High Temperature Thermochemical Conversion: Coal to Hydrogen and Sunlight to Fuel

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**Abstract:** The amount of solar energy striking a 500 x 500 kilometer area of the earth can meet the current energy demand of the entire planet. Because the best locations for harnessing solar energy are far from urban centers, storage facilities are an important factor to making solar energy cost effective. Dr. Klausner will discuss a novel dual cavity, windowless, high temperature chemical reactor that converts concentrated solar thermal energy to Syngas, which is under development at the University of Florida. Syngas will use an iron-based non-volatile metal oxide looping processes as a precursor for clean and carbon neutral synthetic hydrocarbon fuels such as methanol, methane, or synthetic petroleum.

**BIO:** Dr. James Klausner holds the Ebaugh Chair in the Department of Mechanical and Aerospace Engineering at the University of Florida. His research has focused on the fundamental physics governing the mass and energy transport associated with multiphase energy systems. He is a Fellow of the American Society of Mechanical Engineers and is a past Chair of the ASME Heat Transfer Division.

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