

The goal of BISfuel is to construct a complete artificial photosynthetic system for solar-powered production of fuels such as hydrogen via water splitting. Design principles are drawn from the fundamental concepts that underlie photosynthesis – the natural energy conversion process responsible for fossil fuels such as coal, oil and natural gas.



RESEARCH PLAN AND DIRECTIONS

The chemistry of natural photosynthetic reaction centers, water oxidation proteins, and hydrogen-producing enzymes is being incorporated into nanoscale artificial constructs that oxidize water and make hydrogen and oxygen using sunlight. Hydrogen is vital for production of liquid fuels such as gasoline, and can be employed for making renewable fuels from carbon dioxide, or as an energy source on its own.