

Angelo Minotti

Current Positions

**Founder and CEO of “MIPRONS s.r.l.”, Micro PROpulsion for Satellites
Founder and CEO of “MIEEG s.r.l.”, Miniaturized Electric Energy Generation**

**MTCR technical expert at UAMA-MAECI
DUAL USE Goods and Technologies export authorization board member at UAMA-MAECI**

Occupational fields

Microcombustion for nanosatellites and energy applications;
Space Propulsion and Space Systems;
Microturbines;
Fluid Dynamics, Real gas, Radiation;
Dual Use Goods and Technologies – Arms Control.

Previous Positions

**Professor of Dual Use of Space Systems
(a.a. 2015/16 and a.a. 2016/17)**
School of Aerospace Engineering, Sapienza University of Rome.
Via Salaria 851, 00138, Rome, Italy.

**Researcher in Dual Use and Arms Control
(10 October 2016 – 09 October 2017)**
School of Aerospace Engineering, Sapienza University of Rome.

**Assistant Professor in Space Systems
(01 August 2013 – 31 July 2016)**
Dept. of Astronautics, Electrics and Energetics Engineering, Sapienza University of Rome.
Via Eudossiana 18, 00184, Rome, Italy.

**Assistant Professor in Space Propulsion
(01 January 2011 – 31 December 2012)**
Dept. of Mechanics and Aerospace Engineering, Sapienza University of Rome.

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PROFESSIONAL EXPERIENCE

International Projects

10 May 2025

EU-EDF, Innovative Thrust Chambers for Hydrogen Based Low Emissivity Propellants, INNCH2PROP
Scientific consortium: MIPRONS Srl (Pi), Fraunhofer Gesellschaft Zur Forderung Der Angewandten Forschung Ev, Vilnius Gedimino Technikos Universitetas, Rigas Tehniska Universitate, Mgm Star Construct Srl, Free Form 3d Srl And Laran Business Srl.

01 April 2025

EUDIS-Cassini-Business-Accelerator 2025, MIPRONS.

14 February 2025

Avio SpA - MIPRONS, "VegaE 4th stage igniter: feasibility study".

10 January 2025

EU-EIC-Accelerator 2024 - MIPRONS, "Alexius – miniaturized water electrolysis space propulsion system".
Seal of Excellence released by the European Innovation Council.

21 December 2024

Defence Science Organization (DSO) of Singapore – MIEEG. "Design Study on Turbine-based Engine and Electrical Power Generator for UAV Applications".

19 December 2024

Industrial Return Project: Ministry of Defence of Italy – L3 Harris – MIEEG. "High-speed H2 turbine test bench assembly and tests", n° 4501990292.

18 July 2023

EU-H2023 HE-RIA, Ceramic rocket Engines based on Liquid and gaseous green propellants for Innovative Use in Space CELSIUS
Evaluation 12; Threshold 10; Funding 13.

Scientific consortium: Fraunhofer Gesellschaft, Fundacion Tecnalia Research & Innovation, National Research and Development Institute for Gas Turbines COMOTI, Technische Universitat Berlin, Universite de Bordeaux - Affiliated partner of CNRS, Institut Polytechnique de Bordeaux - Affiliated partner of CNRS, l'Office national d'études et de recherches aérospatiales (ONERA), ENEA, Consiglio Nazionale delle Ricerche (CNR), Verdes, Ltd. and MIPRONS SRL.

8 March 2018

EU-P2P programme on Dual Use Goods: "Framework contract for the provision of expertise on Strategic Trade Control related activities", EU-P2P Export Control Programme, Researcher.

Scientific consortium: University of Liege, King's College London, Stockholm International Peace Research Institute (SIPRI), The Institute of Customs and International Trade Law (AWA), University of Kent (UoK) and Angelo Minotti.

31 May 2017 – 30 May 2018

EU-P2P programme on Dual Use Goods: "Short term expert under the scope of the EUP2P Export Control Programme for Dual Use Goods". Expertise France, consultancy service.

12 January 2017

EU-H2020 MarieCurie, SMETCUB (Swirling MicroCombustion Chamber and Electro-catalytic Technologies for CUBesat propulsion system).

Evaluation 84.8/100; Threshold 70/100; Funding 85/100.

01 March 2012 – 31 July 2016

EU-F.P.7 - HRC research project: "Hybrid Renewable energy Converter for continuous and flexible power production", Researcher.
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering, Dept. of Astronautics, Electrics and Energetics.

01 October 2010 – 30 November 2012

EU-F.P.7 - ISP-1 research project: "In Space Propulsion-1: CH4/Oxygen Combustion Studies", Researcher.
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering

01 June 2007 - 01 November 2007

EU-FP6 - LAPCAT research project: "Large Eddy Simulations of Shock Boundary Layers Interaction", Researcher.
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering

01 January 2005 – 31 December 2006

E.S.A. F.L.P.P. (Future Launchers Preparatory Program) research project:
"Sub-Trans and Supercritical Combustion Modelling of LO2/CH4 rocket engines for future reusable launchers", Researcher.

Sapienza University of Rome, Dept. Of Aerospace and Mechanical Engineering – AVIO S.p.A.

01 January 2004 – 31 December 2004

N.A.T.O. “low observability” research project: “Infrared (3,5-5µm and 8-12µm) analysis and visibility of a turbojet plume using the NATO Nplume, Modtran and Niratam software”, Researcher.

Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering-Avio S.p.A.

01 May 2003 – 31 December 2003

E.S.A. “Vega” research project: “Plume Radiation Analysis: SRMs & AVUM M.E., of the VEGA launch vehicle”, Researcher.

National Projects

01 July 2025 – 31 December 2026

Funding Project “BREVETTI+, MIPRONS”, Ministry of Economic Development, n. PCT/IB2024/050806.

Development of An innovative electrolyser for space applications.

01 March 2024 – 28 February 2026

Funding Project “Smart & Start, MIPRONS”, SSI0004732, Ministry of Economics, Invitalia.

29 July 2021 – 29 March 2023

Funding Project “BREVETTI+, MIEEG”, Ministry of Economic Development, n. BRE0000901.

Development of a miniaturized hydrogen turbine for electric energy generation.

01 June 2024 – 31 December 2024

Funding Project “Disegni+, MIEEG”, 402022000002403, Ministry of Economic Development.

29 July 2021 – 29 March 2023

Funding Project “BREVETTI+, MIEEG”, Ministry of Economic Development, n. BRE0000901.

Development of a miniaturized hydrogen turbine for electric energy generation.

01 May 2022 – 30 June 2022

Global Start-Up Program 2022, MIPRONS International Scale-Up.

Italian Trade Agency-Ministry of Foreign Affairs-Israel.

01 May 2022 – 30 June 2022

Global Start-Up Program 2022, MIEEG International Scale-Up.

Italian Trade Agency-Ministry of Foreign Affairs-Israel.

19 July 2021 – 19 September 2021

Global Start-Up Program 2020, MIPRONS International Scale-Up.

Italian Trade Agency-Ministry of Foreign Affairs-Houston Mass Challenge.

06 March 2021 – 05 May 2021

Funding Project “Internationalization project, MIPRONS”, Lazio Innova, Regione Lazio, n. A0350-2020-35671.

01 March 2021 – 28 February 2021

Funding Project “Pre-Seed, MIEEG”, Lazio Innova, Regione Lazio, n. F12C20003980006

19 February 2021 – 18 August 2022

Funding Project “BREVETTI+, MIPRONS”, Ministry of Economic Development, n. C81B21000080008

14 February 2021 – 14 April 2021

Global Start-Up Program 2020, MIEEG International Scale-Up.

Italian Trade Agency-Ministry of Foreign Affairs-Dubai Future Foundation.

06 June 2020 – 05 June 2021

Funding Project “Pre-Seed, MIPRONS”, Lazio Innova, Regione Lazio, n. F14E20000300006.

14 May 2019 – 15 November 2019

Global Start-Up Program 2019, MIPRONS International Scale-Up.

Italian Trade Agency-Ministry of Foreign Affairs-Shanghai Technology Innovation Centre.

19 February 2019 – 18 February 2021

Funding Project “Smart & Start”, Invitalia, n. SSI001997.

10 October 2016 – 09 October 2017

“Dual Use and Arms Control”, Researcher. Sapienza University of Rome, School of Aerospace Engineering. Via Salaria 851, 00138, Rome, Italy.

01 October 2013 – 31 July 2015

“Soundy Rockets aerodynamic and propulsion design”, Researcher.
Sapienza University of Rome, Dept. of Astronautics, Electrics and Energetics

01 January 2011 – 31 December 2011; 01 May 2012 – 30 November 2012

Assistant Professor in Aerospace Propulsion
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering

01 July 2011 – 31 December 2011

A.S.I. (Italian Space Agency) “Theseus (Thrusters Evolution for Space Exploration an Upper Stages)” research project, Researcher-Supervisor.
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering-Avio S.p.A.

01 March 2011 – 30 April 2011

“Effects of the aerodynamic force on the missile ejection from an aircraft”, Researcher-Supervisor.
Sapienza University of Rome, School of Aerospace Engineering.

01 March 2010 – 22 September 2012

PRIN 2008 research project: “LES Numerical Simulations of Pressurized Microcombustors for microturbines applications and/or propulsion”, Researcher.
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering.

01 June 2009 - 30 November 2012

“Impact of the k-eps and LES turbulence models on the assessment of the entropy production in a channel”, Researcher.
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering

01 November 2007 – 01 June 2009

PRIN 2006 research project: “RANS and LES Numerical Simulations of Microcombustors for microturbines applications and/or propulsion”, Researcher.
Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering.

National and International Institutions Scientific Advisor

30 January 2024 to present

Member of the Dual Use Goods and Technology Authorization Committee, UAMA (Unità Autorizzativa Materiali d’Armamento), MAECI (Ministry of Foreign Affairs).

03 February 2023 to present

Missile Technology Control Regime (MTCR) Technical Expert at UAMA (Unità Autorizzativa Materiali d’Armamento), MAECI (Ministry of Foreign Affairs).

12-13 April 2017

Missile Technology Control Regime (MTCR), Joint Technical Expert Group, Experts Meeting. By invitation of the Ministry of Foreign Affairs as part of the Italian Delegation (technical expert). Paris.

04 April 2017

Nuclear Supplier Group - Wassenaar, Joint Technical Expert Group, Experts Meeting. By invitation of the Ministry of Foreign Affairs as part of the Italian Delegation (technical expert). Wien.

28 February 2017

Nuclear Supplier Group, Joint Technical Expert Group-Licensing and Enforcement, Experts Meeting. By invitation of the Ministry of Foreign Affairs as part of the Italian Delegation (technical expert). Wien.

7-11 November 2016

Nuclear Supplier Group pre-plenary. By invitation of the Ministry of Foreign Affairs as part of the Italian Delegation (technical expert). Wien.

15 June 2016

Italian candidate to the Seconded National Expert vacancy, “Dual Use Export Control Expert – Joint Comprehensive Plan of Action – Procurement Channel”, Delegation to the European Union to the International Organizations in Wien.

11-12 April 2016

Consultations with Academia in Support of the 1540UN Resolution 2016 Comprehensive Review, by invitation of the United Nations Office for Disarmament Affairs (UNODA).
United Nations, New York.

07 December 2015

Italian Scientific referee, by invitation of the European Commission,
European Forum on Dual Use Technology – Export Control Policy Review.

23 October 2014

Italian Scientific referee, “European Forum on Dual Use Technology – Export Control Policy Review - Italian EU Presidency”, by invitation of the Ministry of Economic Development.

01 September 2011 – 01 August 2012

“Ministry of Economic Development – Sapienza Innovazione Memorandum of Understanding on the Dual Use Goods and Technologies Compliance Analyses”, Scientific Referee.

International Working Groups

BOTTICELLI: Harmonization and effectiveness of the Export Control System (coordinator of the Aerospace sector).

CHAUDFONTAINE: debates, exchanges information as well as considers ways and means to regulate the trade of dual-use items and technologies so as to meet the objectives of security and competition in the European Union.

ESARDA: European Safeguards Research and Development Association.

National and International Private Companies Technical Advisor

01 November 2019 – 30 January 2020

Technical Expert
Dual Use Technology, Reg. EU 2199/2019

02 May 2019 – 30 June 2019

Technical Expert
Dual Use Technology, Reg. EU 1922/2018

01 March 2019 – 30 April

Technical Expert
Dual Use Technology, Reg. EU 1922/2018

15 January 2019 – 30 March 2019

Technical Expert
Dual Use Technology, Reg. EU 1922/2018

10 January 2019 – 01 March 2019

Technical Expert
Dual Use Technology, Reg. EU 1922/2018

03 November 2018 – 10 January 2019

Technical Expert
Dual Use Technology, Reg. EU 2268/2017

27 September 2018 – 30 October

Technical Expert
Dual Use Technology, Reg. EU 2268/2017.

18 May 2018 – 7 September

Technical Expert
Dual Use Technology, Reg. EU 2268/2017, Reg. 1375/2016.

30 April 2018 – 1 July

Technical Expert
Dual Use Technology, Reg. EU 2268/2017, Reg. 1375/2016.

20 February 2018 – 28 May 2018

Technical Expert
Dual Use Technology, Reg. EU 2268/2017, Reg. 1375/2016.

01 December 2017 – 31 December 2017

Technical Expert
Dual Use Technology, Reg. EU 2268/2017, L.185/90

01 May 2017 – 30 September 2017

Technical Expert
Dual Use Technology, Reg. EU 1969/2016, Reg. 1375/2016.

01 November 2016 – 31 December 2016

Technical Expert
Dual Use Technology, Reg. EU 1969/2016, Reg. 1290/2014, Reg. 1375/2016, L.185/90

01 October 2016 – 1 November 2016

Technical Expert
Dual Use Technology, Reg. EU 2024/2015, Reg. 1290/2014

01 July 2016 – 5 October 2016

Technical Expert
Dual Use Technology, Reg. EU 2024/2015, Reg. 1861/2015

01 July 2016 – 31 July 2016

Technical Expert
Dual Use Technology, Reg. EU 2024/2015, Reg. 1861/2015

25 June 2015 – 27 July 2015

Expert Witness
Dual Use Technology, reg. CE 1382/2014 and reg. 401/2013 (Myanmar)

22 May 2015 – 01 July 2015

Technical Expert
Dual Use Technology, reg. CE 1382/2014, reg. 1263/2012 and reg. 833/2014

1 April 2015 – 01 June 2015

Technical Expert
Dual Use Technology, reg. CE 1382/2014 and reg. 1263/2012

10 December 2010 – 02 April 2014

Expert Witness (Full Acquittal)
Dual Use Technology, reg. CE 1334/2000

1 June 2014 – 10 October 2014

Expert Witness (Full Acquittal)
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

15 September 2014 – 10 October 2014

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 833/2014

01 July 2014 – 31 July 2014

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 March 2014 – 31 May 2014

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

14 January 2014 – 30 April 2014

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 December 2013 – 31 March 2014

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 September 2013 – 01 October 2013

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 May 2013 – 01 July 2013

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 March 2013 – 31 July 2013

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 February 2013 – 01 June 2013

Technical Expert
Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 November 2012 – 31 January 2013

Technical Expert

Dual Use Technology, reg. CE 338/2012 and reg. 1263/2012

01 July 2012 – 30 April 2013

Technical Expert

Dual Use Technology, reg. CE 338/2012 and reg. 267/2012

20 July 2012 – 10 September 2012

Technical Expert

Dual Use Technology, reg. CE 338/2012 and reg. 267/2012

1 September 2012 – 30 September 2012

Technical Expert

Dual Use Technology, reg. CE 338/2012 and reg. 267/2012

27 March 2012 – 10 July 2012

Technical Expert

Dual Use Technology, reg. CE 428/2009 and reg. 267/2012

20 October 2011 – 01 March 2012

Technical Expert

Dual Use Technology, reg. CE 428/2009 and reg. CE 961/2010

05 July 2011 – 01 August 2011

Technical Expert

Dual Use Technology, reg. CE 428/2009 and reg. CE 961/2010

01 April 2011 – 01 August 2011

Technical Expert

Dual Use Technology, reg. CE 428/2009 and reg. CE 961/2010

TEACHING RECORDS

14-22 December 2020

Lecturer on “Dual use technologies in the information security”. Master in “Information security and strategic information”, 16 hours – 2 ECTS.

Department of Informatics engineering, Sapienza University of Rome, Italy.

11-14 November 2019

Lecturer on “Dual use technologies in the information security”. Master in “Information security and strategic information”, 16 hours – 2 ECTS.

Department of Informatics engineering, Sapienza University of Rome, Italy.

19-25 May 2019

Lecturer on “Dual Use Goods and Technologies: General Frame, Key Points, MTCR Technical aspects and Test Cases”, Master course, STCU, Kiev, Ukraine.

19 November 2018

Lecturer on “Dual use and swarms of nano-drones”, The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

01 October 2018

Lecturer on “Dual use and Blockchain”, The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

10-24 September 2018

Lecturer on “Dual use technologies in the information security”. Master in “Information security and strategic information”, 16 hours – 2 ECTS.

Department of Informatics engineering, Sapienza University of Rome, Italy.

09 April 2018

Lecturer on “Industries’ experience in facing trade control obligations: teaching lessons learnt to academia”, 8th meeting of the Chaudfontaine Group, Chaudfontaine, Belgium.

27 March 2018

Lecturer on “Technical analysis and dual use aspects of the DPRK missiles”, Argentine Council For International Relations, Institute of International Security and Strategic Affairs -ISIAE-, Buenos Aires, Argentina.

26 March 2018

Lecturer on “The Dual use Regulation: general frame, control regimes and weaknesses”, Pontifical Catholic University of Argentina, Buenos Aires, Argentina.

14 March 2018

Lecturer on “The Dual use Regulation: general frame, control regimes and the North Korea technical issue”. “Workshop on the Export Control of Dual-use Materials and Technologies in GUAM Countries”, by invitation of the Science and Technology Center in Ukraine (STCU). Kiev, Ukraine.

06 February 2018

Lecturer on “The Dual Use Goods list: origin, structure and technical aspects”, presentation of the New Legislative Decree on Dual Use and Sanctions, Milan, Italy.

21 November 2017

Lecturer on “Bio-weapons means of delivery”, The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

18-31 October 2017

Lecturer on “Dual use technologies in the information security”. Master in “Information security and strategic information”, 24 hours – 3 ECTS.

Department of Informatics engineering, Sapienza University of Rome, Italy.

12 October 2017

Lecturer on “the Non-Proliferation Issue, general frame and technical insights”. “Export control on dual-use materials and technologies in central Asia” workshop, by invitation of the International Science and Technology Centre. Astana, Kazakhstan.

27 July 2017

Lecturer on “the Academia outreach in non-proliferation: the Dual Use Space System Course”; 2017 Summer Symposium on Science and World Affairs, UCS (Union of Concerned Scientist), 22-30 July 2017, Technical University of Darmstadt, Germany.

13 June 2017

Lecturer on "Academic outreach in non-proliferation: the Dual Use of Space System academic course", EU-P2P programme on Dual Use Goods, SEE Final Regional Event by invitation. Brussels.

16 March 2017

Lecturer on "Iran-International Communities new relationship: updates to the Reg. "267/2012", The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

1 March 2017 – 1 June 2017

Professor of "Dual Use of Space Systems", 72 hours – 9 ECTS.
School of Aerospace Engineering, Sapienza University of Rome, Italy.

6 December 2016

Lecturer on "new satellite technologies for telecommunications", The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

5 December 2016

Lecturer on "Technical aspects of the Dual Use Regulation", The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

24 November 2016

Lecturer on "Dual Use Technologies and arms control regulations: focus on ammunitions and explosives", Symposium on "Explosives Safety management and Risk analysis", 22-24 November 2016, Defence Ministry – NATO MSIAC.

23 November 2016

Lecturer on "Drones", The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

29 September 2016

Lecturer, "Presentation of the Dual Space Systems course". Center for Information on Security Trade Controls, CISTEC, Tokyo. Botticelli's Project Asian Tour.

30 June 2016

Lecturer on "Information Security and Strategic Information: role in the control of the Dual Use and Arms goods and technologies. UN Resolution 1540, EU Reg. 428/2009 and the Italian Law 185/90", Master of Science in "Strategic Information and Information Security".
Sapienza University of Rome.

17 June 2016

Presentation of the results of the "Dual Space Systems" academic course; "9th JRC-NNSA and ESARDA workshop on export control technical issues", Join Research Centre, Ispra, Italy.

1 March 2016 – 01 June 2016

Professor of "Dual Use of Space Systems", 72 HOURS – 9 ECTS.
School of Aerospace Engineering, Sapienza University of Rome, Italy.

15 April 2016

Lecturer on "IRAN – Dual Use technical analysis", ANIMA, Milan, Italy.

19 January 2016

Lecturer on "Micro-Meso Swirling Combustion Chambers: concepts, projects and future developments", School of Aerospace Engineering, Sapienza University of Rome.

3 December 2015

Presentation of the "Dual Space Systems" academic course. "7th Export Control Working Group Concept Paper: Complying with trade controls in a research setting", JRC-NNSA and ESARDA Export control Working Group seminar. Join Research Centre, Ispra, Italy.

1 December 2015

Lecturer on "Drones and Nanosatellites", The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

06 October 2015

Lecturer on "RUSSIA – Dual Use analysis", ANIMA, Milan, Italy.

16 September 2015

Lecturer on "IRAN – Dual Use analysis", ANIMA, Milan, Italy.

02 September 2015

Lecture on "Micro-Meso Swirling Combustion Chambers: concepts, projects and future developments", Dept. of Mechanical Engineering, Polytechnic of Hong Kong, by invitation of the Head of the Dept. Prof. Wen.

21 July 2015

Lecturer on "Drones and Nanosatellites", the Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

18 March 2015

Lecturer on "Technical aspects of the Micro-Swirling Chambers", Workshop; Sapienza – Gauss – Huznoye.

23 October 2014

Lecturer on "Export Control Policy review - Dual Use Technology technical-scientific and research aspects", European Symposium on Dual Use Technology - Italian EU Presidency, Brussels, by invitation of the Ministry of Economic Development.

19 September 2014

Lecturer on "Russia-Ucraina crisis, Reg. 833/2014 – Dual Use analysis", Milan, Italy.

03 - 14 September 2014

Lecturer – Connoisseur on the subject "Fundamentals of Computational Fluid Dynamics", Dept. of Astronautics, Electrics and Energetic Engineering, Sapienza University of Rome, IT.

07 March 2014

Lecturer on "Dual Use Technology technical-scientific aspects", Ateneo Banca Impresa, Milan, Italy.

15 November 2013

Lecturer on "Arms Control and Dual Use Technology technical-scientific aspects", Ateneo Banca Impresa, Milan, Italy.

04 November 2013

Lecturer - Connoisseur on the subject "Aerodynamic Stability"; Soundy Rocket post graduate course, Sapienza University of Rome, Dept. of Astronautics, Electrics and Energetics.

27 July 2013

Lecturer on "Heat Exchangers and Dual Use Technology"; 2013 Summer Symposium on Science and World Affairs, UCS (Union of Concerned Scientist), Segni (RM), Italy.

10 May 2013

Lecturer on "Arms Control and Dual Use Technology technical-scientific aspects", Ateneo Banca Impresa, Milan, Italy.

07 November 2012

Lecturer on "Dual Use Technology technical-scientific aspects", API (Associazione Piccole Imprese), Varese, Italy.

25 September 2012

Lecturer on "Dual Use Technology technical-scientific aspects", AICE (Associazione Italiana Commercio Estero), Milan, Italy.

10 July 2012

Lecturer on "Dual Use Technology, "May well hole casings be used for nuclear plants?"; 2012 Summer Symposium on Science and World Affairs, UCS (Union of Concerned Scientist), Princeton, US.

16 February 2012

Lecturer on "Dual Use Technology control and security", Course on Intelligence for Asi and Finmeccanica, Link Univ. of Malta, Rome, Italy.

October-December 2011

Professor of "Fluid Dynamics in Turbomachinery";

Mater Degree in Mechanical Engineering at the "Sapienza" University of Rome, Department of Mechanics and Aeronautics, Prof. E. Sciubba, a.a. 2011/12.

8 August 2011

Lecturer on "Dual Use Technology, an effective experience"; 2011 Summer Symposium on Science and World Affairs, UCS (Union of Concerned Scientist), King's College, London.

10 July 2010

Lecturer on “Micro Combustion Technology for Nuclear Security and Arms Control”; 2010 Summer Symposium on Science and World Affairs, UCS (Union of Concerned Scientist), DESY, Hamburg.

10 June 2010

Lecturer - Connoisseur on the subject “Ox/Methane Combustion Studies at low and high Pressure”; Workshop on LOx/Methane Propulsion, Sapienza University of Rome-NASA-Purdue University.

25 May 2009

Lecturer on the subject “ChemKin: Aurora and Equil. applications”, Master Degree in Astronautics at the Aerospace School of Engineering at the “Sapienza” University of Rome.

12 June 2008 and 25 March 2009

Lecturer on the subject “Ideal and Real Gases: Properties, Differences and Practical Consequences”; Master Degree in Astronautics at the Aerospace School of Engineering at the “Sapienza” University of Rome.

February 2008-July 2008

Professor of “Combustion and Fluid Dynamics”;

Bachelor Degree in Mechanical Engineering at the “Sapienza” University of Rome, Department of Mechanics and Aeronautics, Prof. R. Piva, a.a. 2008/09.

September 2007-January 2010

Professor of “Numerical Methods for Astronomy”;

Master Degree in Astronomy at the “Sapienza” University of Rome, Department of Physics and Astrophysics, Prof. R. Capuzzo Dolcetta, a.a. 2007/08, 2008/09 and 2009/2010.

19 December 2006

Lecturer, “LYRA Launch Vehicle plume and nozzle infrared analysis (400 to 5000 cm⁻¹) at different altitudes”.
ENEA la Casaccia Research Centre.

COURSES, SEMINARS, SYMPOSIA and WORKSHOPS

07 December 2023

“PRIMO.INNOVARE”, presentation of the MIPRONS project.
Seattle US.

28 April 2023

“NET-ZERO STRATEGY – Climate-Neutral Campus Initiative”, presentation of the MIEEG project
American University of Beirut, Beirut

21 November 2023

“1st Italian Export Control Forum”, Ministry of Foreign Affairs (MAECI).

28 July 2020

“Presentazione XXXIV rapporto ICE e Annuario 2020”, Istat-ICE.

07 June 2019

“Workshops on Propulsion4Cubesats”, ESA-ESTEC, Noordwijk.

03-06 June 2019

“4TH ESA Cubesat Industry Days”, ESA-ESTEC, Noordwijk.

12 September 2018

Flagship SPACE- Piattaforme Orbitali, Workshop, organized by the Italian Centre of Aerospace Research – CIRA, Capua, Italy, by invitation of the CIRA.

09 April 2018

8th meeting of the Chaudfontaine Group “Do academic activities contribute to WMD proliferation?”, organized by the University of Liege – European Studies Unit, funded by the European Union, Chaudfontaine, Belgium.

14-15 March 2018

EU-P2P programme on Dual Use Goods: “Workshop on the Export Control of Dual-use Materials and Technologies in GUAM Countries”, by invitation of the Science and Technology Center in Ukraine (STCU). Kiev, Ukraine.

06 October 2018

"The New Legislative Decree on Dual Use and Sanctions", seminar. Milan, Italy.

21 November 2017

"Bio-threats and bio-terrorism: actors and scenario", seminar. The Italian President of the Council of Ministers, Security Intelligence Department, Rome, Italy.

12-13 October 2017

EU-P2P programme on Dual Use Goods: "Export control on dual-use materials and technologies in central Asia", Workshop. By invitation of the International Science and Technology Centre. Astana, Kazakhstan.

22-30 July 2017

2017 Summer Symposium on Science and World Affairs, Technical University of Darmstadt; by invitation of the UCS (Union of Concerned Scientists).

12-13 June 2017

EU-P2P programme on Dual Use Goods: SEE Final Regional Event, by invitation. Brussels.

25 October 2016

"Key Enabling Technologies for Dual use, KET4 Dual", Science 14 Atrium, Brussels, Belgium.

29-30 September 2016

"Non-proliferation seminar". Botticelli's Project Asian Tour. Center for Information on Security Trade Controls, CISTEC, Tokyo.

16-17 June 2016

"9th JRC-NNSA and ESARDA workshop on export control technical issues", Ispra, Italy.

15 April 2016

"Focus on IRAN", seminar. ANIMA, Milan, Italy.

11-12 April 2016

Moderator of the panel discussion "Emergent Threats". Consultations with Academia in Support of the 2016 Comprehensive Review, by invitation of the United Nations Office for Disarmament Affairs (UNODA). UN, New York.

29 March 2016

"Intangible Technology Controls in Industry and Academia", Project Alpha, King's College, London. Academia representative on behalf of the Botticelli's Project.

3-4 December 2015

"7th Export Control Working Group Concept Paper: "Complying with trade controls in a research setting", JRC-NNSA and ESARDA Export control Working Group seminar.
Join Research Centre, Ispra, Italy.

30 October 2015

Presentation of the "Botticelli Project", Harmonization and effectiveness of the Export Control System, Workshop, United Nations, NY, USA.

18 September 2015

"Botticelli Project", Harmonization and effectiveness of the Export Control System, Workshop, BUSINESS EUROPE, Brussels.

06 October 2015

"Focus on RUSSIA", seminar. ANIMA, Milan, Italy.

16 September 2015

"Focus on IRAN", seminar. ANIMA, Milan, Italy.

22-23 April 2015

"Seminar on Export Control technical issues: Enhanced dialogue and Best practices for export compliance", JRC-NNSA and ESARDA Export control Working Group seminar.
Join Research Centre, Ispra, Italy.

18 March 2015

Workshop on "Nanosatellites, technical aspects and future applications"; Sapienza – Gauss – Huznoye.

17 March 2015

Workshop on "ICT e Supercalcolo" Workshop, ENEA, Rome, by invitation of the Head of the ICT Dept at ENEA, Dr. S. Migliori.

23 October 2014

"European Symposium on Dual Use Technology", Italian EU Presidency, Brussels, by invitation of the Ministry of Economic Development.

07 March 2014

"Reg. EU 388/2012 on Dual Use Goods and Technologies", seminar. Ateneo Banca Impresa, Milan, Italy.

14-15 November 2013

"L. 195/80 and Reg. EU 388/2012, Arms Control and Dual Use Technology", seminar. Ateneo Banca Impresa, Milan, Italy.

21-28 July 2013

2013 Summer Symposium on Science and World Affairs, UCS (Union of Concerned Scientist), Organizer. Segni, Rome, Italy.

10 May 2013

"L. 195/80 and Reg. EU 388/2012, Arms Control and Dual Use Technology", seminar. Ateneo Banca Impresa, Milan, Italy.

07 November 2012

"IRAN Regulations and Dual Use Technology good exports", seminar. API (Associazione Piccole Imprese), Varese, Italy.

25 September 2012

"L'esportazione dei Beni Duali: aggiornamenti normativi", seminar. AICE (Associazione Italiana Commercio Estero), seminar. Milan, Italy.

6-13 July 2012

2012 Summer Symposium on Science and World Affairs, Princeton, US; by invitation of the UCS (Union of Concerned Scientists).

14-16 February 2012

Course on Intelligence for Asi and Finmeccanica, Link Campus Univeristy of Malta, Rome, Italy.

20 September 2011

2011 Dual-use Exporter Conference, European Commission, Brussels.

3-10 August 2011

2011 Summer Symposium on Science and World Affairs, King's College, London; by invitation of the UCS (Union of Concerned Scientists).

8-17 July 2010

2010 Summer Symposium on Science and World Affairs, DESY, Hamburg; by invitation of the UCS (Union of Concerned Scientists).

10 June 2010

Workshop on "LOx/Methane Propulsion", Sapienza University of Rome-NASA-Purdue University.

10-17 January 2010

International School on Disarmament and Research on Conflicts, ISODARCO: "the Road to Nuclear Zero and Arms Control", Andalo (TN).

15-26 October 2007

International Centre for Theoretical Physics, Trieste: "School on Astrophysical Fluid Dynamics".

THESIS SUPERVISOR

January 2024

Master Degree in "Aerospace Engineering", "Sapienza" University of Rome: "Design of a fuel tank for water electrolysis propulsion".

July 2021

Master of Science in "Information security and strategic information", "Sapienza" University of Rome: "the recast of the EU Reg. 428/09 on Dual Use goods and technologies. The effects on the scientific community".

02 July 2019

Master of Science in "Information security and strategic information", "Sapienza" University of Rome: "UAV and swarms of nano-UAV as asymmetric threat: Dual use goods export control EU Regulation and proposal of technical amendment".

08 June 2018

Master of Science in "Information security and strategic information", "Sapienza" University of Rome: "The Blockchain paradigm and the dual use goods: compliance analysis and proposal as proliferation control tool".

08 June 2018

Master of Science in "Information security and strategic information", "Sapienza" University of Rome: "dual use goods export control: legal frame, weaknesses and the intelligence's function".

18 March 2015

Master Degree in Space and Astronautics Engineering, "Sapienza" University of Rome: "Parachute airdrop of a small launch vehicle: numerical and experimental analysis on a scaled model".

17 December 2013

Bachelor Degree in Aerospace Engineering, "Sapienza" University of Rome: "Aerodynamic control of a sounding rocket".

18 July 2013

Ph.D. in Aerospace Engineering, Aerospace School of Engineering, XXV ciclo. "Studio di un sistema di lancio per microsattelliti aviotrasportato con lanciatore rilasciato da un velivolo cargo"; Aerospace School of Engineering.

28 January 2011

Master Degree in Astronautics Engineering, Aerospace School of Engineering, Sapienza University of Rome: "Modelling of an ablative trust chamber within the THESEUS (Thrusters Evolution for Space Exploration an Upper Stages) project".

14 July 2009

Bachelor Degree in Mechanical Engineering, "Sapienza" University of Rome: "Effects of the post-tip dimension on the anchoring of a CH₄/Air diffusion flame"

PAPERS, BOOKS and TECHNICAL REPORTS

Papers

- Ferrara, D., Minotti, A. et al. "New Space Engineering Design: Characterization of Key Drivers", *Appl. Sci.* 2025, 15, 8138, <https://doi.org/10.3390/app15158138>
- Canta, L., Minotti, A. et al. "Inconel Thrust Chamber Comparison Between 3D Printing and Machined Prototypes". Proceedings of the IEEE MetroAerospace
- Ferrara, D.; Cicconi, P.; Minotti, A.; Trovato, M.; Caputo, A.C. "An Overview of Innovative Space Propulsion Systems: Current Directions and New Technologies", Proceedings of the 5th International Electronic Conference on Applied Sciences, 4–6 December 2024, MDPI: Basel, Switzerland.
- D. Ferrara, P. Cicconi, A. Minotti, M. Trovato, and A. C. Caputo, "The role of the design structure matrix in a streamlined innovative product design approach," in *DS 135: Extended Abstract Proceedings of the 26th International DSM Conference (DSM 2024)*, Stuttgart, Germany, 2024, pp. 17–20.
- Gottipati, N., Minotti, A., et al. "Design Challenges in the Development of a Hydrogen-Fueled Micro Gas Turbine Unit for Energy Generation", *Eng. Proc.* 2025, 85(1), 45; <https://doi.org/10.3390/engproc2025085045>
- Esposito, E., Minotti, A., Fontananova, E., Longo, M., Jansen, J.C. and Figoli, A. "Green H2 production by water electrolysis using cation exchange membrane: new insights on polarization phenomena", *Membranes* 2021, <https://doi.org/10.3390/membranes1469273>
- Coscarella, C. and Minotti, A. "An Institutional Blockchain as a Tool to Control the Export of Dual-Use and Military Goods", *Strategic Trade Review*, Special Issue - Emerging Technologies Winter/Spring 2020, ISSN 2506-9691, pgs. 93-112
- Minotti, A. "A new NANOSATs propulsion system: swirling-combustion chamber and water electrolysis", *AIMS Energy*, 6(3): 402–413; DOI: 10.3934/energy.2018.3.402.
- Pallone, M., Pontani, M., Teofilatto, P. and Minotti, A. "Design Methodology and Performance Evaluation of New Generation Sounding Rockets," *International Journal of Aerospace Engineering*, vol. 2018, 1678709. doi:10.1155/2018/1678709.
- Minotti, A. "Hybrid Energy Converter Based on Swirling Combustion Chambers: the Hydrocarbon Feeding Analysis.", *AIMS Energy*, 2017, 5(3): 506-516. Doi: 10.3934/energy.2017.3.506.
- Minotti, A. "Energy Converter with Inside Two, Three, and Five Connected H2/Air Swirling Combustor Chambers: Solar and Combustion Mode Investigations", *Energies* 2016, 9, 461; doi:10.3390/en9060461.
- Minotti, A. and Teofilatto, P. "Swirling combustors energy converter: H2/Air simulations of separated chambers". *Energies* 2015, 8, 9930-9945.
- Minotti, A., Cozzi, F. and Capelli, F. "CH₄/air Mesocombustor at 3 bar: Numerical simulation and experiments", *International Journal "Applied Mechanics and Materials"*, Vol. 431 (2013), pp. 137-150.
- Minotti, A., Bruno, C. and Cozzi, F. "LES Simulation of CH₄/air Microcombustor with Detailed Chemistry", *Combustion Science and Technology*, Volume 183, Issue 6, 554, 2011.
- Minotti, A. and Bruno, C., "Comparison Between Simulations of Real and Ideal LRE Combustion of LO₂-CH₄", *Recent Patents on Space Technology*, Vol. 2, 2010, 1-9.
- Minotti, A. and Sciubba, E., "LES of a meso combustion chamber with a detailed chemistry model: comparison between the Flamelet and EDM models", *Energies* 2010, 3(12), 1943-1959.
- Minotti, A. and Bruno, C., "Sub-Trans and Supercritical Properties for LO₂-CH₄ at 15MPa", *AIAA Journal of Thermophysics and Heat Transfer*, Vol. 21, issue 4, 796-810, 2007.
- Minotti, A. and Bruno, C., "Comparison between Subcritical Combustion Modelling for LO₂-CH₄ Rocket Engines at 15MPa using Real and Ideal gas properties", *EUCASS 07 proceedings*, 1-6 July 2007, Brussels.
- Minotti, A. and Bruno, C., "Comparison between Supercritical Combustion Modelling for LO₂-CH₄ Rocket Engines at 15MPa using Real and Ideal gas properties", *CEAS 2007 proceedings*, 2007-031, 10-13 September 2007, Berlin.
- Minotti, A. and Bruno, C., "Comparison between Real and Ideal Sub and Supercritical Combustion Simulations for LO₂-CH₄ LRE at 15MPa", *46th AIAA Aerospace Science Meeting and Exhibit*, AIAA-2008-0951, RENO, Nevada, 7-10 January 2008.

Minotti, A. and Bruno, C., "Flame temperatures in non-premixed flames", AIAA Aerospace Science Meeting and Exhibit, AIAA-2008-0998, RENO, Nevada, 7-10 January 2008.

Minotti, A. and Bruno, C., "Comparison between Supercritical Combustion Modelling for LO₂-CH₄ Rocket Engines at 15MPa and 16.5MPa using Real and Ideal gas properties", Space Propulsion 2008 proceedings: 5th International Spacecraft Propulsion Conference & 2nd International Symposium on Propulsion for Space Transportation, s24_095, 5-8 May 2008, Heraklion, Crete.

Minotti, A., Bruno, C. and Cozzi, F., "Numerical Simulation of a Micro-Combustor Chamber", AIAA Aerospace Science Meeting and Exhibit, AIAA-2009-0447, Orlando, FL, 5-8 January 2009.

Minotti, A., Bruno, C. and Cozzi, F., "Micro-Combustor Chamber: Comparison between LES and Experiments", EUCASS 09 proceedings, Versailles, FR, 6-9 July 2009.

Minotti, A., Sciubba, E., "Large Eddy Simulation of an ultra-micro combustion chamber", 6th International Symposium on Turbulence Heat and Mass Transfer, proceedings, 14-18 September 2009, Rome.

Minotti, A., Sciubba, E., "LES simulation of an ultra-micro combustion chamber based on a 177 reactions mechanism", Proceedings of the ASME-2010 10th Biennial Conference on Engineering Systems Design and Analysis, ESDA2010-24170, 12-14 July 2010, Istanbul.

Minotti, A. and Bruno, C., "LES of a CH₄/air Mesocombustor at 3 atm: EDC and Laminar-rate models", AIAA Aerospace Science Meeting and Exhibit, AIAA-2011-888905, RENO, Nevada, 4-7 January 2011.

Petrella, P., Teofilatto, P. and Minotti, A. "Dynamic Separation in Air Launch: A Model", IAA-CU-13-08-04, 2nd IAA Conference on University Satellite Missions and Cubesat Workshop, 4-9 February, 2013, Rome, Italy.

Minotti, A., Cozzi, F. and Capelli, F. "CH₄/air Mesocombustor at 3 bar: Numerical simulation and experiments", 2013 International Conference on Mechanical Engineering, Industrial Materials and Industrial Electronics (MII 2013), Hong Kong, 1-2 Sept 2013.

Minotti A. (2018) Academic Outreach in Non-proliferation: The Dual Space System Course. In: Malizia A., D'Arienzo M. (eds) Enhancing CBRNE Safety & Security: Proceedings of the SICC 2017 Conference. Springer, Cham. https://doi.org/10.1007/978-3-319-91791-7_50

Minotti A. (2018) A Micro-propulsion System to Widen CubeSat's Applications to Security. In: Malizia A., D'Arienzo M. (eds) Enhancing CBRNE Safety & Security: Proceedings of the SICC 2017 Conference. Springer, Cham. DOI https://doi.org/10.1007/978-3-319-91791-7_15.

Gottipati, N., Minotti, A., et al. "Design challenges in the development of a 100% H₂-Air Micro Gas Turbine for energy generation". 53rd AIAS2024, Naples (Italy).

Gottipati, N., Minotti, A., et al. "Development And Optimization Of A Hydrogen-Fueled Micro Scale Combustion System Unit In Gas Turbine For Energy Generation", 21st International Conference On Experimental Mechanics, 6-11 July 2025.

Ferrara, D., Minotti, A. et al. "A design framework for the development of an innovative water-electrolysis space propulsion system", * 35th CIRP Design 2025 Patras, Greece, 02-04/04/2025.

Books

Minotti, A. "O₂/CH₄ kinetic mechanisms for Aerospace Applications at low pressure and temperature, validity ranges and comparison". Aeronautics and Astronautics, InTech, ISBN-978-953-307-473-3, chapter 13, pp. 369-400, 2011.

Technical Reports

ENEA-Report 2016, "CRESCO numerical combustion analysis of swirling micro-meso combustion chambers". High Performance Computing on CRESCO infrastructure: research activities and results 2015, ISBN: 978-88-8286-342-5.

FP7-HRC-Energy-2012, "Hybrid Renewable Energy Converter for continuous and flexible power production", Deliverable D1.5, Simulation models of combustion mode for GEN2 optimized geometries (swirling option), Ref. Energy.2012.10.2.1 FET

FP7-HRC-Energy-2012, "Hybrid Renewable Energy Converter for continuous and flexible power production", Deliverable D8.3, "Preliminary version of Plan for use and dissemination of foreground", Ref. Energy.2012.10.2.1 FET

P.R.I.N. 2008, "Pressurized Microcombustors for microturbines applications and/or propulsion", prot. 2008EZ2NL4, Rome 2012.

FP7-ISP-1, "In Space Propulsion-1", Deliverable D2.3.3, LO_x/CH₄ Combustion Studies: assessment of kinetic mechanism and LES approach, Ref. n. 218849.

P.R.I.N. 2006, "Microcombustors for microturbines applications and/or propulsion", prot. 2006094334, Rome, 2009.

PATENTS

Minotti, A. et al. "Camera di combustione per la produzione di gas caldo", PCT/IB2024/052634, granted in Italy.

Minotti, A. et al. "Dispositivo elettrochimico con struttura di cella a stack modulabile", PCT/IB2024/050806, granted in Italy.

Minotti, A. et al. "Dispositivo elettrochimico atto a funzionare da elettrolizzatore e da cella a combustibile", PCT/IB2023/055819

Minotti, A. "Sistema di propulsione spaziale a bassa ed alta spinta (low and high thrust space propulsion system)", PCT/IB2021/061166, granted in Italy, EU and USA.

Minotti, A. "Space propulsion system", PCT/IB2018/055595, granted in Italy, Japan, India, EU, Israel, Australia, UAE & US.

Minotti, A. "Electrical energy generation device", PCT/IB2018/052036, granted in Italy, China, HK, USA, Canada, India, EU, South Korea, Japan, Israel & UAE.

Minotti, A. and Ollier, E. "Combustion module offering an improved gas combustion". PCTEP2016/051024.

EDUCATION and TRAINING

31 July 2008 – 30 June 2010

Post doc in Aerospace Propulsion

"Advanced methodologies for the simulation and design of ultra-micro turbogas combustion chambers"

Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering.

01 October 2004 - 12 February 2008

Ph.D. in Theoretical and Applied Mechanics

"Modelling of O₂/CH₄ Liquid Rocket Engines injector combustion at Subcritical and Supercritical conditions"

Sapienza University of Rome, Dept. of Aerospace and Mechanical Engineering-Avio S.p.A.

01 September 2002 - 22 April 2005

Special Master Degree in Astronautics (110/110 cum laude)

"Plume and nozzle infrared radiative heat load on the structure of the 3rd stage of the LYRA launch vehicle".

Aerospace School of Engineering of the Sapienza University of Rome.

01 May 2003 - 17 December 2003

Master of Science in Space Transportation Systems

"Plume Radiation Analysis: SRMs & AVUM M.E., of the VEGA launch vehicle".

Aerospace School of Engineering of the Sapienza University of Rome-Avio S.p.A.

01 October 1994 - 22 May 2002

Master Degree in Mechanical Engineering (105/110)

"Development of the k-w turbulence model on a finite elements code for the solution of fluid dynamics field of turbomachinery interest."

Sapienza University of Rome.

PERSONAL SKILLS and COMPETENCES

Mother Tongue

Italian

Other Languages

English: C1 level, proficient user (understanding, speaking and writing)

Operating systems

Windows9X-ME; XP; Unix, Linux.

Programming languages

Turbo Pascal; Fortran 77-90.

Software

Missile Datcom;

N.A.S.A. C.F.D. codes: K.I.V.A., BOAT and SHIP;

N.A.T.O. radiative codes: Modtran, Niratam and Nplume;

Ansys-Fluent; OpenFoam; GAMBIT;

ChemKin; C.E.A.

TECPLOT; finite elements code XENIOS;

Power Point; Word; Excel; Matlab.

Driving licences

A, B.

I authorize the treatment of my personal data according to the D.Lgs 196/2003 and modified by the D.Lgs 101/2018

02 September 2025

Angelo Minotti, Ph.D.