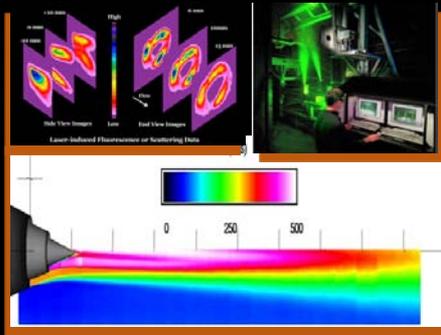


RHI – Optical Instrumentation and NDE Branch

Optical Flow - Diagnostics



Overview

Our data leads to improved designs, validation and verification of systems performance, increased safety and security and reduced design cycle times for core technologies developed at GRC & NASA

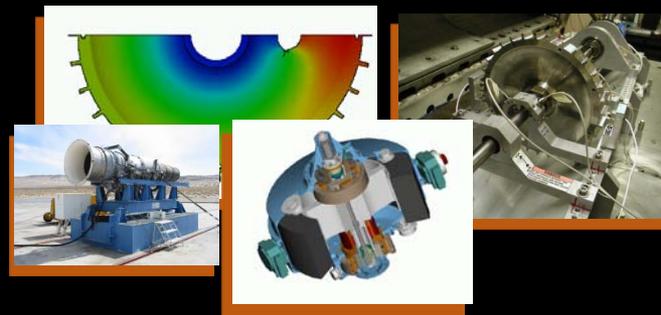
Mobile and Remote



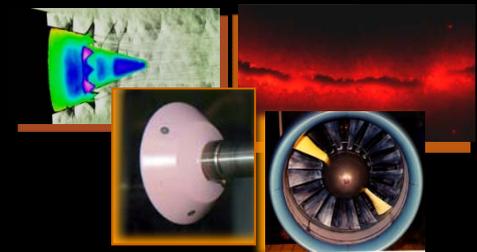
- Mobile sensing platforms
- Autonomous radio linked and rad. hard
- Flight electronics; MISSE 5-8; TACSAT- 4
- Smart power system for lunar rovers
- Communications over power lines
- In-situ tests and measurement systems for exploration and science

- 3D Particle Imaging Velocimetry
- Combustion Diagnostics
- Shock Sensing & Mass Flux Meas.
- Background Oriented Schlieren
- Rayleigh Scattering for Simultaneous Density Velocity & Temperature Meas.
- Flow fields around aeroshell structures
- Flow visualization

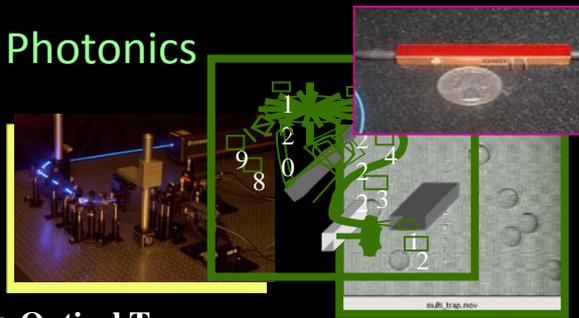
NDE & Propulsion Health Monitoring



Optical Surface-Diagnostics



Photonics



- Optical Tweezers
- Self Diagnostics Accelerometers
- Fiber optic sensors
- Light driven actuators
- Quantum entanglement
- Secure optical communications
- Hyperspectral Imagers

- Ultrasonics and acoustics NDE
- Thermographic and tomographic
- Capacitance and piezo patches sensors
- Wireless and wired techniques
- Component quality/performance certification
- Integrated signal and image processing software

- Temperature sensitive paint
- Pressure sensitive paint
- Smart coatings
- Retro-propulsion aeroshell testing