



Universidad Carlos III de Madrid (UC3M, [www.uc3m.es](http://www.uc3m.es)) invites applications to fill PhD position **ZARATHUSTRA-D2: Design and characterization of a Magnetic Arch EPT**

### Description and objectives:

Electrodeless plasma thrusters (EPTs), such as the Helicon thruster and the ECR thruster, promise many advantages over traditional electric space propulsion systems currently in the market. However, current thruster geometries have inherent limitations that impair performance. Seeking new thruster designs, magnetic topologies, and operating principles is essential to unblock EPT development and pave the way toward a new generation of efficient and versatile space plasma thrusters.

The selected candidate will design, build and test a thruster prototype based on the “Magnetic Arch Thruster” concept (see patent ES2733773), to assess its potential advantages with respect to existing cylindrical EPT geometries using state-of-the-art lab equipment and diagnostic systems. The contract will be funded by the recently awarded **ERC Starting Grant project ZARATHUSTRA** (Revolutionizing advanced electrodeless plasma thrusters for space transportation). The candidate will join the Space Propulsion and Plasmas Team (EP2, <http://ep2.uc3m.es/>) at Universidad Carlos III de Madrid, and collaborate closely with other young PhD students and researchers fully dedicated to the project under the supervision of Dr. M. Merino.

### Requirements and desirable profile:

- Young MSc holder (or MSc student with 60 ECTS passed at contract’s signature)
- Background in the following disciplines: Aerospace Engineering, Plasma Physics, Plasma Diagnostics, Vacuum Technology, Microwaves & RF, and/or Electronics. Laboratory experience is appreciated. Excellent candidates from other disciplines are also invited to apply.
- Outstanding academic record; critical & creative thinking.
- International experience; team-working and communications skills.
- Good proficiency in English (oral & written).
- Ability to deal independently and proactively with scientific and engineering challenges.

### What we offer:

- 3-year contract (with optional 1-year extension); annual gross salary in the 20k – 22k € range.
- Become part of a young, dynamic, highly qualified, collaborative team.
- Flexible working environment and schedule.
- Opportunity to travel to international conferences to present research activities.
- Opportunity to carry out research internships abroad.
- Health coverage under the National Health System.

### How to apply:

Interested candidates must send their applications to [mario.merino@uc3m.es](mailto:mario.merino@uc3m.es) indicating in the e-mail subject the reference “**ZARATHUSTRA-D2**,” and attaching in pdf format the following documents:

- CV (max. 4 pages), including relevant professional experience and knowledge.
- Copy of diploma and grades from previous university studies.
- A motivation letter of experience, interests, and research goals (max. 1 page).
- The contact information for two references (will be contacted during the hiring process).

Submission of applications is due by **October 15th, 2020**. Early applications are strongly encouraged, while later applications may be considered until the vacancy is occupied. Contract will begin in January 2021, though earlier/later start date can be agreed. More information at: <http://mariomerino.uc3m.es/>.