

# THE PERFORMANCE OF GASOLINE FUELS AND SURROGATES IN GASOLINE HCCI COMBUSTION

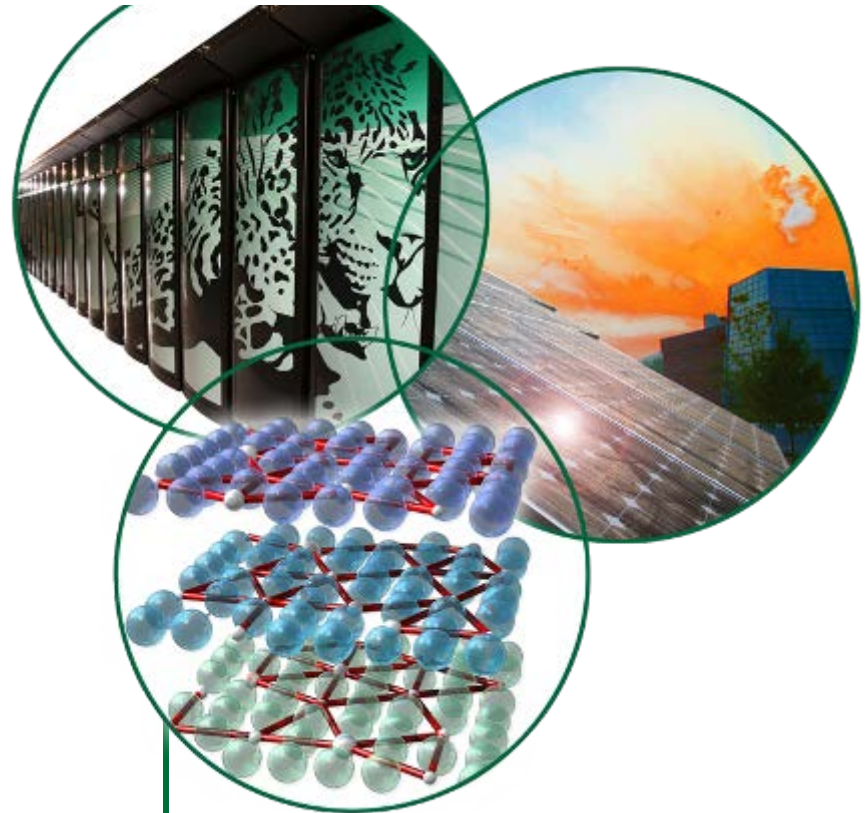
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Wednesday, P-05

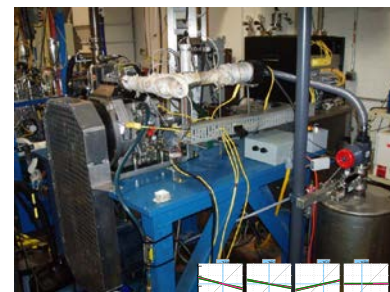


- We have evaluated about **100 diesel and 30 gasoline fuels** in HCCI and conventional combustion
  - In 2009, received a DOE merit review comment... **“lots of data, but need to develop a coherent theory for fuel effects”**

- This lead to a series of analysis tools, analyses, and publications

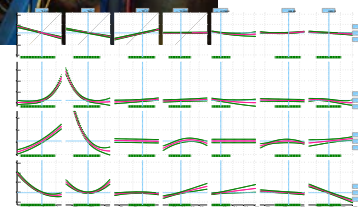
### – Tools

- Generalized tool for principal components analysis
- Generalized tool for Monte Carlo fuel data sets
- AVL Cameo analysis software



### – Fuel related publications:

- Biofuels (SAE 2009-01-1342 and ICSAT 2011)
- FACE fuels (SAE 2009-01-2645)
- Heavy oil derived fuels (SAE 2009-01-2646 and AIChE spring 2011)
- Gasoline (AVFL 13C 2010)
- Gasoline (this poster)



- This poster will describe

- What we have learned (**Don't expect the coherent theory quite yet!**)
- What we recommend, what we are doing next....

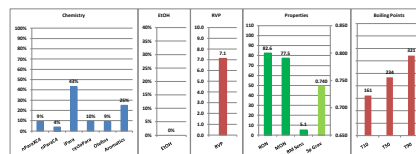


Figure 9.1: Graphical Output of the Fuel Panel (example for average fuel)

