Open positions for graduate students on the project of: *Sunlight as the energy source for driving uphill reactions*

The future of our planet relies on designing catalysts that allow free-of-charge sunlight to supply the energy required for driving endothermic reactions. We tackle this challenge for the conversion of molecules/ions to higher energy products that are still stable and may be used for getting back the energy on demand. While the most intensively studied example is the splitting of water to hydrogen and oxygen, our contemporary focus is on the conversion of halides (Br^-, Cl^-) to the corresponding halogens (Cl_2, Br_2). Additional benefits of this approach are that it also allows for: a) green and safe procedures for bromination/chlorination reactions by avoiding the use of corrosive and toxic bromine/chlorine; b) direct production of bromine from sea water, rather than the industrial two-step procedure that starts with the production of chlorine gas; c) treatment of industrial waste water; and d) decontamination/purification of drinking water.
Leading reference: *Angew. Chem. Int. Ed.* **2015**, *54*, 12370.

Highly motivated candidates with strong background in Chemistry, Material Science, Biotechnology and related fields are encouraged to contact Professor Zeev Gross at chr10zg@technion.ac.il