Research & Services | Organic Geochemistry - Energy and Ecology (Yissum)

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Categories	Organic geochemistry, chemical ecology, fossil fuels, hydrogen and upgrading, cyanobacterial mats, polyoxometalates, HDS catalysts and aromatics hydrogenation

Objective/function

The laboratory uses organic geochemistry and chemical ecology in an interdisciplinary approach to develop

- Analytical tools to interact in international projects set up to resolve disasters, such as petroleum spills
- Improved fossil fuels and motor oils
- Hydrogen storage and upgrading of diesel and aviation fuels
- Application of previous studies for bituminous rocks for energy and fuel production

Research provided

- Development of techniques and patented solutions for the bioremediation of petroleum spills, based upon Solar Lake cyanobacterial mats with added stable isotopes of sulfur and carbon
- Development of special dyes and their stabilization and application
- New catalysts of the polyoxometalates family for the ecological improvement of motors oils via HDS as well as reduction of PAH and other aromatics
- Methods to offset the transport of organic pollutants into water reservoirs using sulphate isotopes as a marker for source of salination
- New, environmentally enhanced procedures relating to different types of organic matter and their chemical behavior under acidic conditions via use of solid super acids
- Research and development of products related to the thermal behavior of polymers and brominated compounds (fire retardants)
- Performance of related projects and consultation

Advantages

- The Organic Geochemistry Laboratory has highly skilled, experienced researchers utilizing state-of-the-art equipment and technologies

Available equipment

- Highly sophisticated analytical instrumentation for the study of natural mixtures of compounds using advanced GC-MS as well as GC-MS/MS (ion trap) and isotopic ratios (?34S ; ?13C and others) of bulk and single compounds, as well as single compounds for carbon IRMS

Staff

- Zeev Aizenshtat, PhD
- Irena Miloslavski, Chief Technician
- Three PhD level researchers and four lab assistants

Contact

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