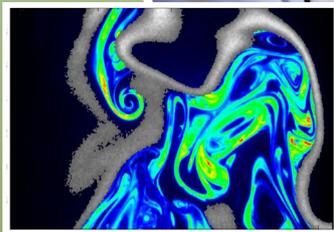


The need for a thorough and basic understanding of combustion and combustion-related processes lies at the heart of CRF research.

Our ability to understand and exploit chemical reactions at the molecular level is key to developing advanced fossil-derived fuels, biofuels, and hydrogen.



For more information  
please contact:

E-mail: [crf@sandia.gov](mailto:crf@sandia.gov)

Website: [www.crf.sandia.gov](http://www.crf.sandia.gov)

## Combustion Research Facility (CRF)

CRF researchers and users have greatly expanded the fundamental knowledge of combustion processes and contributed to significant design innovations for diesel engines, pulse combustors for furnaces, and pollution reduction methods.

### CRF Visiting Researcher Program

The Combustion Research Facility (CRF) is an internationally recognized Department of Energy Office of Science collaborative research facility. The CRF hosts more than 100 collaborators each year, who work side-by-side with staff researchers to develop new research methods and approaches, conduct experiments exploiting new facilities and techniques, and solve high-priority combustion problems.

Working side-by-side with Sandia staff members, visiting researchers develop new research methods and approaches and conduct experiments exploiting the unique facilities and techniques at the CRF.

### Diagnostics

The development and use of laser-based diagnostics is the hallmark of the CRF. The CRF has one of the most comprehensive collections of state-of-the-art and custom-built lasers used for combustion studies anywhere in the world.

The CRF's strengths in laser-based diagnostics have extended beyond the realm of combustion studies. This expertise is fundamental to ongoing efforts in remote sensing, explosives and chemical- and biological-warfare-agent detection, and single-molecule studies of biological systems.

### Engine Combustion

The CRF has been working closely with U.S. engine manufacturers for more than 30 years to increase scientific understanding of internal combustion engine processes affecting efficiency and emissions.

Today, most of our engine research is directed toward building the science base on advanced combustion strategies that is required by industry to develop a new generation of high-efficiency, clean engines.



### Clean Fuels / Power

Sandia has unique experimental facilities dedicated to the biomass conversion research providing insight in the combustion characteristics of solid fuels; enabling research at elevated pressure (up to 20 atm); and enabling emissions research at scales relevant to commercial-scale power generation systems.

Each of these experimental capabilities are coupled to our computational science capabilities that enable us to decouple reaction processes and develop numerical tools for engineering design and optimization.

### Working with the CRF

Potential collaborators of the CRF are encouraged to review the CRF's research programs and contact the manager of the technical area in which they propose to collaborate.

We work with industrial partners on both precompetitive projects that are shared with the community and on proprietary projects that are wholly owned by the sponsor. Precompetitive projects typically involve cost sharing between DOE and industry; while proprietary projects are fully funded by the industrial sponsor.

