



NASA Glenn Experience in High Power Electric Propulsion

Propulsion System Technology and Development

- 12.5 kW HERMeS Hall Thruster/PPU for NASA Solar Electric Propulsion Technology Demonstration Mission (SEP TDM)
- 7 kW NEXT Ion Propulsion System for NASA Science Missions
- Research in Annular Ion and Nested Hall Thruster Technology for High Power Applications
- Jupiter Icy Moons Orbiter (JIMO) Program – 2000 to 2005
 - 20-50 kW HiPEP Ion Propulsion System
 - 50 kW Hall Thruster
 - High Voltage PPU



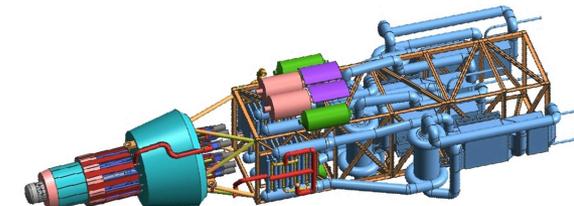
HERMeS Thruster under Test at NASA GRC



Annular Ion Thruster under Test at NASA GRC

Power System Technology and Development

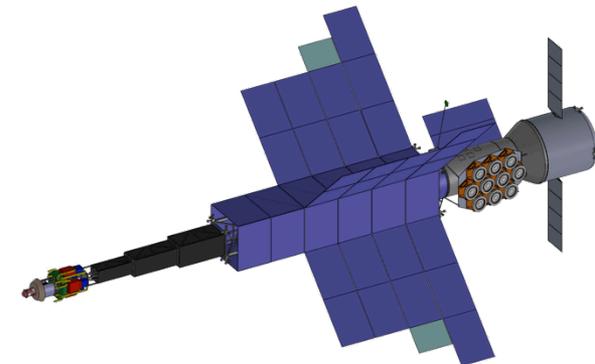
- 1 to 3 kW Kilopower Reactor Power System
- 40 kW Stirling-based Nuclear Surface Power System
- Heat Pipe Radiator Technology Development
- JIMO Program – 2000 to 2005
 - 100 kW-class Reactor Power Systems with Gas, Liquid Metal or Heat Pipe Cooling
 - Brayton, Stirling, Rankine and Thermoelectric Power Conversion Technologies



200 kW Gas-Cooled JIMO Reactor Power System with Brayton Cycle Energy Conversion

System Analysis and Test

- COMPASS Collaborative Engineering Design Studies
- Extensive Electric Propulsion and Power Space Environment Test Facilities at Lewis Field and Plum Brook Station, particularly VF 5 and 6



2.5 MW Nuclear Electric Propulsion (NEP) Spacecraft for Piloted Mars Mission