



AIAA IEEE(AES) Joint Section Meeting

Thursday, January 28, 2016

Bon Calayag
Senior Program Manager
Orbital ATK - New York Operations

“Supersonic Post-Combustion Inertial CO₂ Extraction System”

Location: Bethpage Public Library
47 Powell Avenue
Bethpage, NY 11714

RESERVATIONS REQUESTED
RSVP BY Jan. 27, 2016
davidsparis@twc.com
or (516) 458-8593

Time: 6:00 PM Social Time
6:30 PM Pizza
7:00 PM Presentation

Cost for Pizza: \$5, Members and Guests
Free, for Students

Coal-fired power plants remain an important provider of electricity in the U.S., currently accounting for nearly 50% of generated electricity. But the best coal produces 83% more CO₂ per generated kilowatt-hour than natural gas. While coal is still an abundant and cheap resource, the pressure to reduce CO₂ emissions has led to research on a number of methods to produce clean coal power plants. One promising new method is being developed by Orbital ATK and ACENT Laboratories. This post-combustion method for CO₂ capture, known as the Inertial CO₂ Extraction System (ICES), utilizes a unique aero-thermodynamic separation device derived from aerospace applications. Flue gas from coal burning power plants is directed to a converging-diverging nozzle and expanded to supersonic velocities. This inertial process converts pressure and temperature into kinetic energy. The rapid temperature and pressure decrease de-sublimates the CO₂ which is then collected as dry ice. The CO₂ can subsequently be allowed to vaporize to pipeline pressures for transport and storage. This system has no moving parts and could be installed at half the cost of current carbon capture and storage technologies.

Bonifacio Calayag is the Senior Program Manager for ICES at Orbital-ATK's New York Facility in Ronkonkoma, previously ATK-GASL, and before that GASL, which was formed in 1956 by Antonio Ferri. Previously, Bon was the ATK GASL program manager for the AFRL X-51 Engine Development and Vehicle Integration Program and program manager for the High Speed Strike Weapon, Hypersonic Facility Improvement and Advanced Design Concept Programs. Bon has a BS in physics, a BE in mechanical engineering and a MS in Mechanical Engineering and is a Certified Project Management Professional.

Directions: The library is west of Route 135 in Bethpage. Take Route 135 to Exit 8, then West on Powell Ave. for about 0.25 miles. The library is on the south side of the street. Park across Powell Ave., opposite the library.