TECHNIONEWS

Newsletter of Technion Canada
Fall 2018

TECHNION CANADA CELEBRATES ITS 75TH ANNIVERSARY

CONTRIBUTE TO TOMORROW'S **INNOVATION**

MESSAGE FROM

DOREEN GREEN & MARVIN OSTIN

National Chair | **National President**

Dear Friends,

This is a very special time for Technion Canada as we celebrate our 75th Anniversary; in the same year as Israel celebrate its 70th Anniversary and at the same time remembering that the founding of Technion occurred 36 years before Israel declared its independence.

However it is not the dates that are important; it's the people that we celebrate.

In 1912, an implausible vision of creating a world-class institute of scientific and technological education, in what was then Palestine became a reality with the laying of the cornerstone of Technion. That cornerstone set in motion a century of innovation responding to national and global needs. This reality began with the visions and actions of a group of men including Albert Einstein, Martin Buber, Chaim Weizmann and others. They dreamt it and then made it happen.

In Canada a small group, many of whom were engineers or architects, started modestly by mailing books to Palestine's first university-type institution, the Technion, which opened in 1924. The Canadian society grew, as did the contributions and interest in the fast developing Technion in Haifa. The campus is dotted with Canadian names marking buildings, lab, dorms, parks and many students and faculty have been supported through scholarships, fellowships and research grants due to the generosity of Canadians across the country.

Now 75 years later, it is our turn! Our turn to tell the story of Technion. To let our friends and colleagues know about the impact Technion has had on Israel and the world. This global impact is the result of the incredible students, faculty and researchers of Technion combined with the university's rankings, investments, number of global partnerships, and reach of innovation.

We are looking to you to help us share this important story. Using word of mouth or social media let everyone know that supporting Technion's visionary education will lead to tomorrow's innovation and will have a world of impact.

Sincerly

Doreen & Marvin

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EXCELLENCE ENTREPRENEURSHIP GLOBAL IMPACT

Technion
CANADA

TECHNION LAUNCHES UNPRECEDENTED

$1.8 BILLION CAMPAIGN!

Marvin Ostin, Prof. Peretz Lavie, Doreen Green

Ambition breeds success. You cannot set the bar low when you thrive for greatness and Technion - Israel Institute of Technology lives by these words.

Technion kicked off a $1.8 Billion Global Campaign at the Board of Governors meeting held in Israel this June. The remarkable effort will conclude in 2024 - in celebration of the centennial anniversary of the first Technion class.

Over the next six years, the goal is to grow support and fund research, scholarships, labs and facilities at the Haifa, Israel-based Technion. Israel's first university will continue to focus on diversity, sustainability, engineering, medicine, artificial intelligence, communication, quantum science and more.

Technion Canada proudly takes on the goal to **raise $100 million of this ambitious campaign.**

"This campaign is truly global in nature," said Prof. Peretz Lavie, President of the Technion. "Not only does it involve our societies around the world—including the UK, Canada, Switzerland, Australia, France, Israel, and the U.S.—but it will result in global benefits, such as better quality in soil, water, and air, easy-to-use sources for clean and renewable energy, engineering aid to developing countries, advancing breakthroughs in fighting cancer, and much, much more."

Since Technion-Israel Institute of Technology's founding in 1912, students and faculty have been opening doors to better the world and help solve humankind's most pressing problems. Technion is seeking vital support to keep ahead of the game and ensure their promising team has all the tools necessary to bring the world a better tomorrow.

This campaign will secure Technion's position and keep this leading institute at the forefront of world-changing and life-saving innovation for the next half of the 21st Century.

CONTRIBUTE TO TOMORROW'S **INNOVATION**

TECHNION

THE DEDICATION OF THE NEWLY RENOVATED AUDITORIUM

IN THE BLOOMFIELD BUILDING

The Bloomfield Building at Technion houses the William Davidson Faculty of Industrial Engineering and Management. The Auditorium in the building was built in 1988 and was no longer equipped to provide for today's increased classroom digitization nor was it easily accessible for all students. Prof. Boaz Golany appealed to Harry Bloomfield to support the necessary renovations of the auditorium. At the June Board of Governors Meeting the support received from the Bloomfield and Schachter Family was recognized with the unveiling of a plaque in their honour.

Technion President Prof. Peretz Lavie and Harry Bloomfield

Bloomfield Building Industrial Engineering and Managment

Paul Raducanu, Harry Bloomfield, Amos Horev and Marvin Ostin

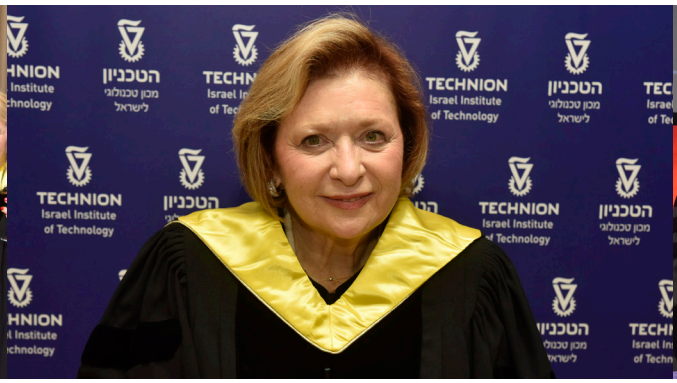
MAZEL TOV TO DR. ANDREW AND AVIVA GOLDENBERG ON BEING

AWARDED AN HONORARY DOCTORATE

"In recognition of your leadership as Technion alumni that inspire other alumni to support their alma mater; in tribute to your significant contributions to the field of robotics and their applications to real-world problems, as well as to the study of architecture; and in gratitude to both of you for your profound dedication to the State of Israel."

The Goldenbergs have expressed their gratitude to Technion for "having received tools for a career" by generously creating the Dr. Andrew & Aviva Goldenberg Architecture Student Pavilion.

Aviva Goldenberg, Andrew Goldenberg, Dr. Robert J. Shillman, Prof. Peretz Lavie



Aviva Goldenberg

Prof. Adam Shwartz, Aviva Goldenberg, Prof. Peretz Lavie, Andrew Goldenberg,

THE LADY DAVIS

FELLOWS CELEBRATION

For many years, the Lady Davis Fellows of Hebrew University and Technion have been recognized at a separate event held during the Board of Governors' meetings of each institution. This year, a joint celebration was held at the Technion honouring all the Lady Davis Fellows from both Universities. Each Fellow was individually recognized and presented with a certificate by Harry Bloomfield QC, President of the Eldee Foundation and Professor Boaz Golany, Technion Vice President of External Relations and Resources Development. Next year the ceremony will be held at Hebrew University in Jerusalem.

The Lady Davis Fellowship Trust was established 1973 to provide an opportunity for Visiting Professors, Post-Doctoral Researchers and Doctoral Students from abroad, regardless of nationality, gender or field of scholarship to teach, to study and to participate in research in Israel at the Hebrew University in Jerusalem and at the Technion Institute of Technology in Haifa.

To date, 962 Visiting Professors, 1,301 Postdoctoral and Doctoral students and 176 Israelis have served as Lady Davis Fellows. The international impact and, hence, recognition has been impressive, making it one of the most distinguished and sought after fellowship programs in the world. In addition, over these 45 years the Lady Davis Fellowship Trust has greatly enriched the Hebrew University and the Technion by constantly introducing exceptional talent into their academic environment and by linking these two institutions, through human bridges, with the world network of science and scholarship.

The Fellowship program was named after Lady Davis, who provided the endowment for the Trust. Lady Davis was a distinguished philanthropist and benefactor of educational institutions, who died in Montreal, Canada in 1963.

The Bloomfield Family have nurtured the Lady Davis Fellowship Trust. Bernard and Louis Bloomfield worked tirelessly to solidify and expand the Trust, and by skillful administration and faithful loyalty to its mission, made it into one of the most important and most effective channels of support for the Hebrew University and for the Technion. Upon his death, Bernard Bloomfield was succeeded by his wife Mrs. Neri Bloomfield on the Board of the Lady Davis Fellowship Trust. Mrs. Bloomfield also played a significant leadership role in Canadian philanthropy and community service until her passing away on the 5th of February, 2015. Today their children, Evelyn and Harry, are continuing the family tradition of support for the Trust.

LEAVING A LEGACY GIFT

A GIFT WITH LASTING MEANING

Technion Canada recently received a bequest from the Estate of Helen Freedhoff for the Faculty of Physics at Technion.

Professor Emerita Helen Freedhoff was, by all descriptions, a trendsetter who was well ahead of her time. She was a highly regarded academic, researcher and theoretical physicist.

Prof. Freedhoff was born in Toronto and excelled in the sciences, having graduated from the University of Toronto with the highest marks. She was awarded the Governor General's Gold Medal. After earning her PhD in physics, she was appointed Assistant Professor at York University in 1967. At the time of her appointment, she believed she may have been the only woman in Canada teaching at the university level in her field.

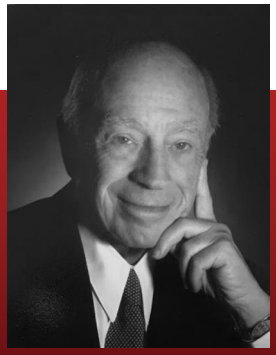
Other than a sabbatical year at Technion in the Department of Physics in 1986, Prof. Freedhoff remained at York University until her retirement in 2005, having published over 40 research papers.

She took a keen interest in her students and was responsible for many of them under her guidance continuing their careers in science.

Her legacy will inspire others.

REMEMBERING

TECHNION CANADA IS SADDENED BY THE PASSING OF THREE SUPPORTERS OF TECHNION AND ISRAEL

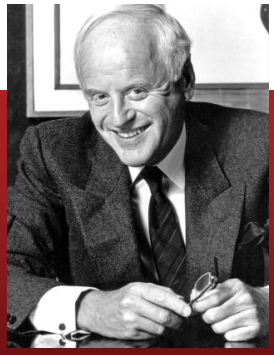


Sydney Cooper 1920-2018

Sydney Cooper was a formidable leader of Technion Canada for over fifty years.

He and his late wife, Florence, were major contributors to every campaign for Technion. As a Past President of Technion Canada, he inspired many others to become involved with Technion, which he felt was an integral component for the ongoing existence of the State of Israel. For his efforts on behalf of Technion and the State of Israel he was bestowed an Honorary Doctorate and was recognized as a Guardian of Technion.

Syd was an inspiration to all who knew him, a leader, a visionary and most importantly a Mensch extraordinaire.

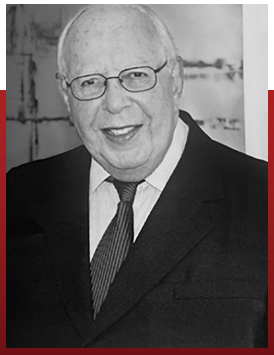


Peter Munk 1927-2018

Peter Munk was an extraordinary business genius with amazing foresight. He dedicated himself to family and charitable causes, among them Technion. He will be remembered for his strength of character and his never-ending commitment to making the world a better place.

Peter Munk was truly a trailblazer when it came to his support of Technion. For this he was awarded an Honorary Doctorate and was counted among the Guardians of Technion.

Technion President, Peretz Lavie stated it best when he said; "Technion has lost one of its giants".



Barrie D. Rose 1930 - 2018

Barrie Rose was an accomplished businessperson and an avid philanthropist.

Barrie Rose's involvement with Technion Canada, both as a leader and a supporter, spanned close to forty years. He was dedicated to helping Technion continue its ground-breaking research in the areas of health, technology and engineering. He was recognized by Technion by being awarded an Honorary Doctorate and he was counted among the Guardians of Technion.

The impact of Barrie Rose's life and his philanthropy will be felt by many people for years to come.

TECHNION ALUMNI

STAY CONNECTED

Dr. Boaz Golany, Technion VP External Affairs and Resource Development and Technion Alumni, Dr. Andrew and Aviva Goldenberg were the keynote speakers at a recent Toronto Alumni dinner.

Following the Toronto event, Montreal hosted Technion Alumni, supporters and guests at an event where they heard informative presentations from Prof. Boaz Golany, and Dr. Andrew Goldenberg,.

Prof. Golany highlighted two areas of the Technion's research focus – the Technion Integrated Cancer Center (TICC) and The Center for Quantum Science Matter and Engineering. He added that entrepreneurship and commercialization are at the core of Technion innovation and that Technion is involved in many areas of collaboration, most recently and the most significant – the Joan & Irwin Jacobs Technion-Cornell Institute and the Guangdong - Technion Israel Institute of Technology.

Dr. Goldenberg began by stating how important it is that he and his wife Aviva, also a Technion graduate, give back to Technion, as it was at Technion that they received tools for their career. Successful careers that now allows them to have made a very substantial contribution to Technion. He then shared his career path that went from working for SPAR Aerospace Ltd., to becoming a Professor of Mechanical and Industrial Engineering at the University of Toronto, to the founding his own company, Engineering Services Inc. (ESI).

SPOTLIGHT ON SAM SPANGLET

Sam Spanglet was born in Germany and was raised and educated in Israel. After serving in the IDF he began his studies at Technion. In 1973 he graduated from the Technion with a degree in Chemical Engineering. After working for four years at the Petrochemicals Industries in Haifa he moved to Canada. His career in Canada began with an engineering position at Monsanto and culminated as VP Shell Operations and President of Albion Sands, a Shell company. Sam retired in 2006. At that time he and his wife moved to Toronto. He has served on the Board of Directors of Atco Power, Opti Oil and Voice Construction. Currently, he serves on the Board of Greengate Power of Calgary, and as an Associate Governor of the Hebrew University in Jerusalem. He has taught a Graduate Course in Leader Management at Technion in the Department of Energy Engineering,

AS AN ALUMNUS, HOW DO YOU VIEW TECHNION?
I credit the Technion for providing me with the necessary technical skills and training to think outside the box which helped me greatly in my career. I am a great supporter of this great institution, as it is most likely one of the best technical schools in the world and is instrumental in the development of the high tech and medical innovations in Israel.

WHAT WAS YOUR MOST MEMORABLE EXPERIENCE AT TECHNION?
I was amazed to find out that all the professors that taught me were world class scientists.

WHAT MAKES YOU MOST PROUD TO BE A TECHNION ALUMNUS OR WHEN SOMEONE ASKS YOU WHAT MAKES TECHNION SPECIAL, WHAT DO YOU SAY?
I am very proud that I was educated at one of the top schools in the world.
I am very proud that the Technion is a major innovation centre.

HOW HAS STAYING IN TOUCH WITH OTHER TECHNION ALUMNI ENHANCED YOUR LIFE?
It always was interesting to find out the career paths of other Technion alumni and the impact that the school had.

IN YOUR YEARS IN A MANAGEMENT POSITION, WHAT WORDS OF WISDOM CAN YOU PASS ON?
During my career and until this day my emphasis is on the biggest asset - the employee.

WHAT IS YOUR MESSAGE TO ANYONE GIVING BACK TO TECHNION OR CONSIDERING DOING SO?
We received the best education possible which enhanced our lifestyle and career, so giving back a little is only fair.

CELEBRATING 75 YEARS OF TECHNION CANADA

IN MAY, **TECHNION CANADA** CELEBRATED 75 YEARS OF SUCCESS WITH FRIENDS, FAMILY, TECHNION ALUMNI, DONORS AND KEY INFLUENCERS AT THE MONTREAL SCIENCE CENTRE. GUESTS WERE GREETED BY AN INTERACTIVE ROBOT AND WELCOMED VIA VIDEO BY TECHNION PRESIDENT, PERETZ LAVIE. TECHNION CANADA IS GRATEFUL TO LONGTIME TECHNION CANADA LEADER AND EVENT SPONSOR SYDNEY COOPER Z'L AND HIS FAMILY.

Technion Canada National President, Marvin Ostin,
Technion Canada National Chair, Doreen Green,
75th Anniversary Celebration Co-Chairs,
Irwin Tauben and Steve Merling

A NUMBER OF TECHNION ALUMNI COMPANIES WERE FEATURED AT THE EVENT.

ReWalk It's More Than Just Walking!
ReWalk Robtics, founded by Technion Alumnus, Dr. Amit Goffer, is an innovative medical device company that is designing, developing and commercializing exoskeletons allowing wheelchair-bound individuals to stand and walk again.

INSIGHTECH The Vision of Non-Invasive Surgery.
Technion Alumnus, Kobi Vortman, is the visionary behind INSIGHTEC's focused ultrasound platform, the non-invasive technology thst allows treated patients to quickly return to their lives.

ENGINEERING SERVICES INC.
Over the years, ESI has become a world renowned robotic developer, focused not only on global robotics, automation and mechatronics technology, but also on integrating cutting-edge technologies such as AI, auto navigation and computer vision.

Gerard and Joyce Mazur, Hela and Jeff Boro, Susan Raymer and Ben Wygodny

Lynda Ostin, Lise Katz, Mary Katz, Marvin Ostin, Doreen Green


Technion CANADA
75 Years
1943-2018
Dream it. Do it. Technion

7 SUPER-SMART TECHNOLOGIES THAT ARE MAKING A DIFFERENCE

TECHNION HELPING ISRAEL INNOVATE FOR THE NEXT 70 YEARS

LIGHT- TRIGGERED CANCER TREATMENT

Targeted drug delivery avoids the debilitating side effects associated with fighting cancer by homing in on the tumor, bypassing healthy tissue. A unique targeted tech developed at the Technion envelops the chemo in a biodegradable polymer coating, which contains nanoscale gold particles. A near-infrared light that penetrates the body without harm shines on the gold particles, heating them up and causing the polymer coating to melt, releasing the drug at its target.

DEVELOPED BY ASST. PROF. BOAZ MIZRAHI AND DOCTORAL STUDENT ALONA SHAGAN

SURGICAL THEATRES

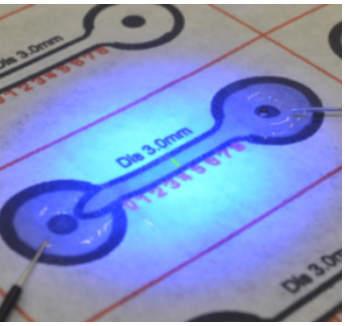
Flight simulators have long allowed pilots to train and rehearse complex missions in advance. That technology is now being applied to the operating room. Combining flight simulation tech with virtual reality and advanced medical imaging, Surgical Theater allows brain surgeons to look inside a patient's head before entering the operating room—effectively simulating upcoming surgeries.

CO-FOUNDED BY MOTY AVISAR, A TECHNION ALUMNUS AND A FORMER ISRAELI AIR FORCE FLIGHT SIMULATOR EXPERT, WITH ALUMNI ALON ZUCKERMAN AND GIDI NAVROTSKY

SQUEEZING WATER FROM THIN AIR

Air is abundant, but water—particularly clean drinking water—is in great demand. A patented system for harvesting water from the air is more cost efficient than current technologies and could solve the looming global water crisis. Existing tech wastes energy by cooling air, along with its gases, before extracting its moisture. This new system separates the moisture first, saving energy on cooling what is discarded.

DEVELOPED BY ASSOC. PROFS. DAVID BRODAY AND ERAN FRIEDLER



MICRO FLUIDIC CHIP FOR DISEASE DIAGNOSIS

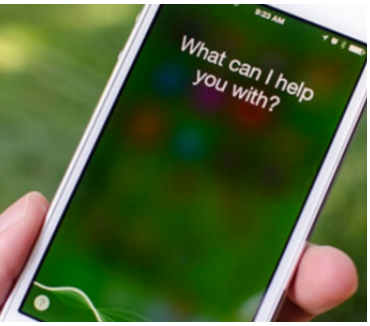
A new microfluidic chip with improved sensitivity could lead to early detection of conditions including heart disease, cancer and malaria, as well as better treatment outcomes. Pictured here is an image of multiple chips, photographed by doctoral student Tally Rosenfeld in Prof. Moran Bercovici's laboratory. These simple devices, capable of analyzing small samples (such as a drop of blood), could replace today's large lab equipment.

DEVELOPED BY ASST. PROF. MORAN BERCOVICI

BONUS BIOGROUP

In this startup's groundbreaking technology, a 3D high-density bone graft is grown in the lab from a patient's own fat tissue and transplanted by injection back into the patient. The procedure was used for the first time in late 2017 on a man who had lost part of his shinbone in a car accident. The technology could one day be used to replace any bone in any place in the body.

BONUS BIOGROUP CEO DR. SHAI MERETZKI IS AN ALUMNUS AND FORMER TECHNION MEDICAL INSTRUCTOR



GIVING A VOICE TO ALL

Voice-controlled technology like Siri or Alexa can be challenging for the 100 million people worldwide with speech impairments caused by stroke, traumatic brain injury, cerebral palsy, Parkinson's disease and other conditions. Using a hybrid of unique statistical modeling and machine learning, a hands-free speech recognition app named Voiceitt enables face-to-face, real time voice communication with humans and voice-controlled tech alike. It is designed for integration into smart homes, assistive and augmentative communications devices, and smart speakers.

VOICEITT CEO DANNY WEISSBERG AND CTO STAS TIOMKIN ARE TECHNION ALUMNI

HYDROGEN ON DEMAND

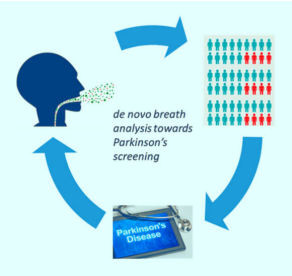
A technique is under development for safely producing hydrogen from water at the point of sale (e.g., gas station). Hydrogen fuel is a promising energy carrier because it is renewable and reduces dependence on fossil fuels. Its production from natural gas is costly and polluting, and current methods using water face safety challenges. This new process uses solar power to split water into separate hydrogen and oxygen cells, preventing flammable intermixing.

DEVELOPED BY PROFS. GIDEON GRADER AND AVNER ROTHSCHILD WITH GRADUATE STUDENT AVIGAIL LANDMAN AND DR. HEN DOTAN

The future of Israel is in high-technology and the future of high-technology in Israel is at Technion.

TECHNION TRIUMPHS

CAN A BREATH TEST DIAGNOSE PARKINSON'S BEFORE YOU HAVE SYMPTOMS?



Since antiquity physicians have been evaluating their patients by the odor of their bodily fluids. Of these, exhaled breath is the most accessible and useful source for monitoring health and disorders.

Armed with this knowledge, Technion researchers, led by Prof. Hossam Haick of the Department of Chemical Engineering and Russell Berrie Nanotechnology Institute, set out on a quest to find out if a breathalyzer could help identify patients who are at the very early stages of Parkinson's disease.

Because people with Parkinson's start experiencing symptoms only later in the course of the disease, when a substantial number of neurons have already been damaged, scientists are trying to find ways to identify bio-markers that can lead to an earlier diagnosis and hopefully more tailor-made treatments to help slow down its progression.

The breath analyzer developed by the Technion multidisciplinary team, which included electrical and chemical engineers and medical researchers, consists of miniaturized sensors that can help detect the early onset of the disease and help with follow-up treatment.

The researchers tested the device on the exhaled breath of 29 newly diagnosed patients who had not yet begun taking medication. When comparing the sensor output to that of 19 control subjects of similar age, they found that the breathalyzer managed to detect early Parkinson's disease with over 80 percent accuracy, almost as good an outcome as an ultrasound scan of the brain.

"Just as a dog can be trained to memorize a smell," said Haick, "so we have trained our sensors in the breathalyzer to identify those that are specific to Parkinson's."

TECHNION LEADS ISRAELI UNIVERSITIES WITH US PATENTS

The Technion is Israel's leading university for registering patents in the United States, with 56 patents approved in 2017, according to data from the US Patent and Trademark Office. Of the world's top 100 universities registering patents in the US, the Technion ranked 39th – a jump of 14 places in a year, after being ranked 53rd in 2016.

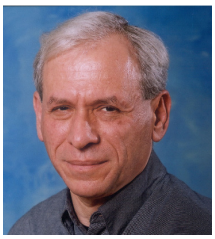
Technion is ahead of top global universities such as Yale, the University of Tokyo, Carnegie Mellon, Georgia Tech and the French École Polytechnique.

"This joyous achievement expresses our approach to the interaction between basic science and applied science," said Technion President Prof. Peretz Lavie. "At the inauguration of the Technion's first class in 1924, Menachem Ussishkin said, "Practical science and basic science are two sides of the same coin." Since then, this concept has been part of the Technion's DNA. Quality research does not contradict applied science, but rather supports it."

HALF OF ISRAEL'S "LEADERS OF INDUSTRY" ARE TECHNION GARDUATES

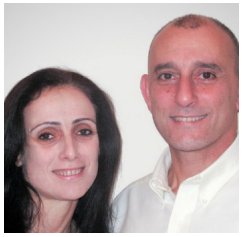
In a list published by Israel's Ministry of Economy and Industry, seven out of twelve "Leaders of Industry" are Technion graduates. The list recognizes people who made important contributions to Israel's industrial sector.

Yossi Vardi

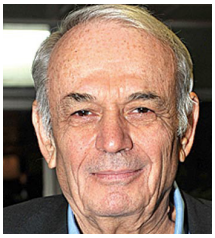


Zohar Zisapel

Yehuda Zisapel



Reem and Amiad Younis



Shimon Eckhouse

Dan Popper

Yossi Vardi is a serial entrepreneur who became well-known in the 1990s with the sale of Mirabilis – one of the first and most notable "exits" of Israel's technology sector. He is considered a pioneer of Israel's start-up industry.

Brothers, Zohar and Yehuda Zisapel, founded dozens of successful companies, including the RAD Group. They maintain close connections with the Technion to this day – a relationship that has included the establishment the Zisapel Center for Nanoelectronics.

Reem and Amiad Younis have worked to promote Israel's Arab communities in the industrial sector. The couple founded Alpha Omega, which develops and distributes medical equipment for brain surgery and the treatment of neurological diseases.

Shimon Eckhouse is a serial entrepreneur and pioneer in the field of medical devices. He founded Lumenis, Syneron Medical, and a number of other companies. Today, he supports early-stage startups through the startup incubator Alon Medtech Ventures.

Managing director and board chairman of Osem, which currently employs approximately 5,000 people throughout Israel, is Dan Propper. He is also credited with making large contributions to Israel's industrial sector as the president of the Manufacturers' Association of Israel.