University of Hawai`i at Mānoa

Hawai`i Natural Energy Institute

School of Ocean & Earth Science & Technology

Special Seminar
Characterization of products and residues from pyrolysis, gasification and combustion (beyond the range of gas chromatography)

The presentation will focus on the development of analytical chemistry techniques capable to determining properties such as average molecular mass, molecular mass distribution and the identification of structural features in hydrocarbon materials not amenable to gas chromatography. The analytical methods to be discussed are laser desorption / ionization mass spectroscopy (LD-MS), size exclusion chromatography (SEC), nuclear magnetic resonance spectroscopy (NMR) and UV-fluorescence spectroscopy (UV-F).

The analytical approach that was developed has been shown to be suitable for characterizing different types (classes) of complex hydrocarbon mixtures including oils, tars, maltenes, asphaltenes and pitches from coal, biomass, petroleum and bitumen thermo-chemical processes. The approach will be demonstrated by showing its application to the study, understanding and optimization of a commercial pyrolysis based process.

In addition, a brief summary will be given of the experimental facilities (reactor types) and activities at the groups I used to work with at Imperial College London and the European Commissions Institute for Energy.

by
Dr. Trevor Morgan
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School of Ocean and Earth Science and Technology
University of Hawai‘i at Manoa

Wednesday, April 25, 2012
1:00 – 2:00 pm
POST Building, Room 121

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