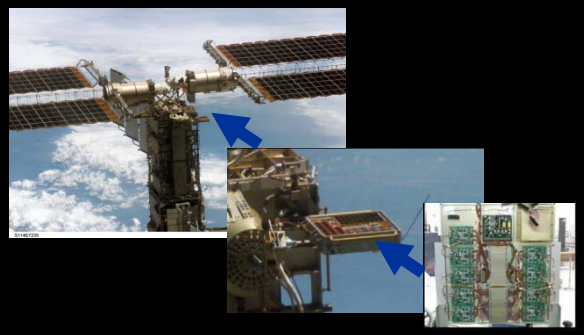
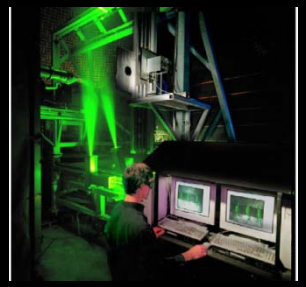
RHI - Optical Instrumentation and NDE

Mission

We compete to be the customer's first choice in NASA for innovative instrumentation and cost effective solutions to research and development challenges in optical/photonic measurement systems, in space and airborne flight electronics and mobile platforms, and in nondestructive evaluation and propulsion health monitoring methods.



Autonomous Radio Linked and Radiation Hard Electronics for Solar Cell Experiments



Particle Imaging Velocimetry for Jet Noise Characterization

Micro Computed Tomography for Materials Characterization

Selected Facilities

- Particle Imaging Velocimetry
- Smart Luminescent Coatings
- Rayleigh Scattering
- Mobile Sensing Platforms
- Flight Electronics Lab
- Propulsion Health Monitoring
- Quantum Sensing/Communication
- Immersion and contact Ultrasonics
- Thermal Imaging and Thermoelastics
- Micro Computed Tomography
- Photonics Component Manufacturing

Focus Areas

- Optical Flow Path Measurements
- Optical Surface Measurements
- Propulsion Health Monitoring and Physics Based Modeling
- NDE Methods Development
- Flight Electronics Development
- Robotics Technology Development
- Nanophotonics Research
- Hi Resolution Hyperspectral Imaging

Selected Accomplishments

- 1400 ºC temperature sensitive paint sensor- 2005
- ASTM Standards for NDE Methods- 1990-2000's
- Mobile sensing platforms and rovers- 2004-2009
- Active magnetic bearing diagnostic system- 2007
- Self-diagnostics accelerometers-2005-2009
- Optical diagnostics: density, temperature, velocity, mass Flux and shocks sensing measurements-2009
- State-of-the-art thermal, ultrasonics, radiographic and tomographic modalities - 2000's
- Thermal Barrier Coatings that are self-indicating for delamination progression were achieved by incorporating sub layer Eu-doping - GRC 2007
- 4+ R&D100 and 4 GRC Best Paper Awards
- 10's of Societies/Journals Best Papers Awards