NASA SBIR/STTR Technologies

Proposal No. S4.07-9076 - Pulsed Electrogasdynamic Thruster for Attitude Control and Orbit Maneuver

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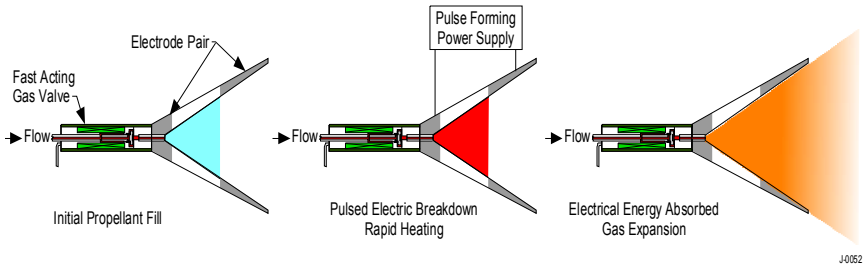
Identification and Significance of Innovation

A new pulsed electric thruster, named "pulsed electrogasdynamic (PEG) thruster," for spacecraft mobility is proposed. In this thruster the propellant gas is accelerated gasdynamically by an innovative use of electric power. The PEG thruster generates thrust from 0.1 to 100 mN with the specific impulse (Isp) of 1000 sec, and at the electric efficiency of 60%.

Expected TRL Range at the end of Contract (1-9): 4~5



Technical Objectives and Work Plan

Our technical objectives are:

1. Establish proof of concept;
2. Develop an engineering model; and
3. Develop a proto-flight model of the proposed thruster system.

The specific tasks to be conducted in Phase I program are:

1. Develop a lab model of the pulsed electrogasdynamic thruster;
2. Conduct laboratory tests; and
3. Develop a conceptual model for performance evaluation.

NASA and Non-NASA Applications

- Satellite Mobility
  - rendezvous
  - orbit change
  - constellation formation
- Spacecraft Orbit Transfer
- Station Keeping
- Attitude Control

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NON-PROPRIETARY DATA