



Glenn Research Center



# Diagnostics Provided by FCF and Experiments

## PI-Specific Diagnostics

- ◆ Velocity
  - Hot Wire Anemometry
  - Laser Doppler Velocimetry
  - Particle-Imaging Velocimetry
- ◆ Radiative Emissions
  - Broadband Thermopiles
  - Filters
- ◆ Temperature/Density
  - Thermocouples
  - Schlieren
  - Shadowgraph
  - Interferometry
- ◆ Species
  - Soot Morphology
  - Laser Absorption
  - Chemical Sensors
- ◆ Flow Vis/Imaging

## Combustion Integrated Rack Diagnostics

### Power, Control

- ◆ Visible Imaging
  - 400-700 nm
  - Digital
  - High resolution/high frame rate
  - Liquid crystal tunable filter
  - Low light level
- ◆ Infrared Imaging
  - 1-5 microns; 8-14 microns
  - Digital
- ◆ Ultraviolet Imaging
  - 250-400 nm
  - Digital
  - Low light level
- ◆ Illumination
  - Coherent Source
  - Noncoherent Sources

### Data

- ◆ Pressure
  - Static Transducers

- ◆ Species
  - Gas Chromatography
  - Soot Volume Fraction
  - Soot Temperature

- ◆ Acceleration
  - Space Acceleration Measurement System

- ◆ Mass Flow rates
  - Fuel, oxidizer