



PRESS RELEASE

Canadian and Israeli Firms Collaborate on the Development of Innovative Products and Services

The Canada-Israel Industrial Research and Development Foundation (CIIRD) Announces Four New Bilateral Technology Projects Valued at More than \$5 Million

OTTAWA, Ontario and TEL AVIV, Israel; June 8, 2017 – The Canada-Israel Industrial Research and Development Foundation (CIIRD) today announced four new bilateral R&D projects valued at more than \$5 million that will help Canadian and Israeli firms access global markets. Leveraging more than \$2.2 million from CIIRD, the projects bring together 11 Canadian and Israeli technology companies and research partners to create and commercialize new technologies with application in life sciences, public safety, and communications technologies. Downstream, the emerging products and services are projected to generate hundreds of millions of dollars in revenues for collaborating companies, helping to stimulate the creation of new jobs and other economic benefits in Canada and Israel.

The four selected Canada-Israel projects combine, as do all CIIRD projects, the R&D strengths, expertise and resources of the collaborators. In these projects, the bilateral teams aim to develop innovations that:

- Advance automotive technologies that improve traffic management, operations and security at border crossings;
- Improve detection, diagnosis and treatment of breast and skin cancer by creating a medical device that uses heat to eradicate cancer cells with little or no damage to surrounding tissue;
- Enable heart patients to consistently and reliably monitor their cardiac activity in real time 24 hours a day through a sensor-based wearable shirt; and
- Better assess of the efficacy of anti-cancer drugs throughout the clinical trial process with the use of biomarkers, helping pharmaceutical firms to better identify those drugs with the greatest potential

The CIIRD Board of Directors approved funding for the newly selected initiatives in December 2016 in Tel Aviv, Israel. With equal representation from Canada and Israel, the Board provides final authorization on R&D project proposals that meet key eligibility requirements, and pass rigorous independent technical and business merit reviews in both countries. CIIRD provides early stage investment for bilateral R&D initiatives by contributing up to 50 percent of joint project costs, to a maximum of CDN \$800,000. A portion of the funding for bilateral R&D technology commercialization initiatives is funded by the Canadian International Innovation Program (CIIP).

These projects represent strong additions to a portfolio of more than 120 CIIRD-funded bilateral R&D initiatives that have engaged more than 220 Canadian and Israeli technology- based companies. Based on conservative data provided directly by participating companies, CIIRD-enabled technologies have generated several hundreds of millions of dollars in economic value for Canadian and Israeli companies over the past decade alone.

“CIIRDF takes its mandate from the governments of Canada and Israel seriously and, specifically appreciates the support of Global Affairs Canada (GAC) and the Israel Innovation Authority in helping to fulfill this mandate and build strategic science and technology partnership between Canada and Israel,” said Dr. Henri Rothschild, President of CIIRDF. “The value of this bilateral collaboration is reflected in these four projects, and the economic and social impact of more than 120 collaborative initiatives supported by CIIRDF over the last two decades. Indeed, CIIRDF projects have resulted in economic value already realized that are more than tenfold the amount invested by the governments of both countries. We look forward to continuing to promote and support such valuable bilateral cooperation projects, and delivering even greater value to both countries in the years ahead.”

“On behalf of the Israel Innovation Authority and the CIIRDF Board of Directors, we are delighted to support these four exceptional Canada-Israel R&D projects,” said Aharon Aharon, Chief Executive Officer of the Israel Innovation Authority. “We are particularly encouraged that some of these bilateral initiatives emerged from Arab Israeli entrepreneurs. These specific projects are the direct result of CIIRDF’s initiative with this community that began almost two years ago. This is a groundbreaking first in the history of CIIRDF, and we are confident that there will be many more projects from this dynamic community in the future.”

“The Embassy of Canada in Israel was pleased to host the CIIRDF Board meeting in Tel Aviv last December as Directors evaluated these four selected projects,” said H.E. Deborah Lyons, Ambassador of Canada to Israel. “These Canada-Israel R&D collaborations directly support objectives and priorities established by our Embassy and contribute unique value and further strengthen our science technology and innovation partnership.”

About the Canada-Israel Industrial Foundation (CIIRDF)

The Canada-Israel Industrial R&D Foundation (CIIRDF) promotes, stimulates and invests in collaborative research and development between companies in Canada and Israel, with a focus on the commercialization of new technologies. Established in 1994 under a formal treaty between the Governments of Canada and Israel, CIIRDF is connected institutionally with the Israel Innovation Authority (the former Office of the Chief Scientist in Israel's Ministry of the Economy). CIIRDF has financed more than 120 collaborative R&D projects that have contributed to the joint development and sale of more than 60 new global products. This has generated hundreds of millions of dollars in economic value for Canadian and Israeli companies over the past decade. For additional information, please visit: www.ciirdf.ca

About the Israel Innovation Authority

The Israel Innovation Authority, formerly known as the Office of the Chief Scientist of the Ministry of Economy (& MATIMOP), is an independent and impartial public entity that operates for the benefit of the Israeli innovation ecosystem and Israeli economy as a whole. Its role is to nurture and develop Israeli innovation resources, while creating and strengthening the infrastructure and framework needed to support the entire knowledge industry. For additional information, please visit: <http://www.matimop.org.il/>

About the Canadian International Innovation Program (CIIP)

CIIP fosters and supports collaborative industrial research and development projects with high potential for commercialization between Canada and partner countries. It also stimulates bilateral science and technology networking and matchmaking activities to further new partnerships and accelerate the commercialization of

research and development. CIIP is a funding program offered by Global Affairs Canada and is delivered in collaboration with the National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP) for Brazil, China, India and South Korea. The program is delivered by The Canada-Israel Industrial Research and Development Foundation (CIIRDF) for Israel. For additional information, please visit: <http://tradecommissioner.gc.ca/funding-financement/ciip-pcii/index.aspx?lang=eng>

- 30 -

Media inquiries:

Sonya Shorey
Senior Communications Strategist, CIIRDF
Cell: 613.851.9416
sonyashorey@ciirdf.ca



CIIRDF Backgrounder: Overview of Selected Canada-Israel R&D Projects June 2017

Please find below an overview of three selected Canada-Israel R&D projects supported by CIIRDF; the remaining project is company confidential at this time.

Project Title: Detection of Cancer Tumors Using Novel Microwave and Nano Technologies

Companies: Non-Invasive Medical Devices or NIMD (Jerusalem, Israel); Luna Nanotech (Toronto, Ontario); University of Toronto (Toronto, Ontario)

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells, often leading to the creation of a tumour, a mass of abnormal tissue¹. Breast and skin cancer are two such diseases that demand accurate and timely detection, diagnosis and treatment of malignant tumours. Breast cancer is the most common cancer in women worldwide, with more than 1.7 million estimated new cases diagnosed among women globally in 2012 and about 252,710 new cases expected to be diagnosed among women in the U.S in 2017. Moreover, researchers predict about 1 in 8 U.S. women will develop invasive breast cancer over the course of her lifetime.² Skin cancer is even more prevalent. According to the World Health Organization (WHO), between 2 and 3 million non-melanoma skin cancers and 132,000 melanoma skin cancers occur globally each year.³ These diseases and other cancers impose a tragic human impact on patients, their families and caregivers, and a staggering financial impact on our healthcare system and tax-payers. Early and accurate detection is essential to improving patient outcomes, and reducing the cost incurred by these and other related diseases. It is a challenge that a Canada-Israel R&D team aim to address head-on with the support of CIIRDF.

Luna Nanotech (Toronto, Ontario), a Canadian pioneer in nanomaterial designs for biomedical applications, and NIMD (Jerusalem, Israel), an Israeli start-up with innovative microwave radiation technologies that destroy cancerous tumours, and researchers at the University of Toronto aim to combine their expertise, and develop the first medical device of its kind on the market. This non-invasive innovation will rapidly and accurately detect breast and skin cancer, and use heat to eradicate the cancerous cells with little or no damage to surrounding tissue. Once complete, the companies will undertake marketing and sales of this revolutionary cancer detection system in partnership with large medical device companies which have expressed interest in future collaboration.

¹ <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2017/cancer-facts-and-figures-2017.pdf>

² http://www.breastcancer.org/symptoms/understand_bc/statistics

³ <http://www.who.int/uv/faq/skincancer/en/index1.html>

Project Title: A Total ECG Shirt-Based, Mobile ECG Monitoring Solution

Companies: HealthWatch Technologies Ltd. (Kfar Saba, Israel); CardioComm Solutions (North York, Ontario)

An electrocardiogram (ECG) is a common and well-known cardiac test that assesses the electrical activity of the heart. When performing an ECG test today, a physician places electrodes connected to a machine on the bare chest of the patient to measure the electrical activity of the heart. The machine processes the cardiac electrical activity, and then publishes this data on paper and a computer screen for analysis by the doctor. This test is currently conducted in a hospital or medical office setting, requiring patients to schedule an appointment and travel to physician at a designated time. With critical support from CIIRDF, a Canada-Israel R&D team aims to bring this capability directly to the patient, and create a shirt with a wearable medical ECG device that tracks and measures the electrical activity of the heart in real-time, 24 hours a day. Given the escalating costs associated with heart disease, this medical device is timely. According to the American Heart Association, the cost of cardiovascular disease will exceed \$1 Trillion by 2035. The emerging self-health monitoring innovation that promises to enable more rapid and targeted response to cardiac issues, and help save more lives.

It is also a lucrative market opportunity. The global medical wearable devices market was valued at more than USD\$3.2 billion in revenue in 2016, and it is expected to surpass USD \$7.9 billion in 2021⁴. In the U.S. alone, estimated annual revenue for ECG management services exceeds \$1 billion annually. With support from CIIRDF, HealthWatch Technologies (Kfar Saba, Israel) and CardioComm Solutions (North York, Ontario) will collaborate on the development of an easily wearable and affordable electrocardiogram (ECG) monitor to assist cardiac patients with home monitoring. This bilateral team will integrate HealthWatch's medical-grade, sensor-based smart clothing with CardioComm's computer-based ECG management and reporting software and mobile technology to deliver a comprehensive, reliable and cost-effective solution for cardiac monitoring and reporting. CardioComm and HealthWatch each are ISO certified organizations with several software and device technologies approved for use as medical devices by regulatory bodies such as the Food and Drug Association (FDA), Health Canada and Europe (CE Mark). It is an innovation promises to improve the quality of healthcare, while reducing healthcare costs and improving patient outcomes.

⁴ <https://www.mordorintelligence.com/industry-reports/global-wearable-medical-device-market-industry>

Project Title: Development of a Biomarker-Based Assay to Assess the Efficacy of Anti-Cancer Drugs

Companies: Apricode Technologies (Tel Aviv, Israel); Nucro-Technics (Scarborough, Ontario); Predixal (Ramat Gan, Israel)

The path to drug discovery, development and commercialization is a highly complex, challenging and costly venture that typically spans 15 to 20 years, demands hundreds of millions of dollars and requires extreme perseverance. This long pharmaceutical development pipeline is mired by tremendous uncertainty about whether the drug will attain the desired results through a series of clinical trials, overcome stringent regulatory hurdles, and achieve the federal approvals required to make it to market. According to research from the University of Toronto, approximately 80 percent of new drugs fail during the clinical trial process. More promising, this same report found that breast cancer drugs that use biological markers (or biomarkers) increased the success rate of clinical drug trials by almost 50 percent, and reduced the cost of clinical trials by an average of 27 percent.

A biomarker is a specific physical trait or measurable, biologically produced change in the body connected with a disease or health condition⁵. These indicators can help a physician to assess patient risk for disease; facilitate diagnosis; make educated decisions about treatment options; and predict patient outcomes. Biomarkers, used alone or in combinations called panels, could vastly improve cancer screening, diagnosis and treatment, and help to increase the survival rates for those who suffer from this disease. Moreover, the global cancer biomarkers market was valued at USD \$25.3 billion in 2016, and it is expected to reach USD \$39.2 billion by 2021.⁶

Leveraging support from CIIRDF, a Canada-Israel R&D team aims to develop a new biomarker-based diagnostic system that enables the improved assessment of anti-cancer drugs, helping pharmaceutical companies to better identify those drugs with the greatest potential and maximize their investment in the drug development and commercialization process. The project brings together: Apricode Technologies (Tel Aviv, Israel); Nucro-Technics (Scarborough, Ontario); and Predixal (Ramat Gan, Israel). The Israeli team will bring expertise in machine learning and big data prediction solutions, while Canadian collaborators contribute capabilities in pre-clinical toxicology, bioanalytical, genetic toxicology, histopathology, clinical chemistry and microbiology.

This bilateral project seeks to help reduce the high attrition rate of new drugs in clinical trials by improving the predictive value of pre-clinical research through biomarkers, replacing less reliable approaches used to assess drug efficacy today. In support of this objective, the team will develop machine learning algorithms that enable more efficient and cost-effective assessment of anti-cancer drugs throughout many stages of the clinical trial process. It is an innovation that could help to accelerate the development of the most promising anti-cancer drugs, and improve the lives of cancer patients around the world.

⁵ <http://www.ehf.org.il/Files/Conferences/20/ehp%20what%20is%20a%20biomarker.pdf>

⁶ <https://www.mordorintelligence.com/.../global-cancer-biomarkers-market-industry>