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Attachment 5 to PRDA 04-01-PKT:

AFRL/PRSS Electric Propulsion Facilities and Capabilities



Frank Gulczinski

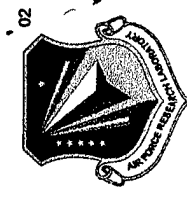
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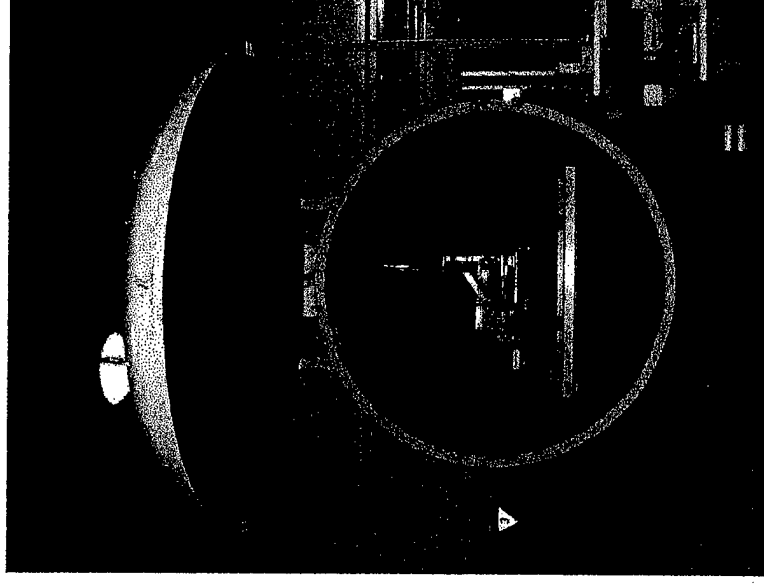
Laboratory Capabilities:

Electric propulsion development



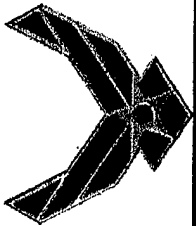
Chamber 2:

- micro-Newton thrust stand
- Range: 10 micro-N to 200 micro-N
- Fully automated thruster operation
- Complete data acquisition system
- 2.8 m diameter, 4 m length
- Pumping speed 9,000 l/s (Xe)
 - Two 60 cm diffusion pumps
 - Large mechanical pump train
 - Base pressure: 1×10^{-6} torr



USED FOR: PPT's, micro-PPT's, small Hall effect thrusters

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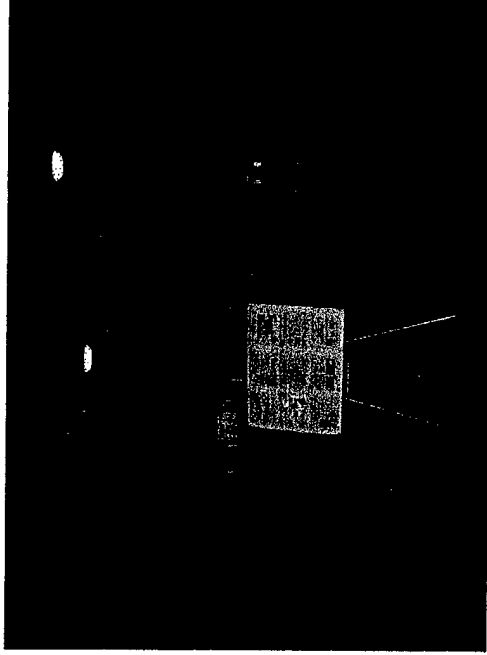
Laboratory Capabilities:

Electric propulsion development



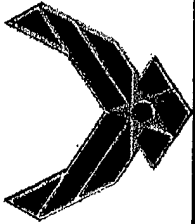
Chamber 3:

- milli-Newton thrust stand
 - Range: 0.01 N to 1 N
- Fully automated thruster operation
- Complete data acquisition system
- 3.2 m diameter, 10 m length
- Pumping speed 135,000 l/s (Xe)
 - Cryogenic panels
 - Base Pressure: 1×10^{-7} torr



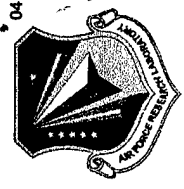
USED FOR: large Hall effect thrusters

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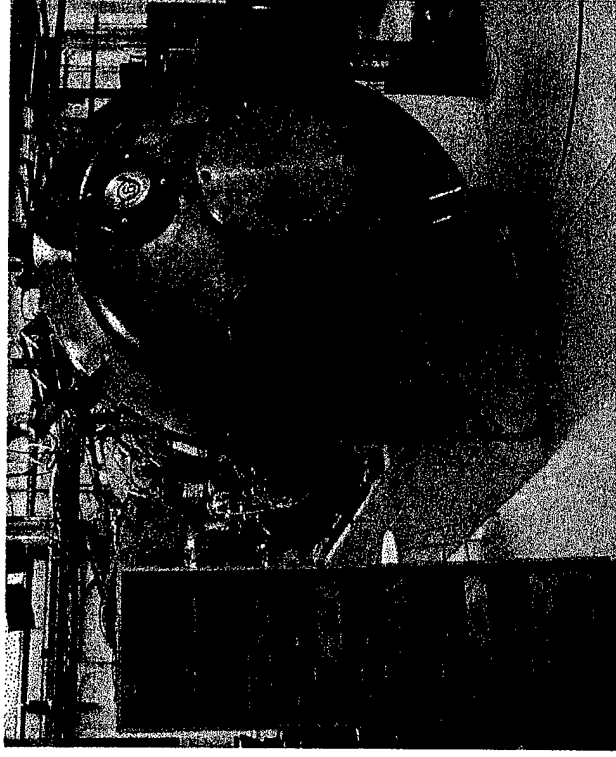
Laboratory Capabilities:

Electric propulsion development



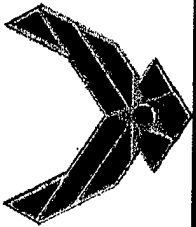
Chamber 6:

- Partially automated thruster operation(s)
- Complete data acquisition system
- 1.8 m diameter, 3 m length
- Pumping speed 32,000 l/s (Xe)
 - Cryogenic panels
 - Base pressure range: 1×10^{-7} torr



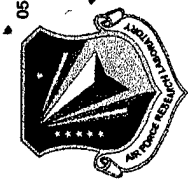
USED FOR: low to mid power Hall thrusters

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Laboratory Capabilities:

Electric propulsion development



Chambers 8, 9 and 10:

- Fully automated thruster operation(s)
- Complete data acquisition system
- 0.5 m diameter, 1 m height
- Pumping speed 300 l/s (N₂)
 - 15 cm turbomolecular pump
 - Base pressure range: 1x10⁻⁶ torr



USED FOR: micro-PPT's, cathodes

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