



**Eduardo Ahedo Galilea**

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**Professional Career Summary**

PhD in aeronautical engineering from the Universidad Politécnica de Madrid. Fulbright Scholar and Visiting Scientist at the Massachusetts Institute of Technology in different periods. Professor and Chair of Excellence at UC3M (2013), where he has led the full development of the new Department of Aerospace Engineering, highly international and competitive, which he continues to head.

World-recognized expert in Electric Space Propulsion Technologies, which, in the New Space age, have superseded chemical rockets to propel spacecraft. Author with seminal contributions to the physics of Hall thrusters, propulsive magnetic nozzles, electrodeless thrusters, and expansion of rarified plasma jets. Active researcher on developing innovative plasma prototypes, envisaging plasma-based techniques for space debris removal, and achieving predictive tools for speeding up thruster qualification tests. Co-inventor, with professors Sanmartín and Martínez-Sánchez, of the collecting electrodynamic tether and their application to satellite operation and deorbiting.

Founder of the EP2 research group which, with more than 20 researchers, is today the largest European university group in investigating plasma propulsion. Development leader of a unique vacuum facility in Spain for testing plasma thrusters. Researcher with large experience in technological collaborative projects of the Framework Programs of the European Commission and the European Space Agency, leading activities on developing models and simulation tools of plasma thrusters and their transfer to the aerospace industrial sector. Active promoter of synergistic research on magnetically confined plasmas for propulsion and fusion, centered on the common challenging subjects of turbulent transport, plasma-material interaction, and wave-based plasma heating.

Author of near 100 papers in prestigious journals and 160 in conference proceedings, researcher in about 60 competitive projects, co-inventor of one patent on steerable magnetic nozzle for thrust control, and supervisor of more than 20 doctoral Theses.

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**Current position**

Chair of Excellence at Universidad Carlos III de Madrid  
Head of the Aerospace Engineering Department  
Head of the research group EP2 (Equipo de Propulsión Espacial y Plasmas)

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**Academic positions**

1982-1988	Assistant Professor at UPM– ETSIA
1988-1992	Associate Professor (temporary) at UPM– ETSIA
1992-2007	Associate Professor at UPM– ETSIA
1999-2004	Deputy Director for External Relations at UPM – ETSIA
2007-2013	Full Professor at Universidad Politécnica de Madrid (UPM)– ETSIA
2013-present	Full Professor at Universidad Carlos III de Madrid
2014-2018,	
2021-2023	Head of the Bioengineering and Aerospace Engineering Department - UC3M
2023-present	Head of the Aerospace Engineering Department - UC3M
2014-2021	Head of the Aerospace Engineering Research Group at UC3M
2013-present	Head of the Plasma & Space Propulsion Team (EP2) at UC3M

**Education**

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- 1982     **BSc+MSc** in Aeronautical Engineering (6-year programme)  
Universidad Politécnica de Madrid
- 1988     **PhD** in Aeronautical Engineering  
Universidad Politécnica de Madrid  
**Thesis:** *Absorción de resonancia y presión de radiación en plasmas producidos por luz láser (Resonance absorption and radiation pressure in laser-produced plasmas)*

**Fellowships and awards**

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- 1983     Beca de Formación de Personal Investigador, Ministerio de Educación  
(Research Training Scholarship)
- 1988     Premio Extraordinario de Doctorado, UPM  
(Outstanding PhD award)
- 1989     Beac Fulbright posdoctoral, Ministerio de Educación  
(Fulbright Postdoctoral Grant)
- 2007     Becas para estancia sabática de 1 año, UPM y Ministerio de Educación  
(One-year sabbatical Stay Scholarships)
- 2007     Beca de Movilidad del Ministerio para estancia de un año en el extranjero
- 2010     European Physical Society Award to 20th ESCAMPIG Best poster (shared with M. Merino)
- 2013     Cátedra de Excelencia Permanente, UC3M y Banco Santander  
(Chair of Excellence)
- 2014-18  Member of Advisory Board of H2020 EPIC Support Program
- 2014     Premio de la Fundación Sener a la Dirección de Mejor Tesis Doctoral  
(Fundacion Sener Award for Supervisor of Best PhD Thesis)
- 2015     Accesit en la XII Competición ActuaUPM de Creación de Empresas (coautores: M. Merino,  
J. Navarro)  
(Accesit in the XII ActuaUPM Business Creation Competition)
- 2015     Premio de la Electric Rocket Propulsion Society a la mejor ponencia en el 32nd IEPC (coautor  
M. Merino)  
(Electric Rocket Propulsion Society Award for Best Paper at the 32nd IEPC)

**Stays in other institutions**

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1. INSTITUTION: Massachusetts Institute of Technology (MIT), Cambridge, USA  
YEAR & DURATION 1989-1990, 12 months  
TOPIC: Plasma-tether electrodynamic interaction
2. INSTITUTION: Max-Planck Institut fur Quantenoptik, Garching, Alemania  
YEAR & DURATION 1992, 6 weeks  
TOPIC: Radiation pressure effects from non-polarized laser light on a plasma corona
3. INSTITUTION: MIT, Cambridge, USA  
YEAR & DURATION 1993, 5 weeks  
TOPIC: Ionization on plasma contactors
4. INSTITUTION: MIT, Cambridge, USA  
YEAR & DURATION 1997, 5 weeks  
TOPIC: Hall plasma thrusters
5. INSTITUTION: Plasma Science and Fusion Center, MIT, Cambridge, USA  
YEAR & DURATION 2007-08, 5 months  
TOPIC: Fluid models for weakly collisional plasmas
6. INSTITUTION: Dep. of Aeronautics and Astronautics, MITCambridge, USA  
YEAR & DURATION 2008, 7 months  
TOPIC: Plasma propulsion
7. INSTITUTION: Dep. of Aeronautics and Astronautics, MIT, Cambridge, USA  
YEAR & DURATION 2009, 2 months  
TOPIC: Plasma propulsion
8. INSTITUTION: Dep. of Aeronautics and Astronautics, MIT, Cambridge, USA  
YEAR & DURATION 2010, 1.5 months

- TOPIC: Plasma propulsion
9. INSTITUTION: Dep. of Aeronautics and Astronautics, MIT, Cambridge, USA  
YEAR & DURATION 2011, 1 month  
TOPIC: Plasma propulsion
  10. INSTITUTION: Plasma Science and Fusion Center, MIT, Cambridge, USA  
YEAR & DURATION 2012, 1 month  
TOPIC: Modeling of magnetic nozzles
  11. INSTITUTION: Dep. of Aeronautics and Astronautics, MIT, Cambridge, USA  
YEAR & DURATION 2014, 1 month  
TOPIC: Magnetoplasmadynamic Thrusters

### ***Relevant seminars and invited presentations***

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1. TOPIC: Radiation pressure and resonance absorption in laser-produced plasmas  
LOCATION AND DATE: Max-Planck Institut fur Quantenoptik, Garching, Alemania, 08/1992
2. TOPIC: Modelling the plasma discharge in a Hall thruster  
LOCATION AND DATE: Window on Science, MIT, Cambridge, MA, USA, 10/10/2001
3. TOPIC: Modelling the plasma discharge in a Hall thruster  
LOCATION AND DATE: Window on Science, Air Force Research Laboratory, Pasadena, USA, 12/10/2001
4. TOPIC: Miniaturised Hall effect thrusters  
LOCATION AND DATE: Electric Micropropulsion Workshop, Lerici, Italy, 30/05/2002
5. TOPIC: Physics and modelling of the Hall thruster discharge  
LOCATION AND DATE: 4<sup>th</sup> Spacecraft propulsion Conference, Short courses, Sardinia, Italy, 06/06/2004
6. TOPIC: Modeling electron dynamics in Hall discharges  
LOCATION AND DATE: Princeton Plasma Physics Laboratory, Princeton, NJ, USA, 02/10/2008
7. TOPIC: Studies on helicon thruster physics  
LOCATION AND DATE: Massachusetts Institute of Technology, Cambridge, MA, USA, 07/10/2008
8. TOPIC: Magnetic nozzles for plasma thrusters  
LOCATION AND DATE: Dep. Aeronautics Astronautics, MIT, Cambridge, MA, USA, 19/07/2010
9. TOPIC: Research in plasma propulsion  
LOCATION AND DATE: Space Propulsion Laboratory, MIT, Cambridge, MA, USA, 21/07/2010
10. TOPIC: Plasma Space Propulsion  
LOCATION AND DATE: CIEMAT, Madrid, 18/05/2012
11. TOPIC: Plasma Space Propulsion  
LOCATION AND DATE: Erasmus Mundus Fusion-EP Summer Event, El Escorial, Spain, 24/07/2013
12. TOPIC: Plasmas for Space Propulsion  
LOCATION AND DATE: ESAC, Science Seminar, Villanueva de la Cañada, Spain, 09/04/2015

### ***Teaching experience***

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1982-1983	Aerodynamics Aeronautical Engineering Degree, Universidad Politécnica de Madrid (UPM)
1982-2013	Subjects on Applied Mathematics: Calculus, Linear Algebra, Differential Geometry, Mathematical Methods Aeronautical Engineering Degree, UPM
2004-2007	Physics of Hall effect Thrusters Aeronautical Engineering Degree, UPM
2000-2013	Space Electric Propulsion Graduate studies, UPM
2003-2013	Numerical simulation of space plasmas Graduate studies, UPM
2004-2009	Electric Propulsion (in French) Ms de Systèmes de Propulsion Aérospatiale, Supaero, Toulouse, France
2005-2009	Physics of Plasma accelerators (in English) European Master in Aeronautics and Space Technology (Erasmus Mundus) Università di Pisa (2005-06), Universidad Politécnica de Madrid (2007-09)
2008-2012	Space Electric Propulsion

2009-2012	Aeronautical Engineering Degree, Universidad Politécnica de Cataluña Space Electric Propulsion
20013-2016	MSc In Space Technology (2009-12), MSc in Satellite Technology (2010-12), UPM Combustion (in English)
2014-2023	BSc in Aerospace Engineering, Universidad Carlos III de Madrid (UC3M) Combustion and Transport Phenomena (in English)
2015-2023	MSc in Aeronautical Engineering, UC3M Advanced Space Propulsion (in English)
2019-2023	MSc in Aeronautical Engineering, UC3M Space Propulsion (in English)
2021-2022	MSc in Space Engineering, UC3M Advanced Space Propulsion (in English) MSc in Space Engineering, UC3M

### ***Prizes awarded to students for tutored research***

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1. J. M. Gallardo, F. Parra.  
*Accesit of Engineering and Architecture of the I Arquimedes University Contest for Young Researchers, 2002.* Ministry of Education.
2. F. I. Parra Díaz. ‘Actualización y mejora de un código PIC-fluido bidimensional para el flujo de plasma en motores de efecto Hall’. Degree Final Project  
*Foindesa Award 2004*
3. D. Escobar y A. Antón.  
*First Prize of Engineering and Architecture of the IV Arquimedes University Contest for Young Researchers, 2005.* Ministry of Education.
4. Mario Merino Martínez  
*Second Prize of Engineering and Architecture of the IX Arquimedes University Contest for Young Researchers, 2010.* Ministry of Education.
5. Mario Merino Martínez  
*2010 Aerospace Testing & EUCASS Young Aerospace Engineer of the Year Scientific Award.*
6. Mario Merino Martínez.  
*First Prize at 7th PEGASUS-AIAA contest, 2010.*
7. Daniel Carralero Ortiz. PhD Thesis.  
*PhD Outstanding Award 2012*
8. Mario Merino Martínez. PhD Thesis.  
*PhD Outstanding Award 2014*
9. Mario Merino Martínez. PhD Thesis.  
*Fundación SENER Award 2014*
10. Filippo Cichocki. PhD Thesis.  
*PhD Outstanding Award UC3M 2017*

### ***Supervision of PhD Theses***

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1. TITLE: No uniformidades y estabilidad lineal de contactores esféricos en plasmas no magnetizados (Nonuniformities and linear stability of spherical contactors in unmagnetized plasmas)  
STUDENT: M. V. Lapuerta González  
INSTITUTION & DATE: UPM, 1988  
GRADE: Apto ‘cum laude’.
2. TITLE: Electromagnetic Instability Studies in Fusion Plasmas Edge  
STUDENT: Daniel Carralero Ortiz  
CO-SUPERVISOR: Dr. Carlos Hidalgo Vera

- INSTITUTION & DATE: UPM, 2012  
GRADE: Apto 'cum laude'
3. TITLE: Código híbrido avanzado de motores de plasma de efecto Hall (Advanced hybrid code for Hall effect plasma thrusters)  
STUDENT: Robert Santos Gutiérrez  
INSTITUTION & DATE: UPM, 2012  
GRADE: Apto 'cum laude'
  4. TITLE: Toberas magnéticas para motores espaciales de plasma (Magnetic nozzles for space plasma thrusters)  
STUDENT: Mario Merino Martínez  
INSTITUTION & DATE: UPM, 2013  
GRADE: Apto 'cum laude'
  5. TITLE: Electron transport and azimuthal oscillations in Hall thrusters  
STUDENT: Diego Escobar Antón  
INSTITUTION & DATE: UPM, 17/06/2015  
GRADE: Apto 'cum laude'
  6. TITLE: Simulación del Plasma en nuevos propulsores espaciales: El Motor Helicón (Plasma simulation on new space thrusters: the helicon thruster)  
STUDENT: Jaume Navarro Cavallé  
INSTITUTION & DATE: UPM, 01/2017  
GRADE: Sobresaliente 'cum laude'
  7. TITLE: Modeling of physical processes in radio-frequency plasmas  
STUDENT: Bin Tian  
CO-SUPERVISOR: Mario Merino  
INSTITUTION & DATE: UC3M, 25/07/2017  
GRADE: Sobresaliente
  8. TITLE: Analysis of the expansion of a plasma thruster plume into vacuum  
STUDENT: Filippo Cichocki  
CO-SUPERVISOR: Mario Merino  
INSTITUTION & DATE: UC3M, 26/09/2017  
GRADE: Sobresaliente 'cum laude'
  9. TITLE: Fluid modeling and simulation of the electron population in Hall Effect Thrusters with complex magnetic topologies  
STUDENT: Daniel Pérez Grande  
CO-SUPERVISOR: Pablo Fajardo Peña  
INSTITUTION & DATE: UC3M, 18/06/2018  
GRADE: Sobresaliente 'cum laude'
  10. TITLE: Axisymmetric simulation codes for Hall effect thrusters and plasma plumes.  
STUDENT: Adrián Domínguez Vázquez  
CO-SUPERVISOR: Pablo Fajardo Peña  
INSTITUTION & DATE: UC3M, 31/05/2019  
GRADE: Sobresaliente 'cum laude'
  11. TITLE: Physics of plasma plumes accelerated by magnetic nozzles: an experimental and theoretical research  
STUDENT: Sara Correyero Plaza  
CO-SUPERVISOR: Denis Packan (ONERA, France)  
INSTITUTION & DATE: UC3M, 09/06/2020  
GRADE: Sobresaliente 'cum laude'
  12. TITLE: Modeling and simulation of the plasma discharge in a radiofrequency thruster  
STUDENT: Jiewei Zhou  
CO-SUPERVISOR: Pablo Fajardo Peña  
INSTITUTION & DATE: UC3M, 20/04/2021  
GRADE: Sobresaliente 'cum laude'
  13. TITLE: Modeling the plasma discharge in an electron-cyclotron-resonance thruster

STUDENT: Álvaro Sánchez Villar  
CO-SUPERVISOR: Mario Merino  
INSTITUTION: UC3M, 08-03-2022  
GRADE: Sobresaliente 'cum laude'

– **Ongoing**

14. TITLE: Study of turbulent transport in Hall effect thrusters  
STUDENT: Enrique Bello Benítez  
INSTITUTION & DATE: UC3M, planned for 2023
15. TITLE: Fluid-kinetic models for space plasma thrusters  
STUDENT: Jesús Perales Díaz  
CO-SUPERVISOR: Adrián Domínguez  
INSTITUTION & DATE: UC3M, planned for 2023
16. TITLE: Analysis of the wave-plasma interaction in electrodeless plasma thrusters  
STUDENT: Pedro Jiménez Jiménez  
CO-SUPERVISOR: Mario Merino  
INSTITUTION & DATE: UC3M, planned for 2023
17. TITLE: Two-dimensional model of wall interaction in Hall effect thruster discharges  
STUDENT: Alberto Marín Cebrián  
CO-SUPERVISOR: Adrián Domínguez  
INSTITUTION & DATE: UC3M, planned for 2024
18. TITLE: Design, simulation, and testing of a low-power Hall effect thruster  
STUDENT: Tatiana Perrotin  
CO-SUPERVISOR: Pablo Fajardo  
INSTITUTION & DATE: UC3M, planned for 2024
19. TITLE: A three-dimensional model and simulator of energetic plumes from space plasma thrusters  
STUDENT: Alberto Modesti  
CO-SUPERVISOR: Filippo Cichocki, Jiewei Zhou  
INSTITUTION & DATE: UC3M, planned for 202
20. TITLE: Multi-fluid modeling and simulation of advanced electrodeless plasma thrusters  
STUDENT: Diego García Lahuerta  
CO-SUPERVISOR: Mario Merino  
INSTITUTION & DATE: UC3M, planned for 2025
21. TITLE: Advanced 2D Fluid Modelling of Hall effect Thruster discharges  
STUDENT: Davide Poli  
CO-SUPERVISOR: Pablo Fajardo  
INSTITUTION & DATE: UC3M, planned for 2025
22. TITLE: Kinetic modelling of plasma thruster plumes  
STUDENT: Matteo Guaita  
CO-SUPERVISOR: Mario Merino  
INSTITUTION & DATE: UC3M, planned for 2025
23. TITLE: Stability analysis of magnetized plasma flows for space propulsion  
STUDENT: Matteo Ripoli  
CO-SUPERVISOR: Mario Merino  
INSTITUTION & DATE: UC3M, planned for 2026
24. TITLE: Analysis of the plasma discharge in a radiofrequency ion thruster  
STUDENT: Simone Dalle Fabbriche  
INSTITUTION & DATE: UC3M, planned for 2026

## Patents

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- Merino, M. and Ahedo, E., "Sistema sin partes móviles ni electrodos y procedimiento para vectorizar el empuje en motores espaciales de plasma," Spanish Patent Office, Patente ES2540167, 2015

## Research projects

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1. TITLE: Spacecraft thermal control design data  
MAIN INVESTIGATOR: I. Da Riva  
FUNDING INSTITUTION: ESA (ESTEC/Contract 4446/80/NL/AK)  
DURATION AND YEAR OF CONCESSION: 1 year (1982)
2. TITLE: Simulación numérica de la corona de plasma termonuclear  
MAIN INVESTIGATOR: J.R. Sanmartín  
FUNDING INSTITUTION: CAICYT (nº1482-82)  
DURATION AND YEAR OF CONCESSION: 3 years (1983)
3. TITLE: Devanado de una superficie de revolución  
MAIN INVESTIGATOR: J.M. Vega  
FUNDING INSTITUTION: Construcciones Aeronáuticas S.A.  
DURATION AND YEAR OF CONCESSION: 3 months (1986)
4. TITLE: Inestabilidades y efectos de asimetría en la fluidodinámica de la fusión por confinamiento inercial  
MAIN INVESTIGATOR: J.R. Sanmartín  
FUNDING INSTITUTION: CICYT (nº PB85-0059)  
DURATION AND YEAR OF CONCESSION: 3 years (1986)
5. TITLE: Tratamiento analítico y numérico de la hidrodinámica de plasmas densos con radiación  
MAIN INVESTIGATOR: J.R. Sanmartín  
FUNDING INSTITUTION: MEC  
DURATION AND YEAR OF CONCESSION: 3 years (1989)
6. TITLE: Cables espaciales electrodinámicos  
MAIN INVESTIGATOR: J.R. Sanmartín  
FUNDING INSTITUTION: CICYT (nº ESP89-0170)  
DURATION AND YEAR OF CONCESSION: 1 year (1990)
7. TITLE: Modelo de contactor de plasma para la ionosfera  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: UPM (nº A-92001)  
DURATION AND YEAR OF CONCESSION: 1 year (1992)
8. TITLE: Cable espacial electrodinámico sin ánodo  
MAIN INVESTIGATOR: J.R. Sanmartín  
FUNDING INSTITUTION: CICYT (nº ESP92-0989-E)  
DURATION AND YEAR OF CONCESSION: 1 year (1992)
9. TITLE: Dinámica y electrodinámica de tethers y contactores de plasma  
MAIN INVESTIGATOR: J.R. Sanmartín  
FUNDING INSTITUTION: DGICYT (nº PB94-0417-Co3-01)  
DURATION AND YEAR OF CONCESSION: 3 years (1995)
10. TITLE: Modelización matemática de contactores en plasmas no magnetizados  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: DGICYT (nº PB94-0417-Co3-03)  
DURATION AND YEAR OF CONCESSION: 3 years (1995)
11. TITLE: Dinámica del plasma en contactores y motores Hall  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: DGICYT (nº PB97-0574-Co4-02)  
DURATION AND YEAR OF CONCESSION: 3 years (1998)
12. TITLE: Short Electrodynamic Tethers

- MAIN INVESTIGATOR: J. Sanmartín  
FUNDING INSTITUTION: ESA Contract 13395/98/NL/MV  
DURATION AND YEAR OF CONCESSION: 6 months (1999)
13. TITLE: One-dimensional analysis of Hall thruster operating modes  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: EOARD (n° SPC-00-4034)  
DURATION AND YEAR OF CONCESSION: 1 year (2000)
14. TITLE: Analysis of the plasma response in a Hall thruster  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: EOARD (n° SPC-01-4070)  
DURATION AND YEAR OF CONCESSION: 1 year (2001)
15. TITLE: Propulsión espacial eléctrica  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: Min. Ciencia y Tecnología, (n° BFM-2001-2352)  
DURATION AND YEAR OF CONCESSION: 3 years (2001)
16. TITLE: Physics of the Hall thruster discharge  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: EOARD (n° SPC-02-4080)  
DURATION AND YEAR OF CONCESSION: 1 year (2002)
17. TITLE: High performance ceramic discharge chambers for Hall effect thrusters  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: INASMET (ESA Contract 16731/02/NL/PA)  
DURATION AND YEAR OF CONCESSION: 18 months (2003)
18. TITLE: Development of numerical models for double stage Hall thrusters  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: ALTA S.p.a. (ALTA/DS-HET L/CN-01)  
DURATION AND YEAR OF CONCESSION: 2 months (2003)
19. TITLE: Numerical modelling of the Hall thruster discharge  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: EOARD (Award FA8655-04-1-3003)  
DURATION AND YEAR OF CONCESSION: 1 year (2004)
20. TITLE: Propulsión espacial por plasma y efecto Hall  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: Min. Educación y Ciencia (n° ESP-2004-3093)  
DURATION AND YEAR OF CONCESSION: 3 years (2004)
21. TITLE: Specific testing equipment and methodology for sputtering tests of electric propulsion materials  
MAIN INVESTIGATOR: INASMET  
FUNDING INSTITUTION: ESA (Contract 19554/05/NL/PA)  
DURATION AND YEAR OF CONCESSION: 1 year (2006)
22. TITLE: Two-dimensional modeling of Hall thruster discharge  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: EOARD (Award FA8655-06-1-3032)  
DURATION AND YEAR OF CONCESSION: 1 year (2006)
23. TITLE: Motores espaciales de plasma y efecto Hall  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: Min. Educación y Ciencia (n° ESP-2007-62694)  
DURATION AND YEAR OF CONCESSION: 3 years (2007)
24. TITLE: HeliconPlasmaHydrazine.COMbinedMicro (HPH.COM)  
MAIN INVESTIGATOR: E. Ahedo (del grupo español de UPM)  
FUNDING INSTITUTION: European Union- 7th Framework Program (Grant 218862)  
DURATION AND YEAR OF CONCESSION: 3 years (2008)
25. TITLE: Magnetic nozzles for plasma thrusters: acceleration, thrust, and detachment mechanisms  
MAIN INVESTIGATOR: E. Ahedo



- FUNDING INSTITUTION: EOARD (Award FA8655-10-1-3085)  
DURATION AND YEAR OF CONCESSION: 09/2010-08/2011
26. TITLE: Ion Beam Shepherd for Contactless Debris Removal  
MAIN INVESTIGATOR: UPM (C. Bombardelli, M. Merino)  
FUNDING INSTITUTION: ESA (Contract Ao/1-6411/10/NL/CBI)  
DURATION AND YEAR OF CONCESSION: 11/2010-04/2011
27. TITLE: Propulsión espacial por plasma  
MAIN INVESTIGATOR: UPM (E. Ahedo)  
FUNDING INSTITUTION: Min. Educación y Ciencia (nº AYA2010-16699)  
DURATION AND YEAR OF CONCESSION: 01/2011-12/2013
28. TITLE: Plasma detachment mechanisms in propulsive magnetic nozzles  
MAIN INVESTIGATOR: UPM (E. Ahedo)  
FUNDING INSTITUTION: EOARD (Award FA8655-12-1-2043)  
DURATION AND YEAR OF CONCESSION: 03/2012-02/2013
29. TITLE: Modification of the orbit of a small asteroid with ionic collisions (MOSAIC)  
MAIN INVESTIGATOR: UPM (C. Bombardelli) (Astrium GMBH, Deimos)  
FUNDING INSTITUTION: ESA (Contract 4000107023/12/F/MOS)  
DURATION AND YEAR OF CONCESSION: 11/2012 - 01/2013
30. TITLE: Analysis of the Rotating-spoke Oscillation in Hall Thrusters and its Role on Turbulent Diffusion  
MAIN INVESTIGATOR: UPM (E. Ahedo)  
FUNDING INSTITUTION: EOARD (Award FA8655-13-1-3033)  
DURATION AND YEAR OF CONCESSION: 05/2013-05/2014
31. TITLE: **IBSIOD** - Ion Beam Shepherd in Orbit Demonstration (IBSIOD)  
MAIN INVESTIGATOR: DEIMOS (UPM, TAS-F)  
FUNDING INSTITUTION: ESA (Contract 4000109292/13/NL/MV)  
DURATION AND YEAR OF CONCESSION: 10/2013 - 03/2014
32. TITLE: 10-KW Hall-Effect Thruster Optimized for Space Transportation  
MAIN INVESTIGATOR: E. Ahedo  
FUNDING INSTITUTION: SNECMA (Contract 2014-013-G) y ESA (AO/1---7123/12/NL/CP)  
DURATION AND YEAR OF CONCESSION: 03/2014- 07/2014
33. TITLE: Helicon Plasma Thrusters for Space Missions  
MAIN INVESTIGATOR: SENER  
FUNDING INSTITUTION: ESA (Contract 4000107292/12/NL/CO)  
DURATION AND YEAR OF CONCESSION: 01/2013-01/2015
34. TITLE: Improving Low Earth Orbit Security With Enhanced Electric Propulsion (LEOSWEEP)  
MAIN INVESTIGATOR at UC3M: E. Ahedo.  
PARTNERS: 11. COORDINATOR: SENER  
FUNDING INSTITUTION: European Union- 7th Framework Program (Grant 607457)  
DURATION AND YEAR OF CONCESSION: 11/2013-10/2016
35. TITLE: Cámara de ensayo de propulsión eléctrica  
MAIN INVESTIGATOR: UC3M (E. Ahedo)  
FUNDING INSTITUTION: MINECO (nº UNC313-4E-1552)  
DURATION AND YEAR OF CONCESSION: 01/2013-12/2015
36. TITLE: Propulsión espacial por plasma: simulación y experimentación  
MAIN INVESTIGATOR: UC3M (E. Ahedo)  
FUNDING INSTITUTION: MINECO (nº ESP2013-41052)  
DURATION AND YEAR OF CONCESSION: 01/2014-12/2016
37. TITLE: **MODEXVAL** - Model and Experimental validation of spacecraft-thruster Interactions (erosion) for electric propulsion thruster plumes  
FUNDING INSTITUTION: ESA (Contract 4000116180/15/NL/PS)  
PARTNERS: 5. PROJECT COORDINATOR: Airbus DS  
MAIN INVESTIGATOR AT UC3M: E. Ahedo  
DURATION: 03/2015-03/2017

38. TITLE: Design and manufacturing of a Langmuir Probe for the use in RF Generated Plasmas  
FUNDING INSTITUTION: ESA  
MAIN INVESTIGATOR: M. Merino  
DURATION: 10/2015-12/2015
39. TITLE: Technological prospective in the aerospace field  
FUNDING INSTITUTION: ISDEFE  
MAIN INVESTIGATOR: P. Fajardo  
DURATION: 03/2016-03/2018
40. TITLE: Experimental campaign for the characterization and optimization of the HPT-05 prototype  
FUNDING INSTITUTION: SENER  
MAIN INVESTIGATOR: P. Fajardo  
DURATION: 05/2016-06/2016
41. TITLE: Development of an advanced model of the Helicon Plasma Thruster  
FUNDING INSTITUTION: Airbus DS (Grant CW240050)  
MAIN INVESTIGATOR: E. Ahedo  
DURATION: 09/2016-08/2019
42. TITLE: Characterization tests on the Helicon Plasma Thruster  
FUNDING INSTITUTION: Airbus DS (Ref. CW241842 /4500564351)  
MAIN INVESTIGATOR: E. Ahedo  
DURATION: 11/2016-04/2017
43. TITLE: **CHEOPS** - Consortium for Hall Effect Orbital Propulsion System  
FUNDING INSTITUTION: EC-H2020 (Grant 730135)  
PARTNERS: 12. PROJECT COORDINATOR: SAFRAN  
MAIN INVESTIGATOR AT UC3M: E. Ahedo  
DURATION: 12/2016-05/2020
44. TITLE: **MINOTOR** - Magnetic NOzzle thruster with elecTRon cyclOTron Resonance  
FUNDING INSTITUTION: EC-H2020 (Grant 730028)  
PARTNERS: 7. PROJECT COORDINATOR: ONERA  
MAIN INVESTIGATOR AT UC3M: M. Merino  
DURATION: 01/2017-12/2019
45. TITLE: **PE3** - Propulsores electromagnéticos para la exploración espacial  
FUNDING INSTITUTION: MINECO, Plan Nacional de I+D, (Proyecto ESP2016-75887-P)  
MAIN INVESTIGATOR: E. Ahedo, P. Fajardo  
DURATION: 01/2017 - 12/2019
46. TITLE: Experimental campaign for the characterization and optimization of the HPT-05 Helicon Plasma Thruster prototype. Part II  
FUNDING INSTITUTION: SENER  
MAIN INVESTIGATOR: J. Navarro  
DURATION: 12/2017-05/2018
47. TITLE: **NANOSTAR** - Collaborative network for the development of educational nanosatellites in Europe  
FUNDING INSTITUTION: INTERREG-SUDOE SOE2/P1/Fo684  
FUNDING FOR UC3M: 310.5 k€  
PROJECT COORDINATOR: Aerospace Valley (France)  
MAIN INVESTIGATOR AT UC3M: Mario Merino  
DURATION: 2018-20
48. TITLE: Cátedra UC3M-SENER Aeroespacial  
FUNDING INSTITUTION: SENER  
MAIN INVESTIGATOR: E. Ahedo /M.Merino  
DURATION: 04/2018-04/2022
49. TITLE: Faraday Probe for Helicon Plasma Thruster  
FUNDING INSTITUTION: ESA  
MAIN INVESTIGATOR: J. Navarro  
DURATION: mayo-07/2018

50. TITLE: **MFOC** - Madrid Flight-On-Chip  
FUNDING INSTITUTION: Comunidad Autónoma de Madrid  
PROJECT COORDINATOR: SENER  
MAIN INVESTIGATOR AT UC3M: Juan Llorens  
DURATION: 01/2019 - 12/ 2021
51. TITLE: **MARTINLARA** - Millimeter wave Array at Room Temperature for INstruments in Leo Altitude Radio Astronomy  
FUNDING INSTITUTION: Comunidad Autónoma de Madrid  
PROJECT COORDINATOR: GREMA-UC3M  
MAIN INVESTIGATOR AT UC3M: Eduardo Ahedo  
DURATION: 01/2019 - 12/ 2022
52. TITLE: **PROMETEO** - Propulsión por plasma y fusión nuclear: innovando el transporte espacial  
FUNDING INSTITUTION: Comunidad Autónoma de Madrid  
PROJECT COORDINATOR: UC3M  
MAIN INVESTIGATOR AT UC3M: Eduardo Ahedo  
DURATION: 01/2019- 12/ 2021
53. TITLE: Improvements in Helicon Plasma Thruster (HPT) for its evolution towards Space application  
FUNDING INSTITUTION: ESA  
PROJECT COORDINATOR: SENER  
MAIN INVESTIGATOR AT UC3M: Pablo Fajardo  
DURATION: 09/ 2018-12/ 2019
54. TITLE: **EDDA** - European Direct-Drive Architecture  
FUNDING INSTITUTION: EC-H2020 (Grant 870470)  
PROJECT COORDINATOR: Thales Alenia Space (France)  
MAIN INVESTIGATOR AT UC3M: E. Ahedo  
DURATION: 12/ 2019 - 11/2021
55. TITLE: **HIPATIA** - HelIcon Plasma Thruster for In-space Applications  
FUNDING INSTITUTION: EC-H2020 (Grant 870542)  
PROJECT COORDINATOR: Sener Aeroespacial  
MAIN INVESTIGATOR AT UC3M: P. Fajardo  
DURATION: 01/2020 - 06/2022
56. TITLE: **ESPEOS** - Electric Space Propulsion for Earth Orbit Satellites  
FUNDING INSTITUTION: MINECO, Plan Nacional de I+D, (Proyecto PID2019-108034RB)  
MAIN INVESTIGATOR: P. Fajardo, M. Merino  
DURATION: 3 years, 01/2020 – 12/2022
57. TITLE: **ZARATHUSTRA** - Revolutionizing adv. electrodeless plasma thrusters for space transportation  
FUNDING INSTITUTION: European Commission Research Executive Agency (Grant 950466)  
FUNDING FOR UC3M: 1.134 k€  
MAIN INVESTIGATOR AT UC3M: M. Merino  
DURATION: 5 years, 01/2021-12/2025
58. TITLE: **ASPIRE** - Advanced Space Propulsion for Innovative Realization of space Exploration  
FUNDING INSTITUTION: EC-H2020 (Grant 101004366)  
PARTNERS: 8. PROJECT COORDINATOR: SITAEL  
MAIN INVESTIGATOR AT UC3M: E. Ahedo  
DURATION: 2.5 years, 1/2021-6/2023
59. TITLE: **CHEOPS-LP** - Consortium for Hall Effect Orbital Propulsion System-Low Power  
FUNDING INSTITUTION: EC-H2020  
PARTNERS: 11. PROJECT COORDINATOR: SAFRAN  
MAIN INVESTIGATOR AT UC3M: P. Fajardo  
DURATION: 3 years, 02/2021-01/2024
60. TITLE: **CHEOPS-MP** - Consortium for Hall Effect Orbital Propulsion System-Medium Power  
FUNDING INSTITUTION: EC-H2020 (Grant 101004226.)  
PARTNERS: 12. PROJECT COORDINATOR: SAFRAN

MAIN INVESTIGATOR AT UC3M: E. Ahedo

DURATION: 3.5 years, 03/2021-08/202

61. TITLE: **COMIT** - Mini motor de plasma compacto para las aplicaciones del Nuevo Espacio  
FUNDING INSTITUTION: Agencia Estatal de Investigación (PDC2021-120911-I00)  
MAIN INVESTIGATOR AT UC3M: P. Fajardo, E. Ahedo  
DURATION: 2 years, 12/2021-12/2023
62. TITLE: **CSAT** - Centro de investigación e integración de tecnología espacial y nano/ micro-satélites  
FUNDING INSTITUTION: Agencia Estatal de Investigación (EQC2021-007562-P)  
FINANCIACIÓN UC3M: 1.5 M€  
MAIN INVESTIGATOR AT UC3M: A. Marcos Esteban  
DURATION: 2 years, 01/2022-12/2023
63. TITLE: **ECOMODIS** - Electron Cooling Model for Simulation of EP Induced Plasma Interactions with Satellites  
FUNDING INSTITUTION: European Space Agency (ESA) (AO/1-10844/21/NL/RA)  
PARTNERS: 4. PROJECT COORDINATOR: Universidad Carlos III De Madrid  
MAIN INVESTIGATOR AT UC3M: P. Fajardo, E. Ahedo  
DURATION: 2 years, 05/2022-04/2024
64. TITLE: **SUPERLEO** - Sustainable propellants enabling plasma propulsion at very low Earth orbit  
FUNDING INSTITUTION: Agencia Estatal de Investigación (TED2021-132484B-I00)  
FUNDING FOR UC3M: 111 k€  
MAIN INVESTIGATOR AT UC3M: J. Navarro Cavallé, P. Fajardo  
DURATION: 3 years, 12/2022-11/2024

### **Peer-reviewed publications:**

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1. AUTHORS: E. Ahedo, J.R. Sanmartín  
TITLE: Resonant absorption in a plasma step profile  
JOURNAL: Plasma Physics and Controlled Fusion, 29, pp. 419 –432 (1987)
2. AUTHORS: E. Ahedo, J.R. Sanmartín  
TITLE: Self-consistent resonance absorption with two-layer profile steepening  
JOURNAL: Physics of Fluids B, 1, pp. 2450-2461(1989)
3. AUTHORS: E. Ahedo, M. Martínez-Sánchez, J.R. Sanmartín  
TITLE: Current collection by an active spherical electrode in an unmagnetized plasma  
JOURNAL: Physics of Fluids B 4, pp. 3847-3855 (1992)
4. AUTHORS: R.I. Samanta-Roy, D.E. Hastings, E. Ahedo  
TITLE: Systems analysis of electrodynamic tethers  
JOURNAL: Journal of Spacecraft and Rockets 29, pp. 415-424 (1992)
5. AUTHORS: J.R. Sanmartín, M. Martínez-Sánchez, E. Ahedo  
TITLE: Bare wire anodes for electrodynamic tethers  
JOURNAL: Journal of Propulsion and Power 9, pp. 353-360 (1993)
6. AUTHORS: S. Huller, E. Ahedo  
TITLE: Self-consistent plasma profile steepening in presence of laser light with mixed polarization  
JOURNAL: Physics of Plasmas 1, pp. 4061-4075 (1994)
7. AUTHORS: E. Ahedo, V. Lapuerta  
TITLE: Weakly three-dimensional model of spherical contactors in unmagnetized plasmas  
JOURNAL: Physics of Plasmas 2, pp. 3252-3260 (1995)
8. AUTHORS: E. Ahedo  
TITLE: Current-voltage response of anodic plasma contactors with external ionization  
JOURNAL: Physics of Plasmas 3, pp. 3875-3884 (1996)
9. AUTHORS: E. Ahedo  
TITLE: Structure of the plasma-wall interaction in an oblique magnetic field  
JOURNAL: Physics of Plasmas 4, pp. 4419-4430 (1997)

10. AUTHORS: E. Ahedo  
TITLE: Plasma-wall interaction in an oblique magnetic field: Model of the space-charge sheath for large potentials and small Debye lengths  
JOURNAL: *Physics of Plasmas* 6, pp. 4200-4207 (1999)
11. AUTHORS: V. Lapuerta, E. Ahedo  
TITLE: Dynamic model of a plasma structure with an intermediate double layer, formed outside an anodic plasma contactor  
JOURNAL: *Physics of Plasmas* 7, pp. 2693-2703(2000)
12. AUTHORS: E. Ahedo, P. Martínez, M. Martínez-Sánchez  
TITLE: One-dimensional model of the plasma flow in a Hall thruster  
JOURNAL: *Physics of Plasmas* 8 pp. 3058-3068 (2001)
13. AUTHORS: E. Ahedo, V. Lapuerta  
TITLE: Comparison of collisionless macroscopic models and application to the ion-electron instability  
JOURNAL: *Physics of Plasmas* 8, pp. 3873-3878 (2001)
14. AUTHORS: E. Ahedo, J. Sanmartín  
TITLE: Analysis of bare-tether systems for deorbiting LEO satellites  
JOURNAL: *J. Spacecraft and Rockets* 39, pp. 198-205 (2002)
15. AUTHORS: V. Lapuerta, E. Ahedo  
TITLE: General parametric analysis of the linear two-stream instability  
JOURNAL: *Physics of Plasmas* 9, pp. 1513-1519 (2002)
16. AUTHORS: E. Ahedo  
TITLE: Radial macroscopic model of a plasma flowing along annular dielectric walls  
JOURNAL: *Physics of Plasmas* 9, pp. 3178-3186 (2002)
17. AUTHORS: V. Lapuerta, E. Ahedo  
TITLE: Multistream instabilities in three-species plasmas formed around strong double-layer  
JOURNAL: *Physics of Plasmas* 9, pp. 3236-3244 (2002)
18. AUTHORS: E. Ahedo, J.M. Gallardo, M. Martínez-Sánchez  
TITLE: Model of the plasma discharge in a Hall thruster with heat conduction  
JOURNAL: *Physics of Plasmas* 9, pp. 4061-4070 (2002)
19. AUTHORS: E. Ahedo  
TITLE: Presheath/sheath model of a plasma with secondary emission from two parallel walls  
JOURNAL: *Physics of Plasmas* 9, pp. 4340-4347 (2002)
20. AUTHORS: E. Ahedo, M. Martínez-Sánchez  
TITLE: Response to Comment on "One-dimensional model of the plasma flow in a Hall thruster"  
JOURNAL: *Physics of Plasmas* 10, p. 1174 (2003)
21. AUTHORS: V. Lapuerta, E. Ahedo  
TITLE: The electron-electron instability in a spherical plasma structure with an intermediate double layer  
JOURNAL: *Physics of Plasmas* 10, pp. 1351-1363 (2003)
22. AUTHORS: E. Ahedo, J.M. Gallardo, M. Martínez-Sánchez  
TITLE: Effects of the radial-plasma wall interaction on the axial Hall thruster discharge  
JOURNAL: *Physics of Plasmas* 10, pp. 3397-3409 (2003)
23. AUTHORS: E. Ahedo, D. Escobar  
TITLE: Influence of design and operation parameters on Hall thruster performances  
JOURNAL: *J. Applied Physics* 96, pp. 983-992 (2004)
24. AUTHORS: E. Ahedo, F.I. Parra  
TITLE: Partial trapping of secondary electron emission in a Hall thruster plasma  
JOURNAL: *Physics of Plasmas* 12, 073503 (2005)
25. AUTHORS: E. Ahedo, F.I. Parra  
TITLE: A model of the two-stage Hall thruster discharge  
JOURNAL: *Journal of Applied Physics* 98, 023303 (2005)
26. AUTHORS: E. Ahedo, J. Rus  
TITLE: Vanishing of the negative anode sheath in a Hall thruster  
JOURNAL: *Journal of Applied Physics* 98, 043306 (2005)

27. AUTHORS: F.I. Parra, E. Ahedo, M. Fife, M. Martínez-Sánchez  
TITLE: A two-dimensional hybrid model of the Hall thruster discharge  
JOURNAL: Journal of Applied Physics 100, 023304 (1-11) (2006)
28. AUTHORS: E. Ahedo, V. de Pablo  
TITLE: Combined effects of electron partial thermalization & second. emission in Hall thruster discharges  
JOURNAL: Physics of Plasmas 14, 083501 (1-11) (2007)
29. AUTHORS: E. Ahedo, D. Escobar  
TITLE: Two-region model for positive and negative plasma sheaths and its application to Hall thruster metallic anodes  
JOURNAL: Physics of Plasmas 15, 033504 (1-12) (2008)
30. AUTHORS: D. Escobar, E. Ahedo  
TITLE: Two-dimensional electron model for a hybrid code of a two-stage Hall thruster  
JOURNAL: IEEE Transactions on Plasma Science, vol. 36, pp. 2043-2057 (2008)
31. AUTHORS: S. Barral, E. Ahedo  
TITLE: Low-frequency model of breathing oscillations in Hall discharges  
JOURNAL: Physical Review E, vol. 79, 046401 (1-11) (2009)
32. AUTHORS: E. Ahedo, D. Carralero  
TITLE: Model of a source-driven plasma interacting with a wall in an oblique magnetic field  
JOURNAL: Physics of Plasmas, vol. 16, 043506 (1-13) (2009)
33. AUTHORS: E. Ahedo, J. Ramos  
TITLE: Parametric analysis of the two-fluid tearing instability  
JOURNAL: Plasma Physics and Controlled Fusion, vol. 51, 055018 (1-22) (2009)
34. AUTHORS: E. Ahedo, M. Martínez-Sánchez  
TITLE: Theory of a stationary current-free double-layer in a collisionless plasma.  
JOURNAL: Physical Review Letters, vol.103, 135002 (1-4) (2009)
35. AUTHORS: E. Ahedo  
TITLE: Parametric analysis of a magnetized cylindrical plasma  
JOURNAL: Physics of Plasmas, vol.16, 113503 (1-11) (2009)
36. AUTHORS: E. Ahedo, M. Merino  
TITLE: Two-dimensional supersonic plasma expansion in a magnetic nozzle  
JOURNAL: Physics of Plasmas, vol. 17, 073501 (1-15) (2010)
37. AUTHORS: E. Ahedo, R. Santos, F. Parra  
TITLE: Fulfilment of the kinetic Bohm criterion in a quasineutral particle-in-cell model  
JOURNAL: Physics of Plasmas, vol. 17, 073507 (1-12) (2010)
38. AUTHORS: M. Martínez-Sánchez, E. Ahedo  
TITLE: Magnetic mirror effects on a collisionless plasma in a convergent geometry  
JOURNAL: Physics of Plasmas, vol. 18, 033509 (1-10) (2011)
39. AUTHORS: E. Ahedo  
TITLE: Double-layer formation & propulsive assessment for a 3-species plasma expanding in a magnetic nozzle.  
JOURNAL: Physics of Plasmas, vol. 18, 033510 (1-11) (2011)
40. AUTHORS: E. Ahedo, M. Merino  
TITLE: On plasma detachment in propulsive magnetic nozzles  
JOURNAL: Physics of Plasmas, vol. 18, 053504 (1-8) (2011)
41. AUTHORS: E. Ahedo  
TITLE: Magnetic confinement in a high-density cylindrical plasma  
JOURNAL: Physics of Plasmas, vol. 18, 103506 (1-6) (2011)
42. AUTHORS: M. Merino, E. Ahedo  
TITLE: Simulation of plasma flows in divergent magnetic nozzles  
JOURNAL: IEEE Transactions on Plasma Science, vol. 39, 2938-9 (2011)
43. AUTHORS: E. Ahedo  
TITLE: Plasmas for space propulsion  
JOURNAL: Plasma Physics and Controlled Fusion 53, 124037(1-18) (2011)

44. AUTHORS: E. Ahedo, J. Ramos  
TITLE: Supersonic regime of the Hall-MHD resistive tearing instability  
JOURNAL: Physics of Plasmas, vol.19, 072519 (2012)
45. AUTHORS: E. Ahedo, M. Merino  
TITLE: 2D plasma expansion in a magnetic nozzle: separation due to electron inertia  
JOURNAL: Physics of Plasmas, vol.19, 083501 (2012)
46. AUTHORS: J. Ramos, E. Ahedo  
TITLE: Response to Comment on 'Supersonic regime of the Hall-MHD resistive tearing instability'  
JOURNAL: Physics of Plasmas, 20, 014704 (2013)
47. AUTHORS: M. Merino, E. Ahedo  
TITLE: 2D quasi-double-layer in a 2-electron-temperature, magnetically-expanded, current-free plasma  
JOURNAL: Physics of Plasmas, 20, 023502 (2013)
48. AUTHORS: E. Ahedo, J. Navarro  
TITULO: Helicon thruster plasma modeling: 2D fluid-dynamics and propulsive performances  
JOURNAL: Physics of Plasmas, 20, 043512 (2013)
49. AUTHORS: C. Bombardelli, H. Urrutxua, M. Merino, J. Peláez, E. Ahedo  
TITLE: The ion beam shepherd: A new concept for asteroid deflection  
JOURNAL: Acta Astronautica, 90, 98-102 (2013)
50. AUTHORS: D. Escobar, E. Ahedo  
TITLE: Low freq. azimuthal stability of the ionization region of the Hall thruster discharge. I. Local analysis  
JOURNAL: Phys. Plasmas 21, 043505 (1-13) (2014)
51. AUTHORS: M. Merino, E. Ahedo  
TITLE: Plasma detachment in a propulsive magnetic nozzle via ion demagnetization  
JOURNAL: Plasma Sources Sci. Technol. 23, 032001 (1-5) (2014)
52. AUTHORS: D. Escobar, E. Ahedo  
TITLE: Global Stability Analysis of Azimuthal Oscillations in Hall Thrusters  
JOURNAL: IEEE Transactions on Plasma Science 43, 149-157 (2015)
53. AUTHORS: M. Merino, E. Ahedo  
TITLE: Influence of Electron and Ion Thermodynamics on the Magnetic Nozzle Plasma Expansion  
JOURNAL: IEEE Transactions on Plasma Science 43, 244-251 (2015)
54. AUTHORS: M. Merino, F. Cichocki, E. Ahedo  
TITLE: A collisionless plasma thruster plume expansion model  
JOURNAL: Plasma Sources Sci. Technol. 24, 035006 (1-12) (2015)
55. AUTHORS: M. Martínez Sánchez, J. Navarro-Cavallé, E. Ahedo  
TITLE: Electron cooling and finite potential drop in a magnetized plasma expansion  
JOURNAL: Phys. Plasmas 22, 053501 (1-11) (2015)
56. AUTHORS: D. Escobar, E. Ahedo  
TITLE: Low freq. azimuthal stability of the ioniz. region of the Hall thruster discharge. II. Global analysis  
JOURNAL: Phys. Plasmas 22, 102114 (2015)
57. AUTHORS: M. Merino, E. Ahedo.  
TITLE: Fully magnetized plasma flow in a magnetic nozzle  
JOURNAL: Phys. Plasmas 23, 023506 (1-7) (2016)
58. AUTHORS: M. Merino, E. Ahedo.  
TITLE: Effect of the Plasma-induced Magnetic Field on a Magnetic Nozzle  
JOURNAL: Plasma Sources & Science Technology 25, 045012 (1-9) (2016)
59. AUTHORS: D. Pérez-Grande, O. González-Martínez, P. Fajardo, E. Ahedo  
TITLE: Analysis of the Numerical Diffusion in anisotropic mediums: Benchmarks for Magnetic Field Aligned Meshes in Space Propulsion simulations  
JOURNAL: Applied Sciences 6, 354 (1-18), DOI: 10.3390/app6110354 (2016)
60. AUTHORS: F. Cichocki, M. Merino, E. Ahedo, M. Smirnova, A. Mingo, M. Dobkevicius.  
TITLE: Electric Propulsion Subsystem Optimization for 'Ion Beam Shepherd' Missions  
JOURNAL: Journal of Propulsion and Power 33, No. 2, 370-378 (2017)
61. AUTHORS: M. Merino, E. Ahedo

- TITLE: Contactless steering of a plasma jet with a 3D magnetic nozzle  
JOURNAL: Plasma Sources & Science Technology 26, 095001 (10pp) (2017)
62. AUTHORS: F. Cichocki, A. Domínguez-Vázquez, M. Merino, E. Ahedo  
TITLE: Hybrid 3D model for the interaction of plasma thruster plumes with nearby objects  
JOURNAL: Plasma Sources & Science Technology 26, 125008 (19pp) (2017)
63. AUTHORS: J. Navarro-Cavallé, M. Wijnen, P. Fajardo, E. Ahedo  
TITLE: Experimental characterization of a 1 kW Helicon Plasma Thruster  
JOURNAL: Vacuum 149, 69-73 (2018)
64. AUTHORS: F. Cichocki, M. Merino, E. Ahedo  
TITLE: Spacecraft-plasma-debris interaction in an ion beam shepherd mission  
JOURNAL: Acta Astronautica 146, 216–227 (2018)
65. AUTHORS: G. Sánchez-Arriaga, J. Zhou, E. Ahedo, M. Martínez-Sánchez, J. J. Ramos  
TITLE: Kinetic features and non-stationary electron trapping in paraxial magnetic nozzles  
JOURNAL: Plasma Sources & Science Technology 27, 035002 (13pp) (2018)
66. AUTHORS: M. Merino, J. Mauriño, E. Ahedo  
TITLE: Kinetic electron model for plasma thruster plumes  
JOURNAL: Plasma Sources & Science Technology 27, 035013 (18pp) (2018)
67. AUTHORS: J.J. Ramos, M. Merino, E. Ahedo  
TITLE: Three-dimensional fluid-kinetic model of a magnetically guided plasma jet  
JOURNAL: Physics of Plasmas 25, 061206 (12pp) (2018)
68. AUTHORS: A. Domínguez-Vázquez, F. Taccogna, E. Ahedo  
TITLE: Particle modeling of radial electron dynamics in a controlled discharge of a Hall thruster  
JOURNAL: Plasma Sources & Science Technology 27, 064006 (15pp) (2018)
69. AUTHORS: A. Domínguez, F. Cichocki, M. Merino, P. Fajardo, E. Ahedo  
TITLE: Axisymmetric plasma plume characterization with 2D and 3D particle codes  
JOURNAL: Plasma Sources & Science Technology 27, 104009 (13pp) (2018)
70. AUTHORS: B. Tian, M. Merino, E. Ahedo  
TITLE: Two-dimensional plasma-wave interaction in a helicon plasma thruster with magnetic nozzle  
JOURNAL: Plasma Sources & Science Technology 27, 114003 (12pp) (2018)
71. AUTHORS: M. Li, M. Merino, E. Ahedo, H. Tang  
TITLE: On electron boundary conditions in PIC plasma thruster plume simulations  
JOURNAL: Plasma Sources & Science Technology 28, 034004 (13pp) (2019)
72. AUTHORS: S. Correyero, M. Merino, P.-Q. Elias, J. Jarrige, D. Packan, E. Ahedo  
TITLE: Characterization of diamagnetism inside an ECR thruster with a diamagnetic loop  
JOURNAL: Phys. Plasmas 26, 053511 (11pp) (2019)
73. AUTHORS: S. Correyero, J. Jarrige, D. Packan, E. Ahedo  
TITLE: Plasma beam characterization along the magnetic nozzle of an ECR thruster  
JOURNAL: Plasma Sources & Science Technology 28, 095004 (14pp) (2019)
74. AUTHORS: A. Domínguez-Vázquez, F. Taccogna, P. Fajardo, E. Ahedo  
TITLE: Parametric study of the radial plasma-wall interaction in a Hall thruster  
JOURNAL: J. Phys. D: Appl. Phys. 52, 474003 (12pp) (2019)
75. AUTHORS: J. Zhou, D. Pérez-Grande, P. Fajardo, E. Ahedo  
TITLE: Numerical treatment of a magnetized electron fluid model within an electromagnetic plasma thruster simulation code  
JOURNAL: Plasma Sources & Science Technology 28, 115004 (16 pp) (2019); 29, 019601 (erratum) (2020)
76. AUTHORS: E. Ahedo, S. Correyero, J. Navarro, M. Merino  
TITLE: Macroscopic and parametric study of a kinetic plasma expansion in a paraxial magnetic nozzle  
JOURNAL: Plasma Sources & Sci. Tech. 29, 045017 (17 pp) (2020); 30, 039501 (corrigendum) (2021)
77. AUTHORS: F. Cichocki, M. Merino, E. Ahedo  
TITLE: Three-dimensional geomagnetic field effects on a plasma thruster plume expansion  
JOURNAL: Acta Astronautica 175, 190–203 (2020)
78. AUTHORS: I. Kaganovich and 24 co-authors  
TITLE: Physics of  $E \times B$  discharges relevant to plasma propulsion and similar technologies



- JOURNAL: Phys. Plasmas 27, 120601 (45 pp) (2020)
79. AUTHORS: E. Bello-Benítez, E. Ahedo  
TITLE: Axial–azimuthal, high-frequency modes from global linear-stability model of a Hall thruster  
JOURNAL: Plasma Sources & Science Technology 30, 035003 (21pp) (2021)
80. AUTHORS: A. Sánchez-Villar, J. Zhou, E. Ahedo, M. Merino  
TITLE: Coupled plasma transport and electromagnetic wave simulation of an ECR thruster  
JOURNAL: Plasma Sources & Science Technology 30, 045005 (17pp) (2021)
81. AUTHORS: J. Zhou, G. Sánchez-Arriaga, E. Ahedo  
TITLE: Time-dependent expansion of a weakly-collisional plasma beam in a paraxial magnetic nozzle  
JOURNAL: Plasma Sources & Science Technology 30, 045009 (15pp) (2021)
82. AUTHORS: J.J. Ramos, E. Bello-Benítez, E. Ahedo  
TITLE: Local analysis of electrostatic modes in a two-fluid ExB plasma  
JOURNAL: Phys. Plasmas 28, 052115 (12 pp) (2021)
83. AUTHORS: Cichocki, F., Domínguez-Vázquez, A., Merino, M., Fajardo, P., Ahedo, E.  
TITLE: Three-dimensional neutralizer effects on a Hall-effect thruster near plume  
JOURNAL: Acta Astronautica 187, 498-510 (2021)
84. AUTHORS: Domínguez-Vázquez, A., Cichocki, F., Merino, M., Fajardo, P., Ahedo, E.  
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 CONFERENCE: 36th International Electric Propulsion Conference, Vienna, Austria, 09/2019  
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134. AUTHORS: A. Domínguez, J. Zhou, P. Fajardo, E. Ahedo  
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135. AUTHORS: A. Marín-Cebrián, A. Domínguez-Vázquez, P. Fajardo, E. Ahedo  
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 CONFERENCE: 36th International Electric Propulsion Conference, Vienna, Austria, 09/2019  
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 PUBLICATION: paper IEPC-2019-595, <https://erps.spacegrant.org/> (2019)
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 CONFERENCE: 36th International Electric Propulsion Conference, Vienna, Austria, 09/2019  
 PUBLICATION: paper IEPC-2019-633, <https://erps.spacegrant.org/> (2019)
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 CONFERENCE: 36th International Electric Propulsion Conference, Vienna, Austria, 09/2019  
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139. AUTHORS: S. Correyero Plaza, M. Martínez, E. Ahedo

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143. AUTHORS: J. Nuez, M. Merino, E. Ahedo  
TITLE: Fluid-kinetic propulsive magnetic nozzle model in the fully magnetized limit  
CONFERENCE: 36th International Electric Propulsion Conference, Vienna, Austria, 09/2019  
PUBLICATION: paper IEPC-2019-1016, <https://erps.spacegrant.org/> (2019)
144. AUTHORS: E. Ahedo, P. Fajardo, M. Merino, J. Navarro-Cavallé, A. Sánchez-Villar, M. Wijnen, J. Zhou  
TITLE: Helicon and ECR plasma sources for space propulsion: Simulation and testing  
CONFERENCE: 21st Intern. Conf. on Electromagnetics in Adv. Applications, Granada, Spain, 09/2019  
PUBLICATION: Proceedings ICEAA 2019, pp 788-793 (2019)
145. AUTHORS: T. Perrotin, A. Domínguez-Vázquez, J. Navarro-Cavallé, P. Fajardo, E. Ahedo  
TITLE: Design and Preliminary Study of a 200w Cylindrical Hall Thruster  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2020\_090, available at <http://ep2.uc3m.es/> (2021)
146. AUTHORS: E. Bello-Benítez, E. Ahedo  
TITLE: Advances on Low-Dimensionality Fluid Modeling of Hall Thruster Discharges  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2020\_133, available at <http://ep2.uc3m.es/> (2021)
147. AUTHORS: J. Zhou, F. Taccogna, P. Fajardo, E. Ahedo  
TITLE: Performance Analysis of Alternative Propellants for a Helicon Plasma Thruster  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2020\_191, available at <http://ep2.uc3m.es/> (2021)
148. AUTHORS: A. Marín-Cebrián, A. Domínguez-Vázquez, P. Fajardo, E. Ahedo  
TITLE: Radial PIC Simulations of a Hall Thruster Discharge with Different Anomalous Transport Models  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2020\_297, available at <http://ep2.uc3m.es/> (2021)
149. AUTHORS: A. Modesti, F. Cichocki, E. Ahedo  
TITLE: Assessment of Numerical Diffusion Effects in Magnetized Plasma Plume Simulations  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2020\_306, available at <http://ep2.uc3m.es/> (2021)
150. AUTHORS: P. Jiménez, M. Merino, E. Ahedo  
TITLE: Preliminary investigation of the electromagnetic fields in the far plume of a Helicon Plasma Thruster  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2020\_331, available at <http://ep2.uc3m.es/> (2021)
151. AUTHORS: J. Perales, A. Domínguez, P. Fajardo, E. Ahedo, F. Faraji, M. Reza, T. Andreussi  
TITLE: Characterization of a 5kw-Class Hall Thruster via 2d Hybrid Simulations  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2020\_391, available at <http://ep2.uc3m.es/> (2021)
152. AUTHORS: A. Sánchez-Villar, M. Merino, E. Ahedo  
TITLE: A Numerical Parametric Investigation on the Optimal Design and Operation of Coaxial ECRTs  
CONFERENCE: Space Propulsion Conference 2020+1, online, 03/2021  
PUBLICATION: paper SP2021\_396, available at <http://ep2.uc3m.es/> (2021)
153. AUTHORS: A. Modesti, J. Zhou, F. Cichocki, A. Domínguez-Vázquez, E. Ahedo  
TITLE: Simulation of the expansion within a vacuum chamber of the plume of a Hall thruster with a centrally mounted cathode  
CONFERENCE: Space Propulsion Conference 2022, Estoril, Portugal, 05/2022  
PUBLICATION: paper SP2022-155, available at <http://ep2.uc3m.es/> (2022)

154. AUTHORS: D. Poli, E. Bello-Benítez, P. Fajardo, E. Ahedo  
TITLE: Non stationary fluid modelling of plasma discharge in Hall thrusters  
CONFERENCE: Space Propulsion Conference 2022, Estoril, Portugal, 05/2022  
PUBLICATION: paper SP2022-116, available at <http://ep2.uc3m.es/> (2022)
155. AUTHORS: A. Marín-Cebrián, A. Domínguez-Vázquez, P. Fajardo, E. Ahedo  
TITLE: Effect of the magnetic field angle on Hall thruster plasma-wall interaction  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-287, <https://erps.spacegrant.org/> (2022)
156. AUTHORS: E. Bello-Benítez, A. Marín-Cebrián, J.J. Ramos, E. Ahedo  
TITLE: Two-dimensional kinetic simulation of electrostatic instabilities in a Hall plasma  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-314, <https://erps.spacegrant.org/> (2022)
157. AUTHORS: A. Modesti, J. Zhou, E. Ahedo, F. Cichocki  
TITLE: A 3D electron fluid model with energy balance for plasma plumes  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-321, <https://erps.spacegrant.org/> (2022)
158. AUTHORS: J. Perales-Díaz, A. Domínguez-Vázquez, P. Fajardo, E. Ahedo, T. Andreussi, A. Piragino  
TITLE: Hybrid 2D plasma simulations of a 20kW-class magnetically shielded Hall effect thruster  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-322, <https://erps.spacegrant.org/> (2022)
159. AUTHORS: A. Domínguez-Vázquez, J. Zhou, A. Sevillano-González, P. Fajardo, E. Ahedo  
TITLE: Analysis of the electron downstream boundary conditions in a 2D hybrid code for Hall thrusters  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-338, <https://erps.spacegrant.org/> (2022)
160. AUTHORS: T. Perrotin, A. Vinci, S. Mazouffre, J. Navarro-Cavallé, P. Fajardo, E. Ahedo  
TITLE: Characterization of a low-power Cylindrical Hall Thruster  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-359, <https://erps.spacegrant.org/> (2022)
161. AUTHORS: M. Merino, D. García-Lahuerta, C. Boyé, J. Navarro-Cavallé, E. Ahedo  
TITLE: Preliminary model of plasma expansion in a magnetic arch thruster (& overview of 1st prototype)  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-423, <https://erps.spacegrant.org/> (2022)
162. AUTHORS: P. Jiménez, J. Zhou, P. Fajardo, M. Merino, E. Ahedo  
TITLE: Numerical Simul. of the Discharge & the Plasma-wave Interaction in a Helicon Plasma Thruster  
CONFERENCE: 37th International Electric Propulsion Conference, Boston, USA, 06/2022  
PUBLICATION: paper IEPC-2022-498, <https://erps.spacegrant.org/> (2022)

### ***Other presentations at international conferences***

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1. AUTHORS: J.J. Anza, J. Alarcón, E. Ahedo, I. da Riva  
TITLE: A new boundary condition solved with BIEM  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 4th Intern. Seminar on Boundary Integral Element Methods, Southampton, UK, 1982
2. AUTHORS: E. Ahedo, J. Sanmartín  
TITLE: Absorption of p-polarized light in a plasma produced by a s-polarized laser  
TYPE OF PARTICIPATION: poster  
CONFERENCE: 17th European Conference on Laser Interaction with Matter (ECLIM), Roma, Italy, 1985
3. AUTHORS: E. Ahedo, J. Sanmartín  
TITLE: Resonance absorption with self-consistent profile modification  
TYPE OF PARTICIPATION: poster  
CONFERENCE: 18th European Conf. on Laser Interaction with Matter (ECLIM), Praga, 1987
4. AUTHORS: E. Ahedo, J. Sanmartín  
TITLE: Self-consistent profile modification and resonance absorption  
TYPE OF PARTICIPATION: poster  
CONFERENCE: 19th European Conf. on Laser Interaction with Matter (ECLIM), Madrid (Spain), 1988
5. AUTHORS: S. Huller, E. Ahedo  
TITLE: Self-consistent plasma profile steepening in presence of arbitrarily polarized laser light  
TYPE OF PARTICIPATION: poster  
CONFERENCE: 21th European Conf. on Laser Interaction with Matter (ECLIM), Varsovia (Poland), 1991

6. AUTHORS: E. Ahedo, J.R. Sanmartín, M. Martínez-Sánchez  
TITLE: Current-voltage response of a spherical plasma contactor  
TYPE OF PARTICIPATION: oral  
CONFERENCE: Intern. Workshop on Physics of Charged Bodies in Space Plasmas, Varenna (Italy), 1991
7. AUTHORS: J.R. Sanmartín, E. Ahedo, M. Martínez-Sánchez  
TITLE: An anodeless tether generator  
TYPE OF PARTICIPATION: oral  
CONFERENCE: Intern. Workshop on Physics of Charged Bodies in Space Plasmas, Varenna (Italy), 1991
8. AUTHORS: M. Martínez-Sánchez, E. Ahedo  
TITLE: One-dimensional flow structure in Hall thrusters  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 98 ICOPS Conference, Raleigh, N. Carolina, USA, 06/1998
9. AUTHORS: J.R. Sanmartín, E. Ahedo  
TITLE: Permanent spacecraft-ionosphere exchange currents  
TYPE OF PARTICIPATION: poster  
CONFERENCE: Europ. Round Table Modelling of SC-Plasma Interact., Noordwijk (Netherlands), 02/2000
10. AUTHORS: J. Peláez, O. López-Rebollal, M. Lara, E. Ahedo  
TITLE: Dynamic stability of a bare tether as a deorbiting device  
TYPE OF PARTICIPATION: oral  
CONFERENCE: AAS/AIAA Space Flight Mechanics Meeting, San Antonio, TE, USA, 01/2002
11. AUTHORS: E. Ahedo, J.M. Gallardo  
TITLE: Low power Hall thrusters: physics, technical constraints and design  
TYPE OF PARTICIPATION: conferencia invitada  
CONFERENCE: Electric Micropropulsion Workshop, Lerici, Italy, 05/2002  
PUBLICATION: Proc. Electric Micropropulsion Workshop, Consorcio Pisa Ricerza, Italy (2002)
12. AUTHORS: F.I. Parra, E. Ahedo  
TITLE: Improvement of the plasma-wall interaction model on a hybrid fluid-PIC simul. of a Hall thruster  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 1st AIAA-Pegasus Student Conference, Toulouse, France, 05/2005
13. AUTHORS: E. Ahedo, D. Escobar  
TITLE: Positive to negative sheath transition at the metallic anode of a Hall thruster  
TYPE OF PARTICIPATION: poster  
CONFERENCE: 48<sup>th</sup> Annual Meeting of Division of Plasma Physics of APS, Philadelphia, NJ, USA, 10/2006
14. AUTHORS: E. Ahedo, D. Carralero  
TITLE: Structure of a magnetized plasma confined between two dielectric walls  
TYPE OF PARTICIPATION: poster  
CONFERENCE: 48<sup>th</sup> Annual Meeting of Division of Plasma Physics of APS, Philadelphia, NJ, USA, 10/2006
15. AUTHORS: S. Barral, E. Ahedo  
TITLE: On the origin of low frequency oscillations in Hall thrusters  
TYPE OF PARTICIPATION: oral  
CONFERENCE: PLASMA 2007, Greifswald, Germany, 10/2007
16. AUTHORS: J. Ramos, E. Ahedo  
TITLE: Progress in the two-fluid theory of the tearing mode  
TYPE OF PARTICIPATION: oral  
CONFERENCE: CEMM Meeting, Boulder, CO, USA, 03/2008
17. AUTHORS: E. Ahedo, J. Ramos  
TITLE: Analytic results for two-fluid tearing modes  
TYPE OF PARTICIPATION: oral  
CONFERENCE: CEMM Meeting, Dallas, TX, USA, 11/2008
18. AUTHORS: E. Ahedo, J. Ramos  
TITLE: Parametric analysis of the two-fluid tearing instability  
TYPE OF PARTICIPATION: póster  
CONFERENCE: 50<sup>th</sup> Annual Meeting of Division Plasma Physics of APS, Dallas, TX, USA, 11/2008
19. AUTHORS: D. Pavarin, E. Ahedo et al.  
TITLE: Helicon Plasma Hydrazine. Combined Micro  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EUCASS 2009 3rd European Conference for Aero-Space Sci.,  
<http://www.eucass2009.com/>, Versailles, France, 07/2009
20. AUTHORS: M. Merino and E. Ahedo  
TITLE: 2D plasma flow in magnetic nozzles for propulsion and processing applications  
TYPE OF PARTICIPATION: póster

- CONFERENCE: 20th ESCAMPIG, Novi Sad, Serbia, 07/2010
21. AUTHORS: M. Merino, E. Ahedo  
TITLE: Detachment mechanisms in a magnetic nozzle for plasma propulsion  
TYPE OF PARTICIPATION: póster  
CONFERENCE: 63rd Gaseous Electronics Conference, Paris, France, 10/2010
22. AUTHORS: R. Santos, E. Ahedo, Y. Raitses, N. Fisch  
TITLE: Numerical results of the Hall thruster discharge with an electrode in the near-plume region  
TYPE OF PARTICIPATION: póster (BAPS.2010.DPP.PP9.18)  
CONFERENCE: 52nd Annual Meeting of the APS Division of Plasma Physics, Chicago, IL, USA, 11/2010
23. AUTHORS: E. Ahedo, D. Pavarin  
TITLE: HPH.COM: Designing a new member of the electric propulsion family  
TYPE OF PARTICIPATION: oral  
CONFERENCE: V CONFERENCE Spanish Space Students, Madrid, 11/2010
24. AUTHORS: M. Merino, C. Bombardelli, E. Ahedo, J. Peláez, H. Urrutxua  
TITLE: La basura espacial: una estrategia de eliminación activa mediante propulsión eléctrica inversa y 'tethers' electrodinámicos  
TYPE OF PARTICIPATION: oral  
CONFERENCE: V Conf. Spanish Space Students, Madrid, 11/2010
25. AUTHORS: M. Merino, I. Martínez, J. Navarro, E. Ahedo  
TITLE: La tobera magnética: un elemento central de futuros motores de plasma  
TYPE OF PARTICIPATION: póster  
CONFERENCE: V Conf. Spanish Space Students, Madrid, 11/2010
26. AUTHORS: H. Urrutxua, C. Bombardelli, M. Merino, E. Ahedo, J. Peláez, L. Summerer  
TITLE: Reversed electric propulsion with electrodynamic tethers  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 6<sup>th</sup> Intern. Workshop 'Spaceflight Dynamics and Control', Covilha, Portugal, 03/2011
27. AUTHORS: C. Bombardelli, J. Peláez, E. Ahedo, H. Urrutxua, M. Merino  
TITLE: The ion beam shepherd, a new concept for asteroid deflection  
TYPE OF PARTICIPATION: oral  
CONFERENCE: IAA Planetary Defense Conference, Bucharest, Romania, 05/2011
28. AUTHORS: E. Ahedo  
TITLE: Plasmas for space propulsion  
TYPE OF PARTICIPATION: plenaria, invitada  
CONFERENCE: 37<sup>th</sup> EPS Conf. on Plasma Physics, Strasbourg, France, 06/ 2011
29. AUTHORS: E. Ahedo  
TITLE: Plasma dynamics in a helicon thruster  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EUCASS 2011, Saint Petersburg, Russia, 07/2011
30. AUTHORS: M. Merino, E. Ahedo, C. Bombardelli, H. Urrutxua, J. Peláez  
TITLE: Ion Beam Shepherd Satellite for Space Debris Removal  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EUCASS 2011, Saint Petersburg, Russia, paper 263, 07/2011
31. AUTHORS: M. Merino and E. Ahedo  
TITLE: Toberas magnéticas en futuros motores espaciales de plasma  
TYPE OF PARTICIPATION: oral  
CONFERENCE: XXXIII Reunión Bienal de la RSEF, Santander, Spain, 09/2011
32. AUTHORS: D. Escobar and E. Ahedo  
TITLE: Transporte anómalo en motores de plasma de efecto Hall  
TYPE OF PARTICIPATION: poster  
CONFERENCE: XXXIII Reunión Bienal de la RSEF, Santander, Spain, 2011
33. AUTHORS: J: Ramos, E. Ahedo  
TITLE: Supersonic regime of the Hall-MHD tearing instability  
TYPE OF PARTICIPATION: poster  
CONFERENCE: APS April meeting 2012, Atlanta, Georgia, USA, 03/2012
34. AUTHORS: M. Merino and E. Ahedo  
TITLE: Advanced simulation of magnetic nozzles for plasma thrusters  
TYPE OF PARTICIPATION: oral  
CONFERENCE: Space Propulsion 2012, Bordeaux, France, 05/2012
35. AUTHORS: J. Navarro, M. Merino, E. Ahedo  
TITLE: Plasma Structure Inside and Outside a Helicon Thruster  
TYPE OF PARTICIPATION: poster

- CONFERENCE: 39th IEEE International Conference on Plasma Science, Edinburgh, UK, 07/2012
36. AUTHORS: M. Merino and E. Ahedo  
TITLE: Advanced Plasma Propulsion with Magnetic Nozzles: Plasma detachment  
TYPE OF PARTICIPATION: póster  
CONFERENCE: 63rd International Astronautical Congress, Naples, Italy, 10/2012
37. AUTHORS: X. Granados, J. Ibarzo, I. Caro, J. Marcos, E. Ahedo  
TITLE: Superconducting magnets: improving weight and performances in electric propulsion of satellites  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 25th International Symposium on Superconductivity (ISS 2012), Tokyo, 12/2012
38. AUTHORS: E. Ahedo  
TITLE: Helicon plasma sources for space propulsion  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 4th Works. on Radio-freq. Discharges, La Presqu'île de Giens, France, 05/2013
39. AUTHORS: E. Ahedo  
TITLE: Presentation of Workshop on Plasma Space Propulsion  
TYPE OF PARTICIPATION: oral  
CONFERENCE: XXXI International Conf. on Phenomena in Ionized Gases, Granada, Spain, 07/2013
40. AUTHORS: J. Navarro, M. Merino, E. Ahedo  
TITLE: Helicon Plasma Thruster: Prototypes and modeling status  
TYPE OF PARTICIPATION: oral  
CONFERENCE: XXXI International Conf. on Phenomena in Ionized Gases, Granada, Spain, 07/2013
41. AUTHORS: M. Merino, E. Ahedo  
TITLE: Key Processes in Plasma Acceleration & Detachment in a Magnetic Nozzle for Adv. Plasma Thrusters  
TYPE OF PARTICIPATION: poster  
CONFERENCE: XXXI International Conf. on Phenomena in Ionized Gases, Granada, Spain, 07/2013
42. AUTHORS: M. Merino, E. Ahedo  
TITLE: Modelling the expansion of magnetized plasma jets in electric propulsion  
TYPE OF PARTICIPATION: invitada  
CONFERENCE: 32nd ICPIG, Iasi, Romania, 07/2015
43. AUTHORS: M. Merino, E. Ahedo  
TITLE: Modeling magnetized plasma jets in electric propulsion  
TYPE OF PARTICIPATION: invitada  
CONFERENCE: Intern. Workshop on Ion Propulsion & Accelerator Indust. Applic., Bari, Italy, 03/2017
44. AUTHORS: E. Ahedo, M. Merino  
TITLE: Magnetized plasma plumes: physics, open problems  
TYPE OF PARTICIPATION: invitada  
CONFERENCE: EXB Plasmas for Space and Industrial Applications, Toulouse, France, 06/2017
45. AUTHORS: E. Ahedo  
TITLE: Overview of Space Technology activities and tools at UC3M  
TYPE OF PARTICIPATION: invitada  
CONFERENCE: International Workshop on Micropropulsion and CubeSats, Bari, June 26-27, 2017
46. AUTHORS: J. Navarro, M. Wijnen, P. Fajardo, M. Merino, E. Ahedo, V. Gómez, Á. Giménez, et al.  
TITLE: Experimental characterization of a 1 kW HPT  
TYPE OF PARTICIPATION: oral  
CONFERENCE: Iberian Vacuum Conference, RIVA-X, Bilbao, 10/2017
47. AUTHORS: F. Cichocki, M. Merino, E. Ahedo  
TITLE: EP2Plus: a hybrid plasma plume/spacecraft interaction code  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 24th SPINE meeting ESTEC, Noordwijk, Netherlands, 10/2017
48. AUTHORS: P. Fajardo, M. Merino, E. Ahedo  
TITLE: An advanced simulation code for Hall effect thrusters  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EPIC Workshop 2017, Madrid, 10/2017
49. AUTHORS: E. Ahedo  
TITLE: Hall effect thrusters  
TYPE OF PARTICIPATION: invitada  
CONFERENCE: EPIC Lectures Series 2017, Madrid, 10/2017
50. AUTHORS: M. Merino, F. Cichocki, M. Wijnen, E. Ahedo  
TITLE: Micro-Propulsion Plasma Plume Measurement and Simulation Conference Contributions  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 2nd Intern. Conf. on Micropropulsion and CubeSats (MPCS-II), Singapore, 01/2028



51. AUTHORS: M. Merino, F. Cichocki, E. Ahedo, J. M. Catalán, A. Domínguez, P. Fajardo  
TITLE: Electron modeling in hybrid plasma thruster plume simulations  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 25th SPINE Workshop, 10/2018
52. AUTHORS: A. Domínguez, P. Fajardo, E. Ahedo  
TITLE: Non-Maxwellian electron VDF features in a Hall thruster chamber  
TYPE OF PARTICIPATION: oral  
CONFERENCE: The Princeton ExB Plasma Workshop 2018, 11/2028
53. AUTHORS: M. Merino, E. Ahedo, J. Navarro, P. Fajardo, G. Sánchez  
TITLE: Magnetic nozzles  
TYPE OF PARTICIPATION: oral  
CONFERENCE: The Princeton ExB Plasma Workshop 2018, 11/2028
54. AUTHORS: A. Domínguez, D. Pérez, A. Sánchez, B. Tian, J. Zhou, P. Fajardo, M. Merino, E. Ahedo  
TITLE: HYPHEN: A multi-thruster simulation platform  
TYPE OF PARTICIPATION: oral  
CONFERENCE: The Princeton ExB Plasma Workshop 2018, 11/2028
55. AUTHORS: X. Chen, J. Navarro-Cavallé, E. Ahedo  
TITLE: Macroscopic Hollow Cathode Modelling: A Variable-Separation Approach  
TYPE OF PARTICIPATION: oral  
CONFERENCE: The Sixth International Conference on Tethers in Space, Madrid, Spain, 06/2019
56. AUTHORS: A. Domínguez Vázquez, J. Zhou, P. Fajardo, E. Ahedo  
TITLE: Simulation of Hall thruster performances with HYPHEN  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EPIC Workshop 2019, Noordwijk, Netherlands, 10/2019
57. AUTHORS: F. Cichocki, A. Domínguez Vázquez, M. Merino, P. Fajardo, E. Ahedo  
TITLE: Simulation of Hall thruster 3D plumes with EP2PLUS  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EPIC Workshop 2019 Noordwijk, Netherlands, 10/2019
58. AUTHORS: J. Perales, F. Cichocki, M. Merino E. Ahedo  
TITLE: Modeling and simulation tools for ion thrusters  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EPIC Workshop 2019, Noordwijk, Netherlands, 10/2019
59. AUTHORS: J. Navarro-Cavallé, M. Wijnjen, M. V. Gómez Gaviro, P. Fajardo, E. Ahedo  
TITLE: Experimental activities at the Electric propulsion and Plasmas Team (EP2- UC3M): an example of an intense testing campaign on the Helicon Plasma Thruster (HPT05M)  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EPIC Workshop 2019, Noordwijk, Netherlands, 10/2019
60. AUTHORS: A. Modesti, F. Cichocki, E. Ahedo  
TITLE: Comparison between Magnetized Plasma Plume Solutions Obtained with Staggered and Collocated 3D Cartesian Grid Schemes  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 48<sup>th</sup> IEEE International Conference on Plasma Science 2021, online, 09/2021
61. AUTHORS: T. Perrotin, P. Fajardo, E. Ahedo  
TITLE: Development of a low-power cylindrical Hall thruster  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 5<sup>th</sup> International Workshop on Micropropulsion and CubeSats, Toulouse, France, 10/2021
62. AUTHORS: E. Ahedo  
TITLE: Modeling propulsion plasma physics  
TYPE OF PARTICIPATION: invited, oral  
CONFERENCE: 39th IVS-IPSTA, online, 11/2021
63. AUTHORS: E. Ahedo  
TITLE: Research activities on plasma propulsion at EP2-UC3M  
TYPE OF PARTICIPATION: oral  
CONFERENCE: EPIC workshop, Koln, Germany, 04/2022
64. AUTHORS: M. Merino, J. Navarro, C. Boyé, P. Jiménez, M. Inchingolo, J. Zhou, E. Ahedo  
TITLE: Radiofrequency plasma heating for electrodeless space thruster applications  
TYPE OF PARTICIPATION: oral  
CONFERENCE: IMPI's 56th Annual Microwave Power Symposium, Savannah, Georgia, USA 06/2021
65. AUTHORS: M. Guaita, J. Zhou, M. Merino, E. Ahedo  
TITLE: A Kinetic Study of the Electron Thermodynamics in a Plasma Plume  
TYPE OF PARTICIPATION: oral

CONFERENCE: 29<sup>th</sup> SPINE meeting, Kiruna, Sweden, 11/2022  
66. AUTHORS: A. Modesti, J. Zhou, E. Ahedo  
TITLE: 3D hybrid PIC-fluid code for plasma thruster plumes interaction with ground facility  
TYPE OF PARTICIPATION: oral  
CONFERENCE: 29<sup>th</sup> SPINE meeting, Kiruna, Sweden, 11/2022