CRF News Notes – July/August #1

CRF researchers make significant contributions to the Laser Diagnostics in Combustion conference

Tom Settersten, manager of the Combustion Chemistry and Diagnostics Department, chaired the biennial Laser Diagnostics in Combustion Gordon Research Conference [http://www.grc.org/programs.aspx?year=2013&program=laserdiag], held August 11-16 in New Hampshire. Former CRF manager, Mark Linne (now director of the Combustion Engine Research Center at Chalmers University), who was vice-Chair for this meeting, will chair the next conference in 2015 with assistance from Hope Michelsen, who was elected to be the next vice-Chair. Three CRF researchers gave invited talks: Jonathan Frank, "Developments and opportunities in imaging diagnostics from 3-D velocity field measurements to x-ray spectroscopy"; Hope Michelsen, "Effects of Soot Composition and Morphology on Laser Diagnostics: Experimental Artifacts or Useful Tools?"; and Lyle Pickett (0862), “Spray Diagnostics at High Temperature and Pressure.” Alexis Bohlin’s poster, "Two-dimensional gas-phase coherent anti-stokes Raman spectroscopy (2D-CARS): Simultaneous planar imaging and multiplex spectroscopy in a single laser shot" was chosen as one of three “Hot Topics” for the conference. In addition, Chris Kliewer led the discussion on spectroscopy at the Laser Diagnostics in Combustion Gordon-Kenan Research Seminar [http://www.grc.org/programs.aspx?year=2013&program=grs_laser], held in conjunction with the conference on August 10-11.

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CRF paper among most cited *Journal of Physical Chemistry* articles

An article by Oliver Welz, Judit Zádor, John D. Savee, Leonid Sheps, David L. Osborn, and Craig A. Taatjes, “Low-Temperature Combustion Chemistry of n-Butanol: Principal Oxidation Pathways of Hydroxybutyl Radicals,” [http://pubs.acs.org/doi/abs/10.1021/jp403792t] was among the top 20 most-cited articles for the *Journal of Physical Chemistry* A for the month of July. In this paper, the CRF researchers revealed important product pathways in the low-temperature oxidation of n-butanol using synchrotron photoionization mass spectrometry experiments combined with quantum chemical calculations.

“ n-Butanol is a promising next-generation biofuel, and this study is fundamental to the development of accurate and predictive n-butanol combustion models. Combined with CFD calculations, these chemical models form the basis of optimizing the performance of n-butanol in existing and advanced engine designs towards clean and efficient combustion,” explains Oliver.

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