

# Technion - Israel Institute of Technology: The Engine Driving Israel's High-Tech-Based Economy

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“How lucky that the Technion was founded 24 years before 1948, thus laying the foundations for the future state of Israel. Had Israel been founded before Technion, the road would have been much harder.” – the late Israeli President Shimon Peres

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To underscore President Peres' words, when the Technion opened its doors in 1924, modern Hebrew was so young, it did not yet contain the words to describe the intricacies and disciplines of science and technology. It was the Technion that created a committee to develop technical terminology in Hebrew and publish Israel's first multilingual dictionaries of science.

Since then, the Technion has provided many of the scientists and researchers that drive the nation's technology-based economy and keep its people safe. Technion civil and agricultural engineers helped build the country's infrastructure and turn the desert into orange groves. Its aerospace engineering faculty, the first and still the only one of its kind in Israel, helped create Israel's Air Force and aerospace industry. The Technion has long played an oversized role in Israel's stunning rise in the high-tech arena. It has continued to do so with the 2018 establishment of Tech.AI (Technion Artificial Intelligence Hub) and plans to expand the Henry and Marilyn Taub Faculty of Computer Science.

The Technion has earned a global reputation for its pioneering work in nanotechnology, life sciences, stem-cell technology, water management, sustainable energy, information technology, biotechnology, materials engineering, and aerospace. It is also a world leader in the critically important fields of cybersecurity, quantum science, and artificial intelligence – in which it has been ranked first in Europe for two years running.

Eschewing the typical silos of academia, the Technion encourages faculty and students to work together outside their area of expertise. As such, the Technion — with generous funding from American Technion Society supporters — has established a growing network of research centers in areas such as nanotechnology, the environment, life sciences, autonomous systems, aerospace, neuroscience, cancer, cybersecurity, artificial intelligence, and quantum science. Most recently, Technion President Uri Sivan announced plans to establish multidisciplinary centers in human health, sustainable energy and catalysis, and advanced manufacturing.

## Fast Facts: The Technion...

- is one of a handful of engineering institutes worldwide with its own medical school



- ranks #1 in Israel and #10 in the world in artificial intelligence and robotics
- ranked first in Israel and Europe for the number of U.S. patents granted to universities with 136 new patents approved in 2020-21
- Launched 12 companies by Technion researchers in 2020-21
- ranked #12 in 2020 for turning out entrepreneurs, having generated 602 founders who set up 509 companies and raised \$12.4 billion
- Gurwin-TechSat was the world's first microsatellite to be designed, built, and launched by students
- has a total of 14,996 students (undergraduate and graduate), including 44.2% women
- 48.2% of the incoming 2022-23 class of Technion students are women
- has a student body comprised of 20% Israeli Arabs, mirroring the population at large
- has 578 faculty members for the 2021-22 academic year
- has 17 faculties and 60 research centers and institutes

As the first university in Israel, the Technion has always worked closely with industry. In 1974, Intel started a development and manufacturing center in Haifa that heavily employs Technion graduates. Intel also works on the Technion campus in AI and machine learning research collaborations. Other multinational companies have launched operations on or close to the Technion campus to take advantage of the Technion's research facilities and outstanding graduates, including Apple, Google, Microsoft, IBM, Qualcomm, Yahoo!, and Hewlett-Packard. In 2018, Amazon opened an R&D center in Haifa. And in May 2021, software giant PTC announced it would move its Haifa R&D center onto the Technion campus and invest \$5 million in advanced manufacturing technology and other research.

The Technion is committed to turning its most promising research into commercial products. Its Technion Research and Development Foundation (TRDF) manages the university's research programs and performs services for industry and government. The Technion's technology transfer arm, T<sup>3</sup>, matches Technion research ideas with investors and entrepreneurs. Aimed at fostering commercial investment through the licensing of intellectual property and the establishment of startup companies, T<sup>3</sup> has restructured in recent and the results have been remarkable. Twenty-six spinoff companies were launched in 2020-21 as compared to just 9 companies in 2018-19. Technion DRIVE, an accelerator for entrepreneurs under T<sup>3</sup>'s umbrella, also has dozens of companies in its portfolio, including NanoSynex. Aimed at rapidly prescribing antibiotics, NanoSynex was founded by two Technion alumni and bases its technology on the research of Technion Professor Shulamit Levenberg.

A growing number of universities, municipalities, and businesses have eagerly sought collaboration with the Technion. One that speaks volumes about the Technion's reputation is its partnership with Cornell University to create Cornell Tech, an applied science educational institution in New York City aimed at creating businesses and jobs that will turn the city into a high-tech hub. At the very heart of this initiative is the Joan and Irwin Jacobs Technion-Cornell Institute (Jacobs Institute), which offers a dual master's degree from both universities, and the Runway Startup Postdoc Program. Cornell Tech's Roosevelt Island campus, home to the Jacobs Institute, was officially dedicated on September 13, 2017.



Another prime example of the Technion's burgeoning global influence is its joint venture with Shantou University to build a new applied sciences university in China called the Guangdong - Technion Israel Institute of Technology (Guangdong Technion). This partnership is viewed by many as part of the broader movement of globalization now sweeping the academic world. The Guangdong Technion campus officially opened in December 2017. As of September 2022, the Jacobs Institute had graduated seven cohorts of students since its inception, and had 150 students in its current two-year class.

As Israel's center for high-tech education and research, the Technion is fundamental to the growth of the "Startup Nation," shaping the future of Israel and a positive vision of Israeli leadership and values. As the premier institute of its kind in the region, Technion breakthroughs can benefit all the nations of the Middle East. And as a world-class research university, the Technion helps advance the frontiers of science and technology to benefit people around the world.

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