy Leaders of Lebanon due to his knowledge in the electrical and renewable energy fields and expertise in energy management.

The Future Energy Leaders of Lebanon visited HE Minister of Energy and Water Mrs. Nada Boustany Khoury, to present their views and latest projects to improve the energy sector in Lebanon.

The Future Energy Leaders were introduced during the FELL-18 session at the International Beirut Energy Forum (IBEF2019). It was an inspiring session where FELLs also presented their work during this year.





**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

- Puriplast Liban s.a.l.
- Sanitary Paper co. (Mimosa)
- Joseph B. Amatoury s.a.r.l.
- Ahmad M.S. Al-Dirani
- Cimenterie Nationale s.a.l.
- Unipack Tissue Mill s.a.l.
- Nicolas Srouji Establishment
- Majid Al Futtaim Hypermarkets Lebanon
- Solicar s.a.l.
- Henkel Lebanon s.a.l.
- Liban Cables
- Hypco



**SCIENTIFIC
PUBLICATIONS**

Scientific research plays a crucial role in the progress and development of societies, resulting in better living conditions. During 2019, 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 Applied Research and Testing Acting Director, published scientific researches on health, food and environment issues.





Patterns of PCBs and OCPs exposure in a sample of Lebanese adults: The role of diet and physical activity

Mireille Harmouche-Karaki^{a,c}, Yara Mahfouz^a, Pascale Salameh^b, Joseph Matta^{a,c}, Khalil Helou^a, Jean-François Narbonne^d

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Dietary patterns
Physical activity

ABSTRACT

Background: Exposure to persistent organic pollutants (POPs) in the general population is 90% from food intake. Dietary patterns provide a global estimation of exposure to POPs, taking into account multiple food sources of environmental contaminants.

Objectives: To evaluate the association of dietary, socio-demographic, anthropometric, and lifestyle-related variables with clusters of polychlorinated biphenyls (PCBs) and organochlorine pesticides (OCPs), in a sample of students and employees of Saint Joseph University of Beirut.

Methods: A total of 302 participants were randomly recruited. Questionnaires covering dietary, socio-demographic, and lifestyle-related characteristics were administered. Anthropometric measurements were obtained. Serum concentrations of six indicator PCBs (PCB 28, 52, 101, 138, 153 and 180) and four OCPs, hexachlorobenzene (HCB), β -hexachlorocyclohexanes (β -HCH), p,p'-dichlorodiphenyltrichloroethane (DDT) and its metabolite p,p'-dichlorodiphenyldichloroethylene (DDE) were measured, and cluster analysis was applied. We evaluated the association of dietary intake with PCBs/OCPs exposure using two different approaches: food consumption categories and dietary patterns retrieved from principal component analysis (PCA).

Results: Three clusters of PCBs/OCPs were obtained: middle-level, high-level, and low-level. Practicing physical activity was associated with a three times higher risk of having high-level PCBs/OCPs, after adjustment for confounding variables (ORa = 2.97; CI = 1.23–7.19; p < 0.05). The highest tertile of fish and shellfish consumption increased by three-folds the odds of having high-level PCBs/OCPs (ORa = 3.41; CI = 1.07–10.84; p < 0.05). PCA revealed six dietary patterns. A “cereals, fats and oils, and eggs” dietary pattern was associated with 50% increase in the risk of having high-level PCBs/OCPs (ORa = 1.48; CI = 1.03–2.13; p < 0.05).

Conclusion: The present results offer a valuable contribution to the understanding of the factors increasing exposure to POPs, namely fish consumption and the “cereals, fats and oils, and eggs” dietary pattern. We also demonstrated that physical activity was positively associated with a higher risk of exposure to PCBs and OCPs, knowing that data on this matter are scarce.



Bone Geometric Properties of the Femoral Neck in Underweight Eumenorrheic Women

Nathalie Al Rassy^{1, 2}, Joseph Matta^{3, 4}, Fabienne Frenn³, Ghassan Maalouf³, Maroun Rizkallah⁵, Falah Bachour⁵, Amer Sebaaly⁵, Pierre Hardouin², Christophe Chauveau², Rawad El Hage^{1, 2, 3, 4}

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- ² Laboratory of Pathophysiology of Inflammatory Bone Diseases PMOI EA4490, University of Littoral Opal Coast ULCO, Boulogne sur Mer and University of Lille, Lille, France
- ³ Industrial Research Institute, Baabda, Lebanon
- ⁴ Department of Nutrition, Faculty of Pharmacy, Saint Joseph University, Mansourieh, Lebanon
- ⁵ Bellevue University Medical Center, Faculty of Medicine, Saint Joseph University, Mansourieh, Lebanon

Abstract

The aim of this study was to describe femoral neck (FN) geometry among eumenorrheic underweight women around the age of peak bone mass. Proximal femur geometry and body composition were assessed in 12 underweight women and in 24 healthy controls using dual-energy X-ray absorptiometry. The Hip Structural Analysis program was used to determine bone geometry at the FN. The cross-sectional area (CSA) and the cross-sectional moment of inertia (CSMI) were significantly lower in underweight women than in controls ($p < 0.05$). There was a trend toward lower sectional modulus (Z) and strength index in underweight women ($p < 0.15$). Body weight, body mass index, and lean mass (LM) were positively correlated with CSA, CSMI, Z , and neck-shaft angle ($r = 0.428$ – 0.611 , $p < 0.05$). After controlling for body weight, body mass index, and LM, the differences in CSA, CSMI, Z , and neck-shaft angle were no more statistically significant between the 2 groups. The multivariate analysis retained LM as the main predictor of CSA, CSMI, and Z in the whole population. The present study suggests that thinness is associated with low resistance to axial forces (CSA) and bending load (Z and CSMI) in adult eumenorrheic women. LM seems to be a key determinant of FN geometry in underweight women.



Simultaneous migration of bisphenol compounds and trace metals in canned vegetable food

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Abstract

For the very first time, this study investigates the simultaneous migration of several metals and bisphenol compounds from coated tinplate cans into vegetable foods highly consumed worldwide. The role played by heat treatment, food type and brand, storage conditions, can denting and cooking food directly in cans is also assessed. Migration of bisphenol compounds (only BPA and BADGE·2H₂O detected) was mainly affected by sterilization, whereas metal release was greatly influenced by storage. Based on a Principal Component Analysis different migration pattern groups were highlighted: BPA and Zn (and Pb to a lesser extent) showed similar migration trends, with dependence on food type, brand and storage temperature. Cd, Ni and Cu were similarly influenced by food type and can brand. Fe has a particular trend, with clear influence of storage time, and to a lesser extent of food type. Overall Fe and BADGE·2H₂O migration were favored in acidic food.



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Research Articles

Effects of selenium supplementation on lung oxidative stress after exposure to exhaust emissions from pyrolysis oil, biodiesel and diesel

Youssef B. Fawaz , Joseph M. Matta  & Mohamed E. Moustafa  

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Abstract

The exposure to exhaust emissions from fuels as diesel and pyrolysis oil may result in adverse effects on human lungs. This study investigated the effects of exposing mice to the exhaust emissions from diesel, biodiesel or pyrolysis oil, for 1 hour/day for 3 days, on lung oxidative stress and whether selenium administration into these mice affects the oxidative stress. The levels of lung malondialdehyde and nitric oxide were increased after exposure to pyrolysis oil exhaust. The intraperitoneal injection of 1.78 µg selenium/kg body weight 15 minutes before the exposure to the pyrolysis oil exhaust (pyrolysis oil + selenium group) restored the normal levels of malondialdehyde and nitric oxide. The catalase and SOD activities were decreased in the groups of the mice exposed to the exhaust emissions from pyrolysis oil, biodiesel or diesel. Selenium pretreatment of these groups showed no significant change in the activities of both enzymes. In conclusion, the increased lung levels of malondialdehyde and nitric oxide after the exposure to the exhaust emission from pyrolysis oil were restored to normal by selenium administration.

“To sustain future human population, more food will have to be produced over the next 50 years than the past 10,000 years combined”... Cereals and cereal products being the base of healthy nutrition, puts tremendous pressure and responsibilities on Organizations worldwide not only to produce more but also to improve on quality and safety.

The International Association for Cereal Science and Technology-ICC, the pre-eminent international association in the field of cereal and food science and technology, committed since its establishment to developing standard methods.

The Industrial Research Institute-IRI through its close collaboration with an internationally recognized key player such as ICC, and multi-national stake-holders, developed through the Central Laboratory for Grains, Flour and Bread research in 2019 three key standard testing methods that deal with “global” emerging issues concerning Nutrition, human gut health and Whole Cereals bio-active compounds.

These newly published testing methods will serve as tools to promote healthy ingredients and to protect “consumers” through the control of “Health claims”, “Adulteration”, “Authenticity” and “fraud risks” related to the food chain.

Eng. Amine Jbeily Head of the Central Laboratory and Technical Director of ICC since 2016, actively guided and contributed scientifically to the development and release of the standard methods:

1- ICC STANDARD 184:

Determination of the mixing quality of wheat flour dough by high-speed mixing using the dough lab.

This standard specifies a method for the determination of the mixing quality of wheat flour doughs using the Perten doughLAB. The method describes a procedure that mimics the high rate of addition of mechanical energy used in modern dough mixers integral in rapid-bake systems. The method is applicable to any flour, including, but not limited to, flours that are very strong or are difficult to develop.

INTERNATIONAL ASSOCIATION FOR CEREAL SCIENCE AND TECHNOLOGY



ICC STANDARD No. 184

Approved: 2019

1. Title

Determination of the mixing quality of wheat flour doughs by high-speed mixing using the doughLAB

2. Scope and field of application

This standard specifies a method for determination of the mixing quality of wheat flour doughs using the Perten doughLAB. The method describes a procedure that mimics the high rate of addition of mechanical energy used in modern dough mixers integral in rapid-bake systems. The method is applicable to wheat flour, including, but not limited to, flours that are very strong or are difficult to develop.

Note 1: The doughLAB ring trial was conducted using both mixers (50 and 300 g) however only four participants delivered results from the 50 g mixer which was statistically insufficient to deduce accurate precision data according to international requirements for method validation. This data is available in the study report (Dang and Bason, 2013).

3. References

3.1 ICC Standard No. 110/1, Determination of moisture content of cereals and cereal products (practical method).

2- ICC STANDARD 185:

Measurement of Total Dietary Fibre in Cereals, Ingredients and Food Products Using the Megazyme Rapid Integrated TDF Procedure (RIN-TDF).

This method describes a procedure for the determination of total dietary fiber in foods and food ingredients as defined by the Codex Alimentarius Commission. The method quantitates high molecular weight dietary fiber (HMWDF), which includes insoluble dietary fiber (IDF) and fiber which precipitates in the presence of 78% ethanol (SDFP); and fiber which is soluble in 78% ethanol (SDFS). Resistant starch (RS) is captured in the IDF fraction.

INTERNATIONAL ASSOCIATION FOR CEREAL SCIENCE AND TECHNOLOGY



ICC STANDARD No. 185

Approved: 2019

1. Title

Measurement of Total Dietary Fibre in Cereals, Ingredients and Food Products Using the Rapid Integrated TDF Procedure (RINTDF)

2. Scope and field of application

This method is an update of AOAC Method 2009.01 (also published as AACC Method 32-45.01) for the determination of total dietary fiber in foods and food ingredients as defined by the Codex Alimentarius Commission. Enzymatic digestion with pancreatic α -amylase (PAA) plus amyloglucosidase (AMG) at 37°C for 4 h is used to simulate human intestinal digestion. Higher molecular weight dietary fiber (HMWDF), including insoluble dietary fiber (IDF) and fiber which precipitates in the presence of 78% ethanol (SDFP) is measured gravimetrically. Resistant starch (RS) is captured in the IDF fraction. Dietary fiber that is soluble in 78% aqueous ethanol (SDFS) is recovered and measured by high-performance liquid chromatography (HPLC). Total dietary fiber is the sum of HMWDF (IDF plus SDFP) and SDFS. The method measures the complete range of dietary fiber components from RS to digestion-resistant oligosaccharides (SDFS). Reducing the incubation with PAA plus AMG from 16 h to 4 h makes the

3- ICC STANDARD 186:

Determination of the Solvent Retention Capacity (SRC) of wheat flour using the CHOPIN-SRC.

The SRC method was developed for its beneficial application in determining a flour's functionality for biscuit manufacturing, cracker manufacturing, and sugar-snap and wire-cut cookie laboratory tests.

INTERNATIONAL ASSOCIATION FOR CEREAL SCIENCE AND TECHNOLOGY



ICC DRAFT STANDARD No. 186

Approved: 2019

1. Title

Determination of the Solvent Retention Capacity (SRC) of wheat flour using the CHOPIN-SRC

2. Scope and field of application

This method is applicable to flour obtained from wheat *Triticum aestivum* from a laboratory or an industrial milling operation.

The SRC method was originally developed in the USA and is well known to be particularly adapted to soft wheat flour. There is much evidence for its beneficial application in determining a flour's functionality for biscuit manufacturing, cracker manufacturing, and sugar-snap and wire-cut cookie laboratory tests.

The CHOPIN-SRC method has been proposed and demonstrated to not replace any existing methods, but to add information and help better explain some observed dough rheological or baking behaviors).

Over time, the SRC method has been successfully used to evaluate not only soft wheat flours, but also hard winter wheat flours and hard red spring wheat flours).



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



ELCIM and CIT actively participate in meetings, exhibitions, training workshops and agreements with universities, enhancing their scientific, research and innovation role

The Euro-Lebanese Centre for Industrial Modernization (ELCIM) and the Center for Innovation and Technology (CIT) stepped up their activities during 2019, whether through participating in specialized exhibitions, organizing training workshops and meetings or their partnership with national universities in targeted scientific activities. They also enhanced innovation and offered financial rewards to achievers, not to mention the scientific and legal activities of Lebanon SoftShore Cluster (LSS). These activities are listed below.

TRAININGS 2019

- **Artificial Intelligence by Ms. Nadine Hajj:(January 31)**



- **Photovoltaic “How to reduce your electricity bill by 50%” by Mr. Talal Salem and Elias Kinab: (February 27)**



- **Design Thinking by Ms. Loubna Ibrahim at Beirut Digital District (March 28)**

- **Design Thinking by Ms. Loubna Ibrahim at The Lebanese University, Hadat, (May 10)**



- **Sitting Ducks by Mr. Samir Zehil (July 2)**



- **Basics of Lean Manufacturing by Mr. Dany Elias (September 26)**



- **Data Science by Mr. Teddy Elias (December 10) at the Industrial Research Institute.**

BUSINESS SUPPORT AND COLLABORATION ACTIVITIES (ELCIM)

- Several meetings held with NDU regarding a Packaging study in order to assess the current status and increase compliance with local and international standards providing tailor made technical assistance to the field.
- Memorandum of Understanding signed between the Industrial Research Institute/ ELCIM and the Lebanese American University



- Memorandum of Understanding signed between the Industrial Research Institute/ELCIM and USEK.



- Visiting several companies enlightening them about our In-House and Public program trainings.

LEBANON SOFTSHORE CLUSTER

Meeting with the Parliamentary ICT Committee 24/01/2019

The LSS cluster had the opportunity to meet with the parliamentary ICT committee, headed by Mr Nadim Gemayel, on Thursday, January 24th to discuss the challenges faced by the Lebanese Software industry in the presence of Dr Salim



Khoury and Mr Mohammad Hajjar. Ideas were exchanged and discussed in details regarding the organization and structuring of the ICT sector.

Meeting with Lebanese Economic Attaches 01/03/2019

On the 1st of March 2019, the Lebanon SoftShore Cluster organized a meeting at the Beirut Digital District between the LSS members and Lebanese Economic Attaches in order to devise strategies to help SMEs in their export efforts to Ivory Coast, Nigeria, South Africa, the UAE and KSA.



Design thinking workshop 28/03/2019

On March 28, LSS/ELCIM organized a successful seminar on Design Thinking for Digital Transformation with Loubna Ibrahim. In this highly interactive session, participants solved a time management challenge for the Industrial Research Institute using the design thinking process through hands on exercises.

Design thinking Workshop for university students 03/05/2019

Within the Academic Forum's activities, a design thinking workshop was organized in collaboration with the Lebanese University in Hadat for the students of the universities' members. This event aimed to give the students a hands-on training in order to prepare them for the real business world.

Initiation of the ICT Law preparation July 2019

For a better organization of the Lebanese software sector, the LSS Cluster initiated the preparation of an ICT law. With the assistance of a specialized attorney, the law aims to define Lebanese companies working in the software sector and grant them tax incentives in order to strengthen their competitiveness.

Participation and organization of Lebanon National booth in GITEX 2019

Within its aim to support the Lebanese software sector, the LSS Cluster participated in the 2019 GITEX Edition of the MENA's largest technology event on the 10th of October 2010.

The "Lebanon SME's pavilion" booth gathered leading local software companies. This mission was co-financed by the Industrial Research Institute with the collaboration of IDAL.

EU PROJECTS

Within the framework of the ENI CBC MED programme, The CIT and ELCIM collaborated in the preparation of 7 EU projects amounting to a total budget of around 30 Million Euros. More than 50 partners from leading south MED and Northern MED institutions, universities and private enterprises were part of these consortiums.



Launch of the ENI CBC MED project MAIA TAQA in ATHENS.

On the 2nd and 3rd of October, the partners of the EU-funded ENI CBC MED «MAIA-TAQA» project met in Athens for the kick-off meeting which was followed by a press conference at the premises of CRES (Center for Renewable Energy Sources).

The project «Mobilizing new Areas of Investments And Together Aiming to increase Quality of life for All» (MAIA-TAQA) gathers 8 partners from 6 countries, namely Greece, Italy, Lebanon, Jordan, Egypt and Spain, and aims at promoting innovative resource efficiency services in the Mediterranean SMEs through the enhancement of their technical and management capacities. IRI through ELCIM and the CIT is an active partner in this project.

The total budget is □3.1 million out of which □2.8 million as EU contribution.

EUROPE AID projects

ELCIM and the CIT collaborated as full partner in the proposal writing and elaboration of the following Europe Aid projects:

GET Up! Achieving Green Energy Transition in Lebanon enabling entrepreneurs to shape new solutions to common needs, under LOT 1 “Promoting innovation and entrepreneurship in support to Lebanon’s clean energy transition” Budget : 2,2 Million Euros (Partners: Agencia de Residus de Catalunya – Sustainable Consumption and Production Regional Activity Centre; IRI; Berytech; Viridis fund; Eurac; AUB

Technical Assistance facility for the Lebanese private sector.

Grant contract, budget 2,2 Million. (Partners : Congenia; Foundation CARTIF; IRI; NOISE)

• **Research Day-Agro Food | Scientific Platform - June 19, 2019**

In an effort to bridge the gap between Industry and Research, and within our work of the Scientific Platform, an initiative by IRI/ELCIM organized the Industry Research Day - AgroFood on Wednesday, June 19. During this half-day session, leading Lebanese Researchers presented on examples of AgroFood researches.

From NDU, Dr. Layal Karam presented “Marination, a new treatment for chicken meat preservation” and Dr. Christelle Bou-Mitri presented “Nutrition and health claims status on Lebanese pre-packed bread in Mount Lebanon”. From USEK, Dr. Marc Bou Zeidan presented “The development of indigenous sourdoughs with potential applications in the baking industries” and Dr. Emilio Mouannes presented “Insights on cider production from locally grown apple crops in Lebanon”. Then from Balamand University, Ms. Maria El Deghel presented “Microbiological quality of refrigerated chicken meat in contact with cellulose acetate-based film incorporated with nutmeg essential oil”. Finally, from USJ, Dr. Mireille Kallassy Awad presented “The importance of micro-organisms in the industrial world”.

During the second part of the session, researchers and industrials took part in a round table to discuss the needs of the industrials and researchers and how to better serve both of their interests. One of the concerns raised is the cost-benefit of doing research. While the industrials are mainly concerned



with profit, the researchers are more inclined to focus on innovation. In general, the three main issues identified are a lack of communication (i.e. understanding what the other party’s objectives and constraints are), a lack of trust (i.e. issues of confidentiality and sharing of information), and perceived low level of innovation (i.e. research centres are not at the forefront of new ideas).

Industrials tend to come to the researchers when they have a big and urgent problem they want to solve and they sometimes don’t understand that research takes time and money. So how do we find synergies

between the researchers and the industrials when they speak different languages? Indeed, industrials require a timetable and a budget when it comes to research. But so do researchers? Industrialists are mostly market-oriented rather than idea-oriented as researchers are. As for researchers, their time is not 100% devoted to research as they often have other priorities such as teaching, mentoring and administrative tasks. They also rely on students who can sometimes be unreliable.

Though we have witnessed gaps between industrialists and academia, they are not insurmountable. The Scientific Platform was created to bridge the gap between industrials and researchers, to moderate the conversation and ease the communication between the two. The scientific platform will provide options for industrials to help them find researchers and direct them in the right direction. Today's objective was to showcase research to industrials to start a conversation and begin to raise awareness. The next step will be to invite industrials to present their problems so that researchers can help them find solutions as well tackle the issues of IP and confidentiality.

• **Research Day-Agro Food: Bakery and Flour Mills - July 23, 2019**

In an effort to bridge the gap between Industry and Research, and within our work of the Scientific Platform, an initiative by IRI/ELCIM organized the Industry Research Day - AgroFood: Bakery and Flour Mills on Tuesday, July 23. During this half-day session, leading Lebanese Researchers presented on examples of AgroFood researches.

From NDU, Dr Christelle Bou-Mitri presented “Functional foods, packaging, labelling and claims: consumer insights and status”. From Balamand University, Dr Claudine Accary presented “Nutritional attributes, shelf life and sensory evaluation of soft bread with sun-dried tomato, quinoa and dried basil”.



During the second part of the session, researchers and industrials took part in a round table to discuss the needs of the industrials and researchers and how to better serve both of their interests. One of the questions raised had to do with new product creation: is it the market needs or the consumer

demands that dictate the development of new products? It turned out that bakers are often requesting for specific recipes and state to flour mills their intended use of flours. Bakers follow international market trends while keeping in mind cost constraints to remain competitively priced and affordable for the market. We then tried to understand how bakers decide between flour mills and noted that the differences come from the quality of the wheat, the prices, the manufacturing process, the testing quality and the collaboration with bakeries to give them the quality they demand at the prices they want. One of the main problems for flour mills lies in the stability of the product: the wheat is not always the same quality at the different stages of the production process and during the different seasons of the year. Bakeries give flour mills standards to follow and flour mills try to reach them but it's not always easy to reach those targets because the stability of the product varies. Some issues that bakeries face include the quality of the flour and the consistency of the product. They mainly compete by having proprietary recipes and trade secrets.

Though we have witnessed gaps between industrialists and academia, they are not insurmountable. The Scientific Platform was created to bridge the gap between industrials and researchers, to moderate the conversation and ease the communication between the two. The Scientific Platform will provide options for industrials to help them find researchers and direct them in the right direction. Today's objective was to showcase research to industrials to start a conversation and begin to raise awareness. The next step will be to invite industrials from other sectors to present their problems so that researchers can help them find solutions as well as tackle the issues of IP and confidentiality.

• **Research Day Intellectual Property - October 9, 2019**

In an effort to bridge the gap between Industry and Research, and within our work of the Scientific Platform, an initiative by IRI/ELCIM, we organized the Industry Research Day - Intellectual Property on Wednesday, October 9. During this half-day session, leading firm Al Yafi IP Group presented on the topic of Intellectual Property.

The world of Intellectual Property is still a mystery to most of us, so we started the session with an introduction to Intellectual Property presented by Tima Hachem and Rimi Kbar from Al Yafi IP group. This firm was established in 1975 and has been providing IP services since 1987. They started by defining IP as any creation of the human mind. Then they went into the details of the different types of IP, mainly patents, trademarks, industrial designs and copyrights.

During the second part of the session, they explained the process of commercialization which is the act of taking research from the lab to the market. They presented the benefits of commercialization and the long road that leads to it. In order to better illustrate the concepts presented, the participants were then divided into three groups and presented with three case studies. During the next thirty minutes, participants studied the case study and prepared a presentation to showcase the product being discussed and make a pitch for potential investment.

Though we have witnessed gaps between industrialists and academia, they are not insurmountable. The Scientific Platform was created to bridge the gap between industrials and researchers, to moderate the conversation and ease the communication between the two. The Scientific Platform will



provide options for industrials to help them find researchers and direct them in the right direction. Today's objective was to showcase research to industrials to start a conversation and begin to raise awareness. The next step will be to invite industrials from other sectors to present their problems so that researchers can help them find solutions.

IRI



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

The Industrial Research Institute has proven once again, through its Directorate of the Lebanese Cleaner Production Center, its leading strategy to assist the industrialists to improve their environmental performance and generate saving of \$5.9M to beneficiaries.

The Lebanese Cleaner Production Center (LCPC) generated savings amounting to 5.9 million dollars to industrial SMEs by adopting its programs and applications, promoting a cleaner environment. In 2019, LCPC actively participated in several international conferences.

Lebanese Cleaner Production Center (LCPC)

- Established in 2002 at the Ministry of Environment (MOE) by the United Nations Industrial Development Organization (UNIDO)
- LCPC moved in February 2004 to the Institute of Industrial Research (IRI) in Hadath - Baabda.
- LCPC is part of the UNIDO-UNEP global network of national cleaner production centers (NCPCs) in 73 countries.
- Its work is to improve the environmental performance of products, processes and services by focusing on the causes of environmental problems through encouraging economic development and industrial growth by saving costs and facilitating the access of local products to international markets.
- It seeks to assist national industries, especially SME's, in the Adoption of sustainable production and the application of cleaner production and the transfer of environmentally
- The Center supports industrial enterprises in enhancing their productivity and facilitating their access to new and more demanding markets, while improving their environmental and social performance at the same time.

LCPC ACTIVITIES IN 2019

- Conference on Economics in the Region, World Science Forum 2019 “SCIENCE, ETHICS AND RESPONSIBILITY“ at Budapest, Hungary



- 5th International Conference on Global Warming, Environmental Compliance at Ras al Khaimah, United Arab Emirates



- Media comprised Environmental Axis at Erbil, Iraq



- Conference on Investing in a resilient and inclusive future organized by the European Investment Bank



- The 24th International trade exhibition for construction materials and equipment for Lebanon and the middle east sound technologies.



Media

- Brochures
- Newsletters (21)
- Annual Reports (17)
- Manual Guide (6)
- Factsheets (47)
- CD Rom
- Text book on RECP: “Half is enough: An Introduction to Cleaner Production

Media

- Events (324)
- Participants (3790)
- SMEs (47)
- Experts (92)
- Sectors (9)
- Savings (\$5,9 million)



**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.
 - 1- Expressing an opinion about the draft food safety law.
 - 2- 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 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:

- A) 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 .
- B) 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.
- C) Oversight of the local market. This function is tasked to the Consumer Protection Directorate at the Ministry of Economy and Commerce.

- D) 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.





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 AND ELCIM PARTICIPATE IN LEBANON'S "HORECA FAIR 2019"

The Industrial Research Institute (IRI) and the Euro-Lebanese Centre for Industrial Modernization (ELCIM) participated in Horeca 2019, one of the major annual fairs bringing together experts from the hospitality and food sector services in Lebanon and the region. This event was held at the Seaside Arena in Beirut from April 2 to April 5, 2019.

During the exhibition, ELCIM organized short presentations on food sector topics for the food industry workers and professionals. It also held meeting with technical experts in various areas.



TENTH INTERNATIONAL BEIRUT ENERGY FORUM (IBEF)

Once again, the Industrial Research Institute (IRI) played a role in raising awareness on renewables and energy efficiency, by participating for the 10th consecutive year in the International Beirut Energy Forum (IBEF) activities, which was organized by the Lebanese Center for Energy Conservation (LCEC) in Le Royal Hotel in Dbayeh, from September 25 to September 29, 2019.

The Institute participated through different activities and lectures. In its stand, it provided many energy services and activities. It also held several meetings with Lebanese and foreign specialists and stakeholders, discussing with them possibilities of integrated cooperation.





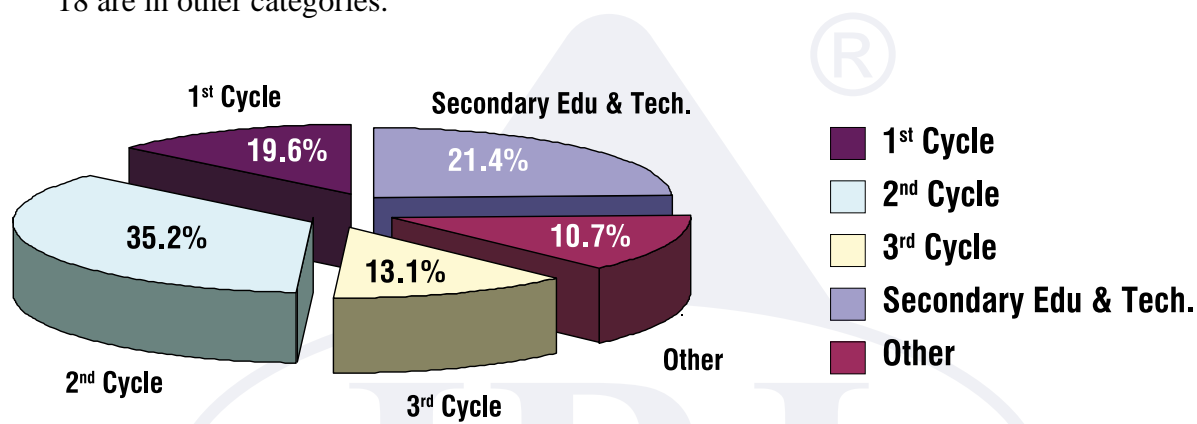
DEVELOPMENT OF HUMAN RESOURCES

DEVELOPMENT OF HUMAN RESOURCES

The number of IRI staff members amounted to 168 at the end of 2019; 68% are males, while 32% are females. The average age is around 39 years.

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

- 22 hold a 3rd Cycle
- 59 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	22	13.1
2nd Cycle	59	35.2
1st Cycle	33	19.6
Secondary Education & Tech	36	21.4
Other*	18	10.7

Average Age	Gender	
39 Years	68% Male	32% Female

(*) other excluded

Average Age	Gender	
39 Years	65% Male	35% Female



**ON-GOING
EMPLOYEE TRAINING**

International training, seminars & workshops

Participant	Organizer	Object/Title	Date	Location
Edgar Shaaya Joseph El Helou	PTB Physikalisch - Technische Bundesanstalt	Evaluation of data in National Metrology Institutes	27-31/01/2019	Cairo, Egypt
Mohamad Hajjar	RCREE & SHAMCI	الاجتماع السابع لشبكة المشروع العربي لشهادات الأنظمة الشمسية الحرارية شمسي	20-21/03/2019	Cairo, Egypt
Amine Jbeily	ICC	19th ICC Conference "Science meets Technology"	23-25/04/2019	Vienna, Austria
Richard Skaff Mohamad Assaad Hajjar	Economic & commercial counselor's office of the embassy of the People's Republic of China in the Lebanese Republic	Industrial Innovation and Creation for Lebanon	14/07-03/08/2019	Beijing, China
Elias Maalouf Edgar Shaaya	PTB Physikalisch - Technische Bundesanstalt	Training on calibration of large liquid tanks	14-18/10/2019	Braunschweig and Hamburg, Germany
Selim Kfoury	AIDMO	الاجتماع الـ ١٩ للجنة التنسيق لمراكز البحوث الصناعية في الدول العربية	09/08/2019	Amman, Jordan
Antoine Fayçal	ACIDIM (Association des Cadres de l'Industrie européenne des Dispositifs Médicaux) / SNITEM (Syndicat National de l'Industrie des Technologies Médicales)	Journée ACIDIM avec le TUV SUD / Les 7èmes rencontres du progrès médical	09-11/09/2019	Paris, France
Imad Hage Chehadeh	Alliances HQE - Cities to Be	La démarche HQE, ça marche même dans les climats chauds	12/09/2019	France

MISSIONS (Trainers, Experts & Speakers)

Participant	Organizer	Object/Title	Date	Location
Imad Hage Chehadeh	Sibline Cement	Opening Session of Sibline Safety Week	24/04/2019	Sibline Plant, Sibline
Joseph Matta	USJ - Vice rectorat à la recherche	Les journées de la recherche - Pollution Environnement Santé	09-10/05/2019	USJ, Campus des sciences médicales

Local Training, Seminars & Workshops

Participant	Organizer	Object/Title	Date	Location
Thomas Sabbagh	OMSAR	Basics of Project Management	09/01/2019	Online
Ahmad Hassan	Ministry of energy & water Franhauer ISE LCEC	Capacity building on Solar Process Heat Assessment, Design and Specifications	21-25/01/2019	Gefinor Rotana - Hamra, Beirut
Selim Kfoury Joseph Matta	Ministry of Industry	5th meeting of the EU-Lebanon joint working group to facilitate trade and investment	31/01/2019	Ministry of Foreign Affairs, Beirut
Amine Jbeily	وزارة الزراعة اللبنانية	تعزيز امكانيات وزارة الزراعة اللبنانية في مجال الخدمات البيطرية وسلامة الغذاء	04/02/2019	Lancaster Plaza Hotel, Beirut
Thomas Sabbagh	OMSAR	Management 3.0	06/02/2019	Online
Bilal Houssein Fady Melhem	IRI - ELCIM - CIT	Photovoltaic: How to reduce your electricity bill by 50%	27/02/2019	Padova Hotel, Beirut
Thomas Sabbagh	معهد باسل فليحان المالي والاقتصادي	تجارب رائدة في تحديث الشراء العام	04/03/2019	معهد باسل فليحان المالي والاقتصادي
Mohamad Hajjar	LCEC & Ministry of Energy and Water & IRENA	Renewable Energy Outlook for Lebanon Multi-Stakeholder Workshop	05-06/03/2019	Movenpick Hotel, Beirut
Mohamad Asaad Hajjar	LCEC	Training for Optimal Installation of Heat Pump Systems and Monitoring Devices	19-20/03/2019	Radisson Blue Martinez, Beirut
Hanane El Hayek Fady Melhem Ahmad Hassan	ALMEE (Association Libanaise pour La Maitrise de l'Energie et pour l'Environnement)	Atelier indicateurs d'efficacité énergétique	20-22/03/2019	Monroe Hotel, Beirut
Abbas Jaber	ELCIM	Design Thinking for Digital Transformation	28/03/2019	Beirut District Digital
Thomas Sabbagh	OMSAR	بناء وادارة الفريق	04/04/2019	Online
Dany Frenn	AUB	The Lebanese Food Industry and Universities - A Love-Hate Relationship	11/04/2019	AUB
Joseph Matta Naji Abi Zeid	The Ministry of Environment	Beirut Environment Conference 2019	03/05/2019	Hilton Habtoor Hotel, Sin El Fil
Carine Slaiby	معهد باسل فليحان المالي والاقتصادي	لقاء مع منسقي الادارات والمؤسسات العامة حول «الاجراءات الادارية المتعلقة بنشاطات معهد باسل فليحان المالي والاقتصادي»	03/05/2019	معهد باسل فليحان المالي والاقتصادي
Mohamad Asaad Hajjar Hanady El Khally	LIBNOR	دورة تدريبية تنظمها المؤسسة حول المواصفة القياسية الدولية ISO/IEC 17025: 2017	07-08/05/2019	LIBNOR
Mohamad Hajjar	LCEC & Ministry of Energy and Water & IRENA	IRENA validation workshop	08-09/05/2019	Beirut

Participant	Organizer	Object/Title	Date	Location
Bilal Houssein	MOE (National Ozone Unit) & UNDP	National cooling plan (NCP) for domestic refrigeration and residential Air-conditioning	27/05/2019	MOE, Downtown, Beirut
Hachem El Ali	Encogroup	Keempi Open Day for welding	18/06/2019	Chekka
Dany Frenn	IRI - ELCIM & CIT	Research Day - Scientific platform	19/06/2019	Rotana Gefinor
Hanane El Hayek	ALMEE (Association Libanaise pour La Maitrise de l'Energie et pour l'Environment)	Les Labels de Bâtiments Durables et GRASSMed	20/06/2019	Monroe Hotel, Beirut
Mahmoud Amhaz	LIBNOR	Supply Chain Management	25-26/06/2019	LIBNOR
Marianne Chucuri	UNIDO	Training session on Honey Quality	27/06/2019	Sin El Fil, Beirut
Naji Abi Zeid Sandra Sarkis	The Technology for Development Division / ESCWA & AIDMO	Artificial Intelligence and Local Industrial Development	01-02/07/2019	ESCWA, Beirut
Mahmoud Amhaz	IRI - ELCIM	Sitting Ducks Negotiation program	01/07/2019	Padova Hotel, Beirut
Ziad Moukarzel	معهد باسل فليحان المالي والاقتصادي	عقود الأشغال وصيانتها	01-04/07/2019	معهد باسل فليحان المالي والاقتصادي
Imad Kahil	ClinAcademy & The Lebanese University & the Lebanese Society of Cardiology	The path towards excellence in Clinical Research Achievements	12/07/2019	The Lebanese Order of Physicians, Beirut
Elie Melky	NDU	Marilyn Abdessater - Abstract Thesis Proposal	26/08/2019	NDU
Eliane Sawma Awad	LIBNOR	Fundamentals of Value Chain Management	28-29/08/2019	LIBNOR
Marianne Chucuri	المبادرة العربية لسلامة الاغذية وتسهيل التجارة (SAFE)	الممارسات المثلى في مجال تطوير وادارة انظمة الرقابة على سلامة الغذاء - تقييم المخاطر كأساس لأخذ القرار	29/08/2019	بيروت
Stephanie Asmar	معهد باسل فليحان المالي والاقتصادي	اعداد المدرسين والمدربات	03-06/09/2019	معهد باسل فليحان المالي والاقتصادي
Mohamad Asaad Hajjar	وزارة البيئة وبرنامج الامم المتحدة الانمائي	افتتاح مركز التدريب المهني المتخصص بالتبريد والتكييف	16/09/2019	مدرسة الصنائع والفنون - المديرية العامة للتعليم المهني والتقني - الدكوانة
Amine Jbeily	غرفة التجارة الدولية فرع لبنان - مقر اللجنة الزراعية الدولية	اجتماع للجنة الزراعية	17/09/2019	غرفة التجارة والصناعة والزراعة في بيروت وجبل لبنان - الصنائع
Hanady El Khally	IRI - ELCIM	The basics of Lean Manufacturing	26/09/2019	Hotel Rotana Gefinor, Beirut

Participant	Organizer	Object/Title	Date	Location
Rabih Issa	LIBNOR	Business Strategy	26-27/09/2019	LIBNOR
Richard Skaff	معهد باسل فليحان المالي والاقتصادي	اعداد وتحليل التقارير الاقتصادية	30/09-04/10/2019	معهد باسل فليحان المالي والاقتصادي
Selim Kfoury	The embassy of Italy in Lebanon and UNIDO	Lebanon Agro-Food conference 2019	02/10/2019	The Grand Serail, Beirut
Amine Jbeily	وزارة الزراعة ومنظمة الأغذية والزراعة التابعة للأمم المتحدة ومجموعة البنك الدولي (FAO) (WBG)	تحول الزراعة في لبنان: التحديات والفرص	04/10/2019	السراي الكبير، بيروت
Siham Youssef	IRI - ELCIM	Intellectual property seminar - how to protect your research	09/10/2019	Hotel Rotana Gefinor, Beirut
Hanna Francis	Ministry of Industry	لقاء تحضيرى لورشة عمل لانشاء منصة صناعية الكترونية	19/12/2019	Smallville Hotel, Beirut

Local Meetings, Inaugurations & Exhibitions

Participant	Organizer	Object/Title	Date	Location
Naji Abi Zeid Ramzi Bhamdouni Richard Skaff Sandra Sarkis Maya El Khatib Manale Tabanji	Hospitality Services	HORECA 2018	02-05/04/2019	Biel, Beirut
Siham Youssef	Swiss Business Council - Lebanon	Swiss Technology and Innovation	17/06/2019	ESA Business School, Beirut
Imad Hage Chehadé Siham Youssef Tarek Hakim Bilal Houssein Hanane Hayek Ahmad Hassan Fadi Melhem Mohamad Asaad Hajjar Mohamad Hajjar Jean Dib Hachem Ali Aline Jreijiry Dany Tahchy Elias Bechara	LCEC & WEC	International Beirut Energy Forum 2019	25-27/09/2019	Le Royal Hotel, Dbayeh

LIBNOR

Participant	TC Number	Standard Title	Date
Elie Melky Khaled Ghoul	NL TC 3017 Alcoholic Beverages "Beer"	NL 41 : 2003	16/05/2016 04/01/2019
Khaled Ghoul	NL TC 127 Earth Moving Machinery	ISO6011 - ISO14401-1-2 - ISO10570 - ISO10567	16/01/2019
Haitham Chawa	TC 83 Sports and other recreational facility and equipment	EN13451-7 + EN957-7 + EN16051 - 1/2 + EN14960 + EN1176-11 + EN13782 + ENISO20957 - ISO20712-3 + ISO20957-1/8/9/10 + ISO25649-1/2	10/05/2018 29/01/2019
Rana Matar	TC 2153 Machinery intended for use with foodstuff and feed	EN13390+A1 - EN13378+A1 - EN1674 - NLEN13288 - NLEN12853 - EN13732 - EN15467 - EN15180 - NLEN13871	18/10/2018 13/02/2019
Dany Frenn	NL TC 2252 Child Care Articles	EN13209 Part 1: 2004 - EN13209 Part 2: 2015 - EN12586: 2007 + A1: 2011 - EN1888 part1: 2018 - EN1888 part2: 2018 - NLEN12790: 2005 - EN17022: 2018 - EN17072: 2018 etc.	31/07/2019 19/02/2019
Khaled Ghoul Haitham Chawa	TC127 Earth Moving Machinery	ISO6011 - ISO14401-1-2 - ISO10567 - ISO10263-1/2/3/4/5/6	16/01/2019 19/02/2019
Dany Frenn Hachem El Ali	TC44 Welding	ISO3834 Part 1-2-3-4: 2005 - ISO3834 Part 5: 2015	20/02/2019
Haitham Chawa	NL TC 2207 Furniture	EN716 Part 1-2: 2017 - EN13759: 2012 - EN12521: 2015	30/01/2019 27/02/2019
Ahmad Hassan	NL TC 3018 HVAC	NLEN145II Part 1-2-3-4: 2008 - NLEN1397: 2003 - NLEN1048 - NLEN13487 - NLEN1202-1 - NLEN12599 - NLEN12792 - NLEN378-1/2/3/4 - NLEN1331 - NLEN 1377-1/2	13/09/2018 21/03/2019
Dany Tahchy	TC 157 Non-systemic contraceptives and STI barrier prophylactics	ISO 29943 Part 1-2	05/04/2019
Halim El Bayeh	NL TC 1017 - NL 607 - NL 460	المحضرات الغذائية: للرضع ذوي الاحتياجات الخاصة	05/09/2018 10/04/2019
Lama Abou Rjeily	NL TC 54 Essential oils	ISO 17382 - ISO 17412 - ISO 18054 - ISO 19332 - 21093 - 21389 - 21390 - 22769 - 22972 - 23954 - 25157 - 8900 - 8901 - 8902	10/11/2017 10/05/2019
Mark Tahchy	NL TC 182 Geotechnics	ISO 17892-1/2/3/12	09/04/2019 14/06/2019
Dany Tahchy	NL TC 178 lifts escalators and moving walls	CEN TR 81-12 - NL EN 81-20	18/06/2019
Dany Tahchy	NL TC 96 Tower Cranes	ISO 8686-1 / ISO 8686-2 / ISO 8686-3 / ISO 20332	20/06/2019
Mark Tahchy	NL TC 138 Plastic pipes	ISO 580:2005 - EN ISO 1167-1&2:2006 - ISO 13259 - ISO 13259 - ISO 13257 - ISO 13229 - ISO 18373 - EN 61386-1 - EN ISO 1167-3&4:2007 - ISO 13255 - ISO 7686 - ISO 9969 - ISO 1167-1/2/3/4 - ISO 580 - ISO 13254 - ISO 6259-1/2 - ISO 9852	02/11/2018 21/06/2019
Ahmad Habli	NL TC 22: السير والمركبات	ISO 3833 - ISO 1585 - ISO 2534 - ISO 6469/1/2/3/4 - NL 798-1	28/06/2018 10/07/2019
Tarek Hakim	TC 44: Welding and Allied processes	ISO 14114 - ISO 15615 - ISO/TR 20172 - ISO/TR 20173 - ISO/TR 3/834/6 - ISO 5175-1/2 - ISO 9539 + Amd1 - ISO 3821 - ISO 12170 - ISO 8207 - ISO 14113 - ISO 5172 + Amd 1/2 - ISO 9012 - ISO 9090	10/04/2019 17/07/2019
Rana Matar	TC 2153 Machinery intended for use with foodstuffs and feed	EN 15165 - EN 13379 - EN 13289 + A1 - EN 16743 - EN 15774 - EN 14990 - EN 14957 - EN 13389 - EN 12854	18/03/2019 19/07/2019

Participant	TC Number	Standard Title	Date
Danielle Gemayel	Cream (القمشة) NL TC 34/SC5	NL 461: 2001	01/08/2017 26/07/2019
Dany Tahchy	NL TC 96 Tower Cranes	ISO 2374 / ISO 9373 / ISO 11662-2 / ISO 16881-1 / ISO 17440	03/09/2019
Ahmad Habli	TC 22: Road vehicles	ISO 12405-4: 2018, ISO 17409: 2015, ISO 20653: 2013	17/09/2019
Tarek Hakim	TC 44: Welding and Allied processes	EN ISO 9606-1: 2012 - Cor 1: 2012, EN ISO 9606-2-3-4 - ISO 3821 - ISO 7289	18/09/2019
Hiba Yaacoub	TC 34 SC 4	NL 331:2004 بذور السمسم	31/01/2019 21/11/2019

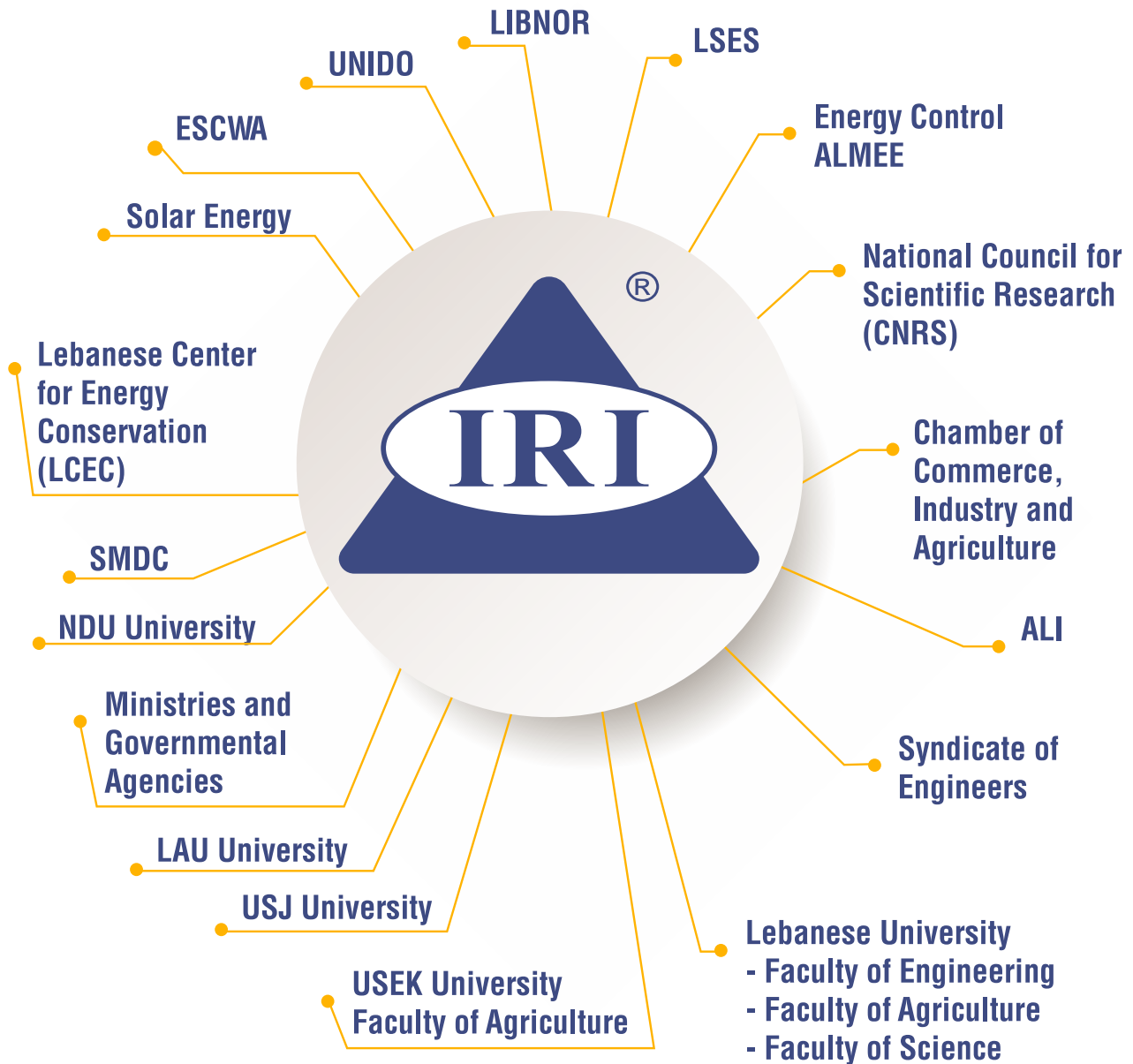
IRI Seminars / Conferences

Participant	Organizer	Object/Title	Date	Location
Elias Maalouf Joseph El Helou Edgar Shaaya Alaa Ahmad	Physikalich - Technische Bundesanstalt (PTB) & Royal Scientific Society (RSS)	Pre-assessment of temperature Laboratory	25-27/02/2019	IRI
Elie Dawaliby Ahmad Wehbe	Electrical Lab-IRI	Energy meter test (Accuracy requirements)	27/02/2019	IRI
Thomas Homsy	Electrical Lab-IRI	Tripping characteristic test of circuit breakers	26/03/2019	IRI
Elie Dawaliby	Electrical Lab-IRI	IP test for the 1st and 2nd characteristic Numeral	30/04/2019	IRI
Ahmad Wehbe	Electrical Lab-IRI	Protection against access to live parts	09/07/2019	IRI
Mehdyne Habli	Electrical Lab-IRI	Performing the battery charger test	26/08/2019	IRI
Thomas Homsy	Electrical Lab-IRI	Performing the needle flame test	30/09/2019	IRI
Ziad Moukarzel Jihad Hajj Chehaddeh Eliane Sawma Awad Mahmoud Amhaz Rabih Issa Abbas Jaber Hanna Francis Toni Chammai Carine Slaiby Stephanie El Asmar Joseph El Helou Edgar Shaaya Mohamad Asaad Hajjar Achraf Arabi Ahmad Habli Ahmad Hassan Amine Jbeily Hovig Kouyoumdjian Elie Melky Mohamad Zeaiter Dany Tahchy Roy Reaidy	IRI - ELCIM	Data Science	10/12/2019	IRI

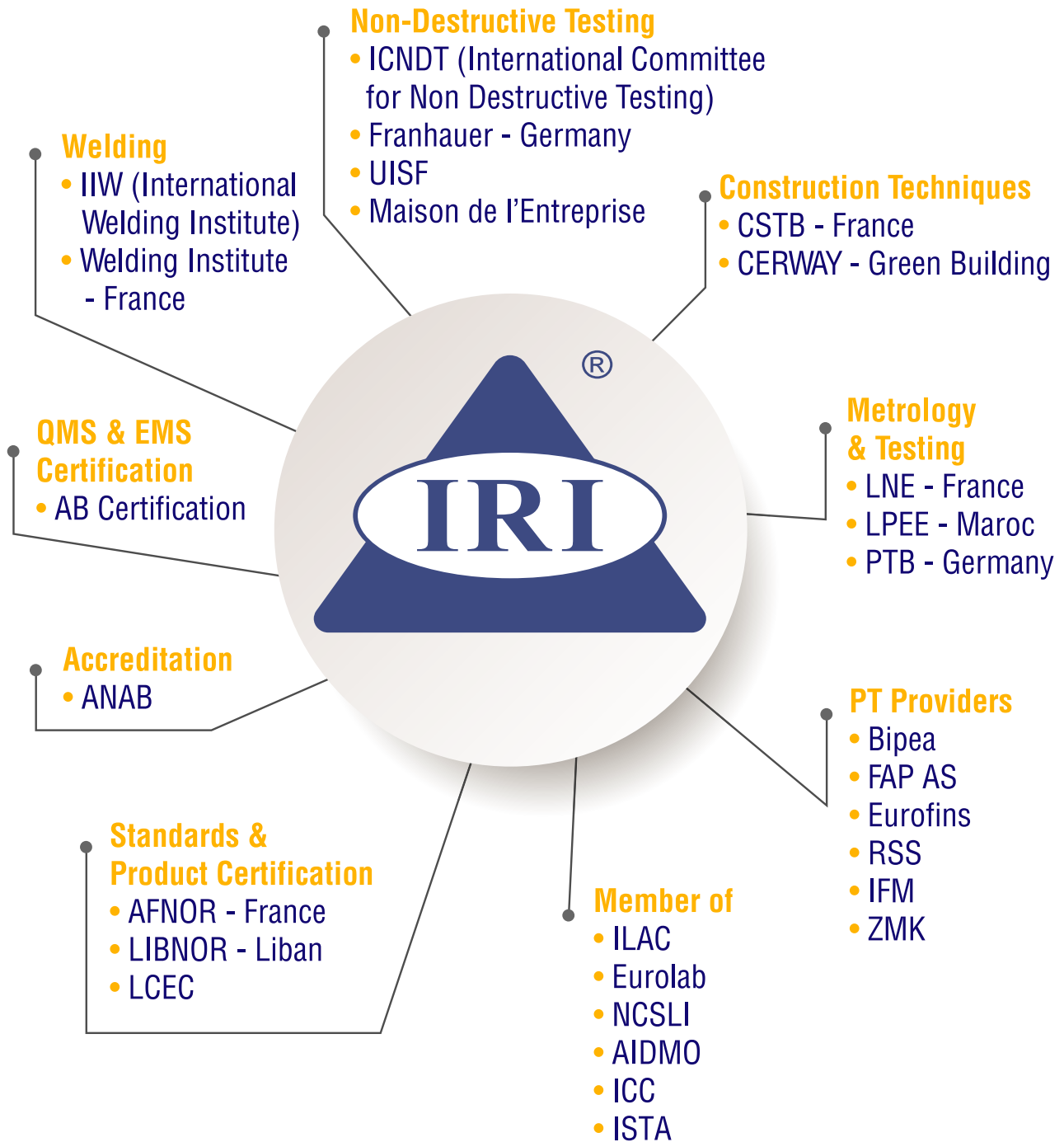


INTERNATIONAL AND LOCAL PARTNERSHIPS

LOCAL PARTNERS



INTERNATIONAL PARTNERS





DECREES, LAWS AND DECISIONS

DECREES

Decree		Official Gazette		Subject	Authority
No.	Date	Issue	Date		
5187	16/07/2019	Supplement to issue 35	18/07/2019	Regulation of the National Council for Measurement	President of the Republic
5704	01/10/2019	46	03/10/2019	Make legally binding the national standards on childcare products and accessories	Ministry of Industry
5705	01/10/2019	46	03/10/2019	Make legally binding the national standards on chemicals, disinfectants and sanitizers	Ministry of Industry
5706	01/10/2019	46	03/10/2019	Make legally binding the national standards on fertilizers and soil conditioners	Ministry of Industry
Correction of decree 5706		47	10/10/2019	Correct a typographical error in Decree No. 5706, dated 1 November 2019, on making legally binding the national standards on fertilizers and soil conditioners	Ministry of Industry
5707	01/10/2019	46	03/10/2019	Make legally binding the national standards on clothes and protective equipment	Ministry of Industry
5708	01/10/2019	46	03/10/2019	Make legally binding the national standards on contraception methods	Ministry of Industry

DECISIONS

Decision		Official Gazette		Subject	Authority
No.	Date	Issue	Date		
I				Designate the Industrial Research Institute to prepare the environmental studies	Ministry of Environment Ministry of Industry
١٨/١/٢٠١٩م	21/01/2019	7	07/02/2019	Regularization of liquid and liquefied petroleum products tankers	Ministry of Energy and Water Ministry of Economy and Trade
I/52	31/01/2019	7	07/02/2019	Decision determining the mechanism for receiving the annual declaration (R5), the individual annual statements (R6) and the overall statement (R7), through the electronic tax system	Ministry of Finance
I/19	06/03/2019			Prevention from travelling abroad at public expense	Ministry of Industry
I/188	13/03/2019	19	04/04/2019	Amendment of Decision No. I/586, dated 31/7/2018, related to the analysis of pesticide residues in imported tea, rice and dried fruits	Ministry of Agriculture
I/49	16/04/2019			Implementing decision of Decree No. 117, dated 3/7/2014, and Decree 121, dated 3/7/2014	Ministry of Industry
I/52	09/05/2019			Registration of foreign plants qualified to export their products to the Republic of Lebanon	Ministry of Industry

Decision		Official Gazette		Subject	Authority
No.	Date	Issue	Date		
I/53	09/05/2019			Registration of foreign plants qualified to export their products to the Republic of Lebanon	Ministry of Industry
I/54	21/05/2019	28	30/05/2019	Exemption of some imported raw materials from laboratory tests	Ministry of Industry
I/357	11/06/2019			Creation of the Laboratories Committee	Ministry of Agriculture
I 18	01/07/2019	33	04/07/2019	Amendment of Decision No. 175, dated 15/09/2015, on the replacement of metal gas cylinders (butane / propane) in local market	Ministry of Energy and Water
I/91	09/09/2019	44	19/09/2019	Decision to conduct tests on stoves, fireplaces and their accessories	Ministry of Industry

CIRCULARS

Decree		Subject	Authority
No.	Date		
7/2019	20/03/2019	To all public administrations, public institutions and municipalities in order to give priority to offers of goods made in Lebanon, instead of offers of foreign goods	President of the Council of Ministers



**COMMUNICATION
& MEDIA**

المصدر العام لمعهد البحوث الصناعية: يقضي إعادة النظر في أسس التنظيم المدني

الدكتور Bassam Frenn، مدير عام المعهد، يؤكد أهمية البحوث الصناعية في تطوير المدن الحديثة، ويؤكد على ضرورة إعادة النظر في أسس التنظيم المدني في ظل التطور التكنولوجي المتسارع.

أكد مدير عام المعهد للبحوث الصناعية، الدكتور Bassam Frenn، في حديثه مع «المصدر» أهمية البحوث الصناعية في تطوير المدن الحديثة، وضرورة إعادة النظر في أسس التنظيم المدني في ظل التطور التكنولوجي المتسارع. وقال فرنن: «التنظيم المدني هو الأساس الذي تقوم عليه المدن الحديثة، ويجب أن يتكيف مع التطور التكنولوجي المتسارع، خاصة في ظل انتشار السيارات الكهربائية والطائرات بدون طيار والذكاء الاصطناعي». وأضاف: «نحن بحاجة إلى تحديث القوانين والأنظمة التي تحكم التخطيط الحضري، خاصة في ظل التغيرات المناخية والتحديات البيئية التي تواجهها المدن الحديثة». وأكد فرنن على ضرورة تعزيز التعاون بين القطاعين العام والخاص في مجال البحوث الصناعية، وضرورة دعم الحكومات والهيئات المعنية في تطوير البحوث التطبيقية التي تساهم في تحسين جودة الحياة في المدن الحديثة.

في سياق متصل، أكد فرنن على أهمية البحوث الصناعية في تطوير المدن الحديثة، وضرورة إعادة النظر في أسس التنظيم المدني في ظل التطور التكنولوجي المتسارع. وقال فرنن: «التنظيم المدني هو الأساس الذي تقوم عليه المدن الحديثة، ويجب أن يتكيف مع التطور التكنولوجي المتسارع، خاصة في ظل انتشار السيارات الكهربائية والطائرات بدون طيار والذكاء الاصطناعي». وأضاف: «نحن بحاجة إلى تحديث القوانين والأنظمة التي تحكم التخطيط الحضري، خاصة في ظل التغيرات المناخية والتحديات البيئية التي تواجهها المدن الحديثة». وأكد فرنن على ضرورة تعزيز التعاون بين القطاعين العام والخاص في مجال البحوث الصناعية، وضرورة دعم الحكومات والهيئات المعنية في تطوير البحوث التطبيقية التي تساهم في تحسين جودة الحياة في المدن الحديثة.

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ALL SEASONS MAGAZINE (KUL AL FUSUL) – ISSUE NO. 20, MAY 2019

Interview with Dr. Bassam Frenn

“Dr. Bassam Frenn: The Industrial Research Institute is a National Technical Shield Safeguarding Public Safety”



الدكتور باسام فرنن

مختبرات باسام فرنن، جامعة بعلبك، بعلبك، لبنان

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الدكتور باسام القرن معهد البحوث الصناعية فرع وطني تقني يحفظ السلامة العامة

بعد ثلاث سنوات من العمل في القطاع الخاص، وبعد 1988 أصبحت دكتوراً في الهندسة الصناعية في جامعة بعلبك، وهو ما جعله من بين نخبة الباحثين في هذا المجال في لبنان.

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AL MORAKEB AL MALI MAGAZINE – ISSUE NO. 331, JUNE 2019

Visit of H.E. Minister of Industry Wael Abu Faour to the Industrial Research Institute

“Abou Faour Visits IRI: We are proud of the achievements; second list of materials exempted from lab tests to be released soon to reduce costs incurred by industrialists”

أبو فاور جال في معهد البحوث الصناعية
تبادل بالإنجازات المحققة والأجندة الثانية من المواد المعفاة من الفحوصات تبصير فريقنا تخليفاً للتكليف على الصناعيين




على ما تضمنه جدول الأعمال، بدأ اللقاء بتحيةة رسمية من قبل مدير المعهد الدكتور باسام القرن، الذي رحب بالوزير وشرح له أهمية المعهد وأهدافه. ثم تناول الجانبان موضوعاً هاماً يتعلق بالإنجازات المحققة في إطار الاستراتيجية الوطنية للصناعة، حيث أشار الوزير إلى النجاحات التي حققتها المؤسسات البحثية في تطوير منتجات جديدة وتحسين جودة الإنتاج.

في إطار الاجتماع، تم مناقشة القضايا المتعلقة بالمواد المعفاة من الفحوصات، حيث تم تقديم قائمة جديدة من المواد التي يمكن استخدامها في الإنتاج الصناعي دون الحاجة إلى إجراء اختبارات مخبرية مكثفة. هذا القرار من شأنه أن يقلل بشكل كبير من التكاليف التي يتحملها الصناعيون، مما يساهم في تعزيز القدرة التنافسية للقطاع الصناعي اللبناني.

ختم اللقاء بتأكيد الوزير على دعم الحكومة للقطاع البحثي والتطويري، وحثه على مواصلة العمل على تطوير البنية التحتية البحثية في لبنان، بهدف تحقيق المزيد من الإنجازات في مجال البحث العلمي والتكنولوجيا الصناعية.

الوزير أبو فاور:
تم التقى وزيراً من قبل وزير الصناعة، وهو ما جعله من بين نخبة الباحثين في هذا المجال في لبنان.

وزير الصناعة يجول في معهد البحوث: لدعم قطاع البحث التطبيقي المهم



أبو فاعور وزير الصناعة يجول في معهد البحوث

لقد وزير الصناعة والوزير أبو فاعور في معهد البحوث الصناعية، وكان في استقبلته المدير العام بسام القرن والمدير العام لوزارة الصناعة علي جديعون والمديرين وكوادر المعهد. وقال في مزارع الأبحاث والتجارب والمختبرات في المعهد. وأضاف أبو فاعور بدموع المعهد مؤكداً «استمرار تقديم التسهيلات لتأميناً بعدد تم إصدار الترخيص الأول من إعطاء المواد الأولية المستعملة في الصناعة عن المحورين الخيرية للتطبيق عن أمداء التكلفة على الصناعيين». وقال: «نحن نعلمه على دراسة لائحة جديدة مستعدة فرمياً». وبعد عرض فيلم عن المعهد وإنتاجه وتطويره إلى القرن كلمات رحب فيها بالوزير أبو فاعور ونوه بالتجربة السابقة معه عندما كان وزيراً للصناعة مؤكداً رعايته ودوره البناء في تطوير الصناعة ودعم المعهد مشيراً إلى أن المعهد يعمل باكتفاء وقبول ذاتي من دون أي دعم من الدولة. وشدد على أهمية دعم قطاع البحث التطبيقي الفعّال في لبنان، مبيّناً بين البحث العلمي والبحث التطبيقي الأهم لبلد كلسان، إذ ليست الحاروب أن سرود لك دولار يعرف في البحث التطبيقي يكون حدود العشرين دولاراً. ثم ألقى الوزير أبو فاعور كلمة جاء فيها: «أفخر

أبو فاعور يراس مجلس معهد البحوث الصناعية: تطوير عمله وتوسيع صلاحياته للمساعدة على الإنتاج والمنافسة والتصدير



أبو فاعور في معهد البحوث الصناعية

أرأس وزير الصناعة والوزير أبو فاعور مجلس إدارة معهد البحوث الصناعية، في حضور المدير العام للمعهد بسام القرن، والأعضاء المدير العام لوزارة الصناعة والوزير جديعون، ممثل المصرف ووزير محاسب، ممثل نقابة المهندسين عدنان حسن هاديان، وممثل القطاع الأكاديمي والجامعي جبران كرم، المستشار القانوني للمعهد المحامي أندريه نازر، والمدير الفني والإداري في المعهد سليم كلوزي. وبعد الاجتماعات في جدول الأعمال، وقدّم الوزير عرضاً تقديمياً عن تطور النشاطات في المعهد منذ بداية الستة، مؤكداً أن نشاط المعهد يؤثر في حجم الأعمال في لبنان كونه مرجعاً للنشاط الاقتصادي والصناعي والتجاري والإمراضي. إضافة إلى دوره البحثي في مساعدة الصناعيين في الدراسات والاستشارات التطويرية، ودعمه على أهمية سياسة الإسهام في خفض تكلفة الإنتاج على الصناعيين، لمساعدتهم على المنافسة والتصدير، وعرض مساندة إنشاء الفيزي الجديد الإقليمي للمعهد التي جاءت من المعهد الحالي، شارحاً أهمية تجهيز المختبرات الحديثة والتجهيزات للقطر. وكشف أن قيمة المعهد وموجوداته عام ١٩٩٨ كانت في حدود ٥٠٠ ألف دولار، فأرفعت في السنوات الأخيرة مع اعتماد السياسة التوسعية والتطويرية وقد انشركت مع المؤسسات العالمية الشائكة، إلى ما يقارب الثلاثين مليون دولار، وهي تصل إلى قيمة فعلية بأكثرية نفوق الثلاثين مليون دولار. وثمّ أبو فاعور الأمانة والمعايير في المعهد على التطور الذي أصبح عليه المعهد، وقال: يشكل المعهد أحد أبرز المؤسسات القليلة

الجمهورية

العدد 2493 | الأوتاد 28 أيار 2019

تعاون بين غرفة طرابلس والبحوث الصناعية

استعرض رئيس غرفة طرابلس والشمال توفيق دبوسي، مع مدير عام معهد البحوث الصناعية بسام القرن، مجمل المشاريع الاستثمارية والانمائية والتطويرية التي تطلقها غرفة طرابلس بهدف النهوض بالإقتصاد.

واعتبر دبوسي أن اللقاء مع القرن والفرق العامل في المعهد هو نتائج لخيار التعاون الوثيق القائم بين المعهد وغرفة طرابلس منذ سنوات طوال، ومنذ أن تبلورت فكرة اعتماد شهادات لمرافقة الجودة في غرفة طرابلس والمختبرات بما وصلت إليه من مرحلة متقدمة من حيث الاعتراف الدولية والبنية التقنية الأكثر تطوراً. وبعد جولة على مختلف المشاريع المعجزة داخل الغرفة أثار القرن إلى أن المشاريع القائمة داخل غرفة طرابلس هي مشاريع يتحور اهتمامها الاستثنائي بالمنتج اللبناني ووجدته، سواء أكان زراعياً أم صناعياً، وهي منتجات لبنانية أساسية... ونحن يندنا ممدودة للتعاون لأننا شركاء في العمل على الحفاظ على النوعية وتشجيع الاستثمار وتوفير فرص العمل.

التضار

العدد 26 | اليوم ٢٠١٩ | العدد ١٩٥ | العدد 20943

اتفاق تعاون لدعم الصناعات الغذائية بين اللبنانية الأميركية ومعهد البحوث الصناعية

البحث والتطوير في مجال الصناعات الغذائية، وهو يند على أهمية تطوير بنية البحوث الصناعية، وذلك بالتعاون مع المؤسسات الدولية والتي تلعب دوراً حيوياً في تحسين جودة المنتجات الغذائية. وقد تم توقيع الاتفاقية بين المعهد والبحوث الصناعية في إطار التعاون بين المعهد والبحوث الصناعية في مجال الصناعات الغذائية، وهو يند على أهمية تطوير بنية البحوث الصناعية، وذلك بالتعاون مع المؤسسات الدولية والتي تلعب دوراً حيوياً في تحسين جودة المنتجات الغذائية.

أشرف على توقيع الاتفاقية وزير الصناعة والوزير أبو فاعور في معهد البحوث الصناعية، وذلك بحضور المدير العام للمعهد بسام القرن والمدير العام لوزارة الصناعة علي جديعون، والمديرين وكوادر المعهد. وقال في مزارع الأبحاث والتجارب والمختبرات في المعهد. وأضاف أبو فاعور بدموع المعهد مؤكداً «استمرار تقديم التسهيلات لتأميناً بعدد تم إصدار الترخيص الأول من إعطاء المواد الأولية المستعملة في الصناعة عن المحورين الخيرية للتطبيق عن أمداء التكلفة على الصناعيين».





أبو فاعور: المستوردات تحتاج للتشدد بالمراقبة



أعلن وزير الصناعة والتجارة فاعور عن أن المستوردات غير المطابقة لشروط السلامة العامة والصحة والتي تسببها معطى تخاري بحث تحتاج إلى مراقبة أكثر وتشدد أكثر في الإجراءات وقد بدأنا بهذه الإجراءات لحماية الاقتصاد وحفاظاً على المستهلك.

وعمت في اجتماع مطبقه المدير العام لوزارة البتر جديون والمدير العام لشهد المستهلكات حماية المستهلكين ورئيس جمعية الصناعيين المظنون فادي الجميل في البيات هذه الاجراءات وتعليقها لخطوة العهد الجديد من المستهلكين الذين يشهدون الحماية والصيانة العامة وأنهم هذه الخطوات هي استجابة من المستهلكين لحماية رايوتهم وسرعات اوقات الخلل. محذراً لهم من انهم قد يفترون وقد من تلقاها من اثار الخلل في ايمان

أبو فاعور خلال اجتماع من أجل عقد الشراكة مع القطاع
 برئاسة المهندس جورج وائسج
 وزير دولة مطبقه
 وشايع مع استشاري مصرف
 مونيستانت في ليد - عميل مدى
 معتمد من العهد
 الى نقلا الوعد من العراق السوق
 الاقتصادي معجب الميرة المستورد.



جولة للمحققين الاقتصاديين في معهد البحوث الصناعية



تتم بعهد البحوث الصناعية جولة لفئة المحققين الاقتصاديين الممثلين في وزارة الخارجية والمغتربين في بيروت والقسم المختصات كإعلامهم على دور معهد ومهامه وإقامة التعاون بعد تشجيعهم من قبل الجهات السيولامة بالشراخ.

والتقى مدير معهد البحوث الصناعية في بيروت مع وفد من المحققين الاقتصاديين من لبنان، وهم من وزارة الخارجية والمغتربين، وذلك في إطار الزيارة التي أجراها الوفد اللبناني إلى بيروت.

وخلال اللقاء، تم عرض دور المعهد في تعزيز التعاون بين القطاعين العام والخاص، وكذلك في دعم البحث العلمي والتطوير التكنولوجي، وذلك من خلال تنفيذ المشاريع البحثية التي تخدم الاقتصاد الوطني.

وتم التأكيد على أهمية البحث العلمي في تعزيز التنافسية الاقتصادية، وذلك من خلال تطوير المنتجات والخدمات الجديدة، وذلك من خلال تنفيذ المشاريع البحثية التي تخدم الاقتصاد الوطني.

وتم التأكيد على أهمية البحث العلمي في تعزيز التنافسية الاقتصادية، وذلك من خلال تطوير المنتجات والخدمات الجديدة، وذلك من خلال تنفيذ المشاريع البحثية التي تخدم الاقتصاد الوطني.

التمتع مع الوفد أيضا لتفصيل بالمواصفات والوجود التطوير وفق المعايير العالمية، ولذا يأتي دورنا في تسهيل هذه العملية بالتعاون مع المؤسسات العلمية والمهنية مع البحوث الصناعية التي على الزيادة بالمنتجات والخدمات والمواصفات التي تخدم الاقتصاد الوطني.

وتم التأكيد على أهمية البحث العلمي في تعزيز التنافسية الاقتصادية، وذلك من خلال تطوير المنتجات والخدمات الجديدة، وذلك من خلال تنفيذ المشاريع البحثية التي تخدم الاقتصاد الوطني.



NBN TELEVISION, 12-03-2019
 Interview with Professor Joseph Matta
“Applied Researches and Tests at the Industrial Research Institute”

MTV TELEVISION, 11-10-2019
 Interview with Professor Joseph Matta
“The Industrial Research Institute’s Role in Protecting Industry, Consumer, Health and Public Safety in Lebanon”