



TECHNION



GTEP

Grand Technion
Energy Program

GTEP CENTRAL RESEARCH LABORATORIES

- FUEL CELLS
- HYDROGEN TECHNOLOGIES



**LABORATORIES
SERVICES**

PARTNERSHIP POWER:

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A FUTURE POWERED BY GTEP

The Grand Technion Energy Program (GTEP) at the Technion – Israel Institute of Technology is a multidisciplinary research and education program, uniting national and international experts and inspiring sustainable solutions to the global energy challenge.

GTEP was established in 2007 to spur multidisciplinary research and to educate world-class scientists. Since then, GTEP has evolved into a dynamic hub that has been making a significant impact both within the Technion and throughout the national and global energy community.

The GTEP MISSION is to support interdisciplinary research projects; attract new faculty and top graduate students to energy research; promote multidisciplinary collaboration; establish and operate research infrastructure and central research facilities; and to collaborate with industry and other academic institutes on national and international scale, as well as with energy related start-up companies.

A large, stylized 'H2' logo in a light blue circle, representing hydrogen. The 'H' and '2' are in a bold, sans-serif font. The background of the page features abstract, overlapping light blue shapes, including a large arrow pointing towards the top right and a large circle containing the 'H2' logo.

THINK POWER! JOIN GTEP.

The Grand Technion Energy Program (GTEP) Headquarters and Central Laboratories are located on the 4th floor of the Faculty of Chemical Engineering building at the Technion – Israel Institute of Technology.

This facility occupies ~770 square meters and include the Hydrogen Technologies Central Research Laboratory and the Fuel Cells Central Research Laboratory, as well as offices and a meeting room.

The central laboratories complex features state-of-the-art amenities and equipment designed to promote a shared environment – thereby facilitating new research directions and accelerating cooperation among researchers.

Research groups from all academic institutions, industry and start-up companies are welcome to use the laboratories' services, infrastructure and equipment.

The Hydrogen Technologies Research Laboratory (HTRL)

HTRL supports efforts to discover and develop novel materials, processes and systems with the potential to significantly increase the efficiency and reduce the cost of producing hydrogen from domestic natural resources.

Supported research fields include photoelectrochemical and fuel processing systems to enhance the ability to conveniently and inexpensively produce and store large amounts of hydrogen, and research on fuel cells and biomimetic systems to improve the conversion of hydrogen into electrical energy.

The Fuel Cells Research Laboratory (FC)

This laboratory aims to make a significant contribution to the development of fuel cell technologies and other related electrochemical energy technologies. The laboratory provides facilities for fabrication, development, characterization and testing of various types of fuel cell components, devices and fuel cell systems.

Supported research fields include polymer electrolyte fuel cells (PEMFC) and alkaline membrane fuel cells (AMFC) fabrication, mass transport and contamination studies, material development and properties characterization of solid oxide fuel cells (SOFC), and electrochemical diagnostics.

WHAT WE OFFER:

State of the art research facilities and equipment

Professional instructions

Laboratory services

EQUIPMENT

The Hydrogen Technologies Research Laboratory (HTRL)

- Atomic Force Microscope (AFM) with electrochemical (EC) capabilities
- Kelvin Probe (NRH020 KP Technologies)
- Profilometer (DekTak Bruker)
- Nicolet iS50 FTIR Spectrometer (Thermo Scientific)
- TGA SETSYS Evolution
- Gas-Chromatograph (GC) – Agilent 7890A
- AutoChem II 2920 Chemisorption Analyzer
- Mass Spectrometer, Cirrus 2– MKS
- Controlled Intensity Modulated Photocurrent Spectroscopy (CIMPS) – Zahner ElektrikSolar Simulator (Abet, USA)
- Ultrasonic Spray Deposition (ExactaCoat, Sono-Tek)
- Dry/ Wet Electrochemical Characterization Station (Ivium nStat)
- Vinyl Anaerobic Chamber
- 3 Walk-In Hoods

The Fuel Cells Research Laboratory (FC)

- 4 Polymer Electrolyte FC test stations (850e, Scribner)
- Solid-Oxide FC (SOFC) test station (X20, Greenlight)
- Membrane Test System (MTS) (Scribner)
- Rotating Ring Disk Electrode (RRDE) -3A Apparatus, Ver.2.0 (ALS)
- Dilatometer (DIL 402 Expedies Select, Netzsch)
- Vapor Sorption Analysis (VTA-SA+, TA instruments)
- Laser cutter (VLS 4.60, Universal Laser Systems)
- Planetary mono mill (PULVERISETTE 6, Fritsch)
- Screen Printer (MSP-485, Hary Manufacturing, Inc (HMI))
- Glove Box (VTI)



TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY
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