

**Date: September 26**

Time: 11:00 AM

Location: Maryland Hall 110

Speaker: Dr. James W. Lee

Algenol Biofuels, Inc. and WSE, Johns Hopkins University

Title: *"Energy and Environment of Tomorrow: Biofuels and Global Carbon Sequestration"*

## **Abstract**

The increasing anthropogenic CO<sub>2</sub> emission and global warming have challenged the United States and other countries to find new and better ways to meet the world's increasing needs for energy while reducing greenhouse gases. The CO<sub>2</sub> emission from fossil-fuel use has been rapidly growing and it reached 7.9 gigatonnes of carbon per year (GtC y<sup>-1</sup>) in 2005.

Consequently, the mean global atmospheric CO<sub>2</sub> concentration has increased from 280 ppm in the 1700s to 380ppm in 2005 at a progressively faster rate. The CO<sub>2</sub> emissions from fossil-fuel use are now (2008) approaching about 8.4 GtC y<sup>-1</sup>. This is a massive energy and environmental problem that could impact all walks of life on Earth. Because it is such a massive and urgent problem on a global scale, a serious question has been raised: "Can advances in science and technology prevent global warming?" This seminar will cover a brief review of a biomass-pyrolysis "carbon-negative" energy approach for char and biofuel production, which might be able to provide a positive answer to this question important to the well being of all people on Earth. In addition, possible alternative approaches for biofuel production such as photobiological hydrogen production will also be discussed.