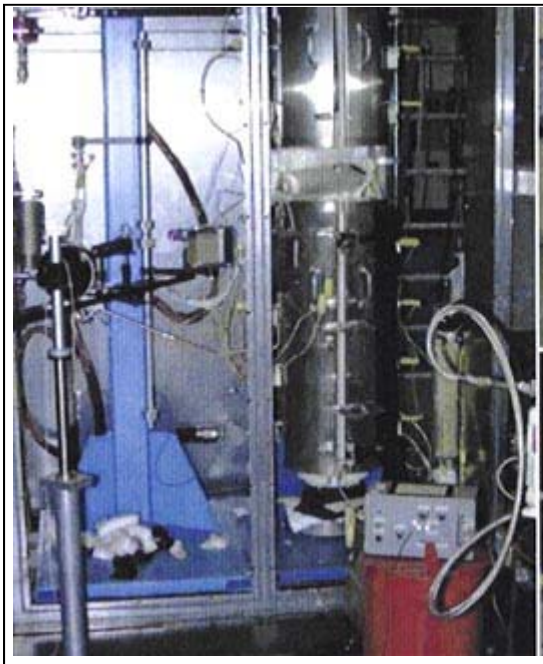
Fuels Development Research Facilities



Description:

A state-of-the-art set of facilities that enables fundamental research, exploratory development and in-house advanced development of fuels, fuel additives and fuel system components for turbine engine powered, scramjet powered hypersonic and advanced combined cycle propulsion systems. Facilities include analytical chemical analysis equipment, bench scale fuel system component simulators, reduced scale fuel system simulators for aircraft and advanced hypersonic vehicles, and advanced modeling and computational systems. The facilities are used to evaluate affordable technologies to increase fuel heat sink, improve operations at low temperatures, improve altitude relight, reduce pollutant emissions and study aircraft fuel system safety. Analytical and simulation tools are used to solve user problems with legacy systems used today.

Purpose:

Perform aerodynamic, aerothermal and aeroelastice research on full scale turbines. Major emphasis areas include:

- Turbine performance (efficiency, loading)
- Turbine cooling (external & internal heat transfer)
- Structural dynamics (unsteady aero forcing & damping)

Products:

Advanced test data of the most advanced turbines developed and being developed under the national IHPTET program.

Availability:

Primarily in-house research, U.S. Government agency use, DoD contractors and dual use/defense conversion use-limited on an as available basis

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