

Introduction to Completed Project Reports

Five GCEP projects reached completion in 2006 in the areas of hydrogen, advanced combustion, and CO₂ storage.

In the area of hydrogen, Professor Fritz B. Prinz has developed nanoscale sensors to monitor the electro-chemistry of hydrogen production in microbes. In another effort in the hydrogen area, Professor Prinz has established characterization techniques utilizing nanoscale platinum electrodes and atomic force microscopy impedance imaging to allow highly localize measurements of electrochemical properties, including those of PEM fuel cells.

In the area of advanced combustion, Professor Craig T. Bowman has developed and experimentally validated detailed models of combustion chemistry for use in modeling low-irreversibility combustion engines. Also in the area of advanced combustion, Professor David M. Golden has built information infrastructure to consolidate and standardize combustion science models and data.

In the area of CO₂ storage, Professors Franklin M. Orr and Anthony R. Kavscek have developed efficient reservoir simulation tools to calculate how injected CO₂ will flow in oil and gas reservoirs, coalbeds, and saline aquifers.

Results and accomplishments for each completed project are detailed in the following reports.