

Resistojet Thruster Plume Diagnostics

Propulsion and attitude control of cube satellites (cubesats) is often accomplished using resistojets. Researchers at NRL are developing models to predict the efficiency of resistojets, and experimental data are needed to inform and validate these models. For this postdoctoral opportunity, research will focus on development and use of optical-diagnostic measurement systems to interrogate the plume of a small resistojets thruster under vacuum conditions. Planned measurements include temperature using Raman spectroscopy and velocity using either Mach-Zehnder or Fabry-Perot interferometry. A holographic spectrograph, an EM-CCD, multiple lasers, and supporting optics and instrumentation are available for this research. In particular, there is a need for a postdoc with experience setting up and/or employing interferometric systems, though anyone with related optical-diagnostic experience is encouraged to apply. Full information about ongoing research in our section (Code 6185, Combustion Dynamics & Modeling) can be found at <http://www.nrl.navy.mil/chemistry/research/6180/6185> on the World Wide Web.