
EU FP7 Grant n. 218862
Helicon Plasma Hydrazine.
combined micro
(HPH.com)
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Coordinator:
University of Padua, Italy
ONERA
THE FRENCH AEROSPACE LAB
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Space
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di precisione
Rovsing
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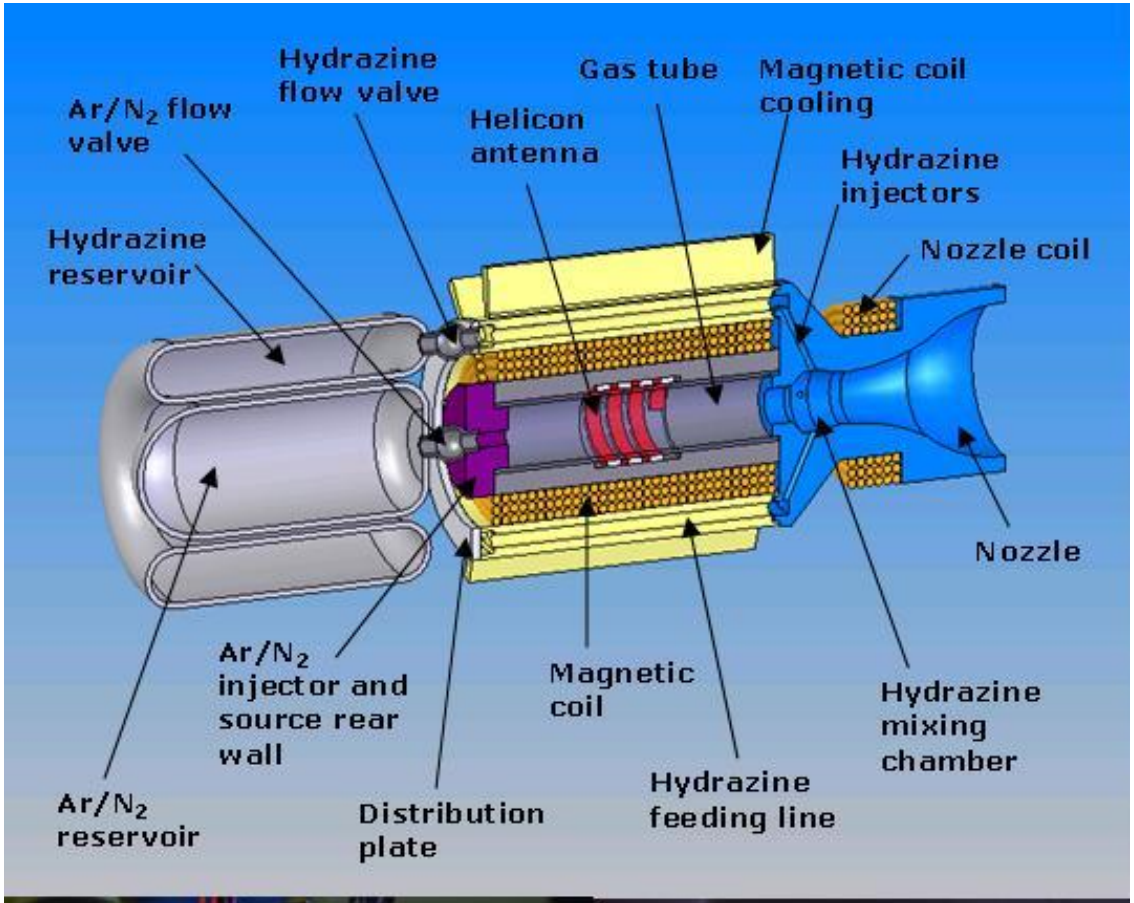
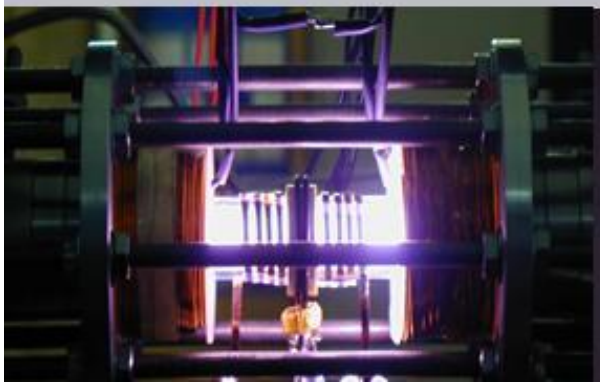
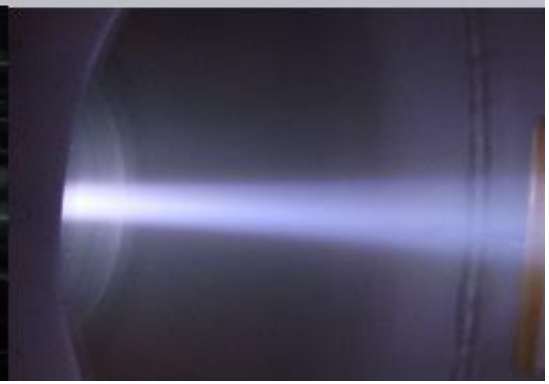






- Optimization and development a **new type of space plasma thruster** based on helicon-radio-frequency technology

Target Performances		
	Mode I Plasma	**Mode II Plasma + 2nd Prop**
Power (W)	**50 W**	**50**
Thrust (mN)	**1.5 mN**	**20 mN**
Isp (s)	**>1200**	**>400**

HPH.com Science and Technology Objectives

1) To set-up and develop high simulation capability.

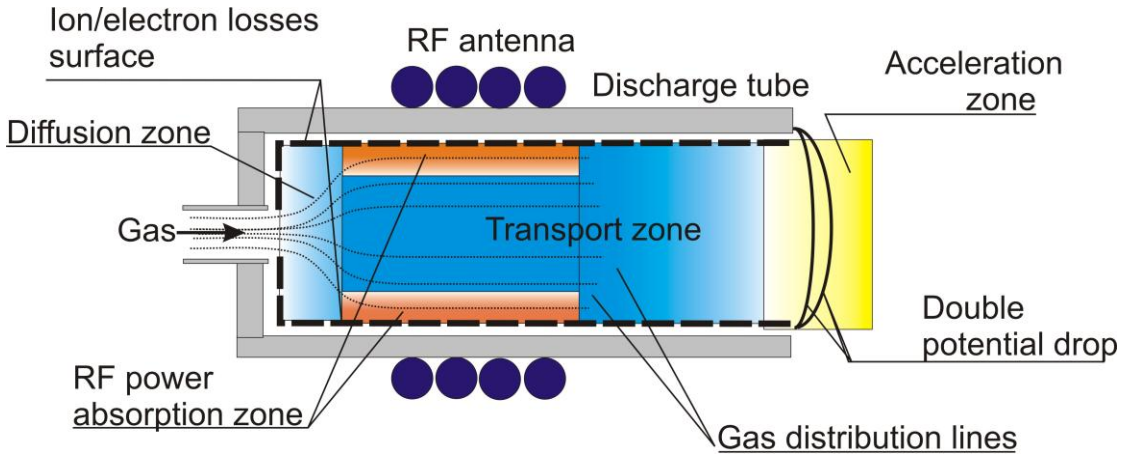
2) To develop a ground testing experiment

3) To design and test a helicon-plasma thruster.

4) To analyze and design a booster section.

5) Application on-board a mini-satellite

6) To explore applications to innovative missions

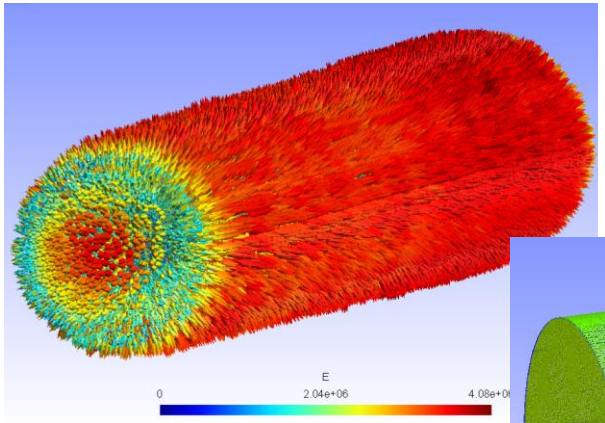


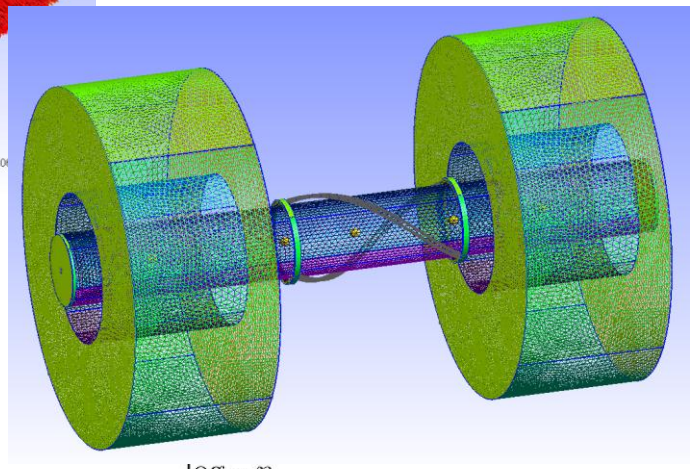
Advanced simulations and physics investigation

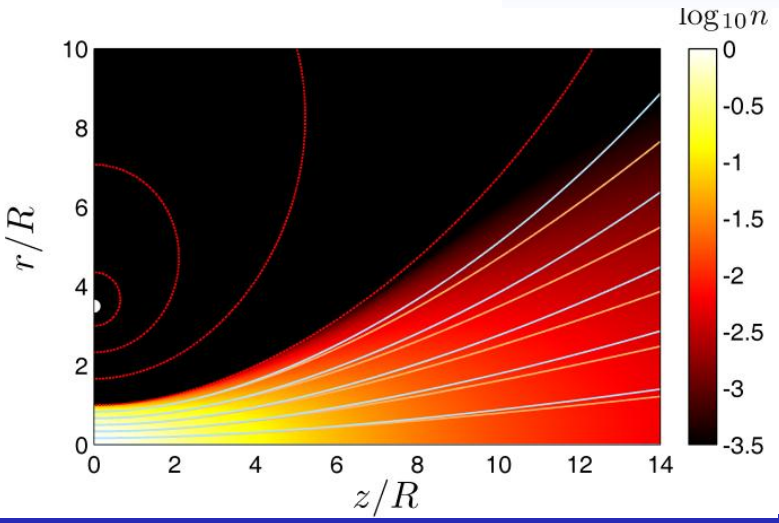
Development of advanced 3D codes to simulate into details plasma thrusters and plasma source.

Development of advanced codes to design plasma thrusters.

Development of codes to simulates plasma expansion and acceleration into vacuum





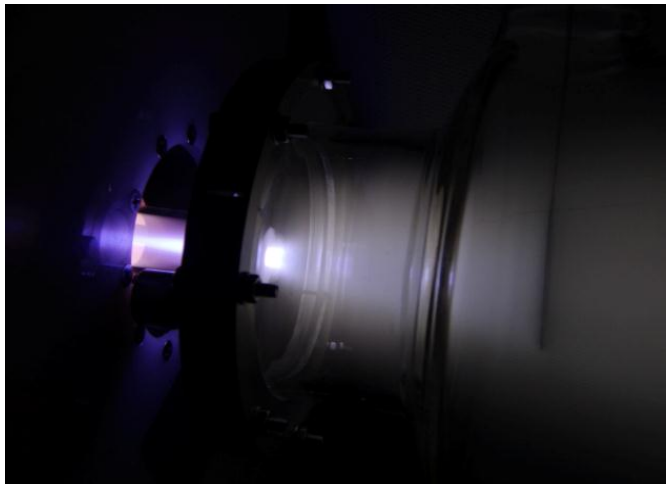


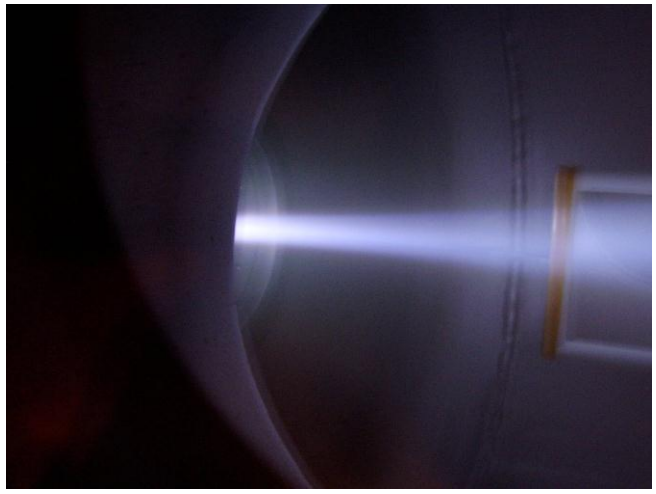
Detailed experimental characterization

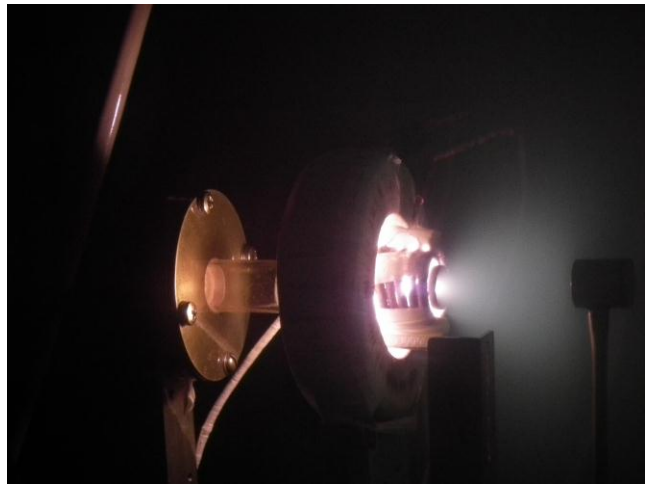
Test bed at UNIPD-CISAS KhAI and ONERA

Detailed diagnostic set-up

Testing of Laboratory model, Engineering model
Qualification model







Exploitation

Space field

- Development of innovative low cost / low power plasma thrusters to propulse and control mini-satellite
- Advanced missions

Energy / Advanced materials field

- Development of innovative plasma sources for advanced plasma processes
- Development of advanced codes for optimization of plasma process (e.g. production of solar cells, surface treatment, surface modifications, etc.)