PERSONAL INFORMATION

Matteo Fiore

✉ matteo.fiore@uniroma1.it

WORK EXPERIENCE

April 2020 – November 2020 | ### Post-Graduate Research Fellowship

Sapienza University of Rome, Rome, Italy

– CFD conjugate heat transfer simulations aiming to assess heat transfer enhancement due to the application of longitudinal ribs to the hot-gas surface of LRE combustion chambers
– Development of a numerical framework for the preliminary design of rocket engines sound suppression systems with water injection

June 2013 – August 2013 | ### Internship

General Tecnica SRL, Monte San Giovanni Campano (FR), Italy

CNC machining center programming to produce components of automated assembly lines

EDUCATION AND TRAINING

November 2020 – Present | ### PhD in Aeronautics and Space Engineering

Sapienza University of Rome, Rome, Italy

Research area: CFD conjugate heat transfer analyses to study performance of conventional and ALM cooling channels for liquid rocket engines, involving working fluids in both supercritical and subcritical conditions

January 2022 – June 2022 | ### Visiting PhD

Von Karman Institute for Fluid Dynamics, Sint-Genesius Rode, Belgium

Experimental characterization of subcooled flow boiling in 3D printed minichannels

October 2017 – January 2020 | ### Master of Science in Space and Astronautical Engineering

Sapienza University of Rome, Rome, Italy

Final mark: 110/110 with Honors

Thesis: *Analysis of friction, heat loads and spike truncation impact on the performance of an annular plug nozzle designed for a launcher upper stage*, feasibility study of an annular plug nozzle designed as a replacement of a bell nozzle for a 10-tons class LOX/CH4 rocket engine through CFD simulations

July 2017 | ### CVA Summer School

Institut Supérieur de l'Aéronautique et de l'Espace ISAE-SUPAERO, Toulouse, France

Multidisciplinary courses on Space Transportation Systems

October 2014– October 2017 | ### Bachelor of Science in Aerospace Engineering

Sapienza University of Rome, Rome, Italy

Final mark: 110/110 with Honors

Thesis: *Design and experimental testing of a small-scale KNSU-based solid propellant rocket motor*

PERSONAL SKILLS

Mother tongue   Italian

Other languages

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English				
C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills
– Experience in public speaking acquired through presentation of scientific results
– Good communication skills. Participation to group activities with people from different backgrounds and countries
– Good team working skills. I have worked in various types of teams from research teams to volunteer groups

Computer skills
– Operating systems: Linux, Mac OS, Windows
– Programming: Fortran, Matlab, Python, small knowledge of C/C++
– Software: Office Suite, CFD++, Ansys, IDM-CIC, Solid Edge, EcosimPro

Other skills   Passionate about music and drums. Love to travel and experience different cultures

PUBLICATIONS

[1]   F. Petricca, E. Del Vecchio, **M. Fiore**, A. Lazzaro, A. Valeriani, L. Pollice, and P. Gaudenzi. "Experiencing a concurrent engineering environment for the preliminary design of a mission to Titan". In: *XXV International Congress of the Italian Association of Aeronautics and Astronautics (AIDAA)*. 2019.

[2]   F. Nasuti, **M. Fiore**, V. Messina, A. Valeriani, and D. Bianchi. "Design and evaluation of aerospike nozzles for an upper stage application". In: *7th edition of the Space Propulsion Conference SP2020+1*. 2021.

[3]   B. Latini, **M. Fiore**, and F. Nasuti. "Heat transfer prediction in rough cooling channels for liquid rocket engines". In: *XXVI International Congress of the Italian Association of Aeronautics and Astronautics (AIDAA)*. 2021.

[4]   B. Latini, **M. Fiore**, and F. Nasuti. "Analysis of coolant flow and heat transfer in highly rough channels for LRE". In: *9th European Conference for Aeronautics and Aerospace Sciences (EUCASS)*. 2022.

[5]   M. T. Migliorino, M. G. Leone, V. Lomanno, T. De Rito, S. Coluzzi, M. Tortorolo, M. Della Monica, A. Cantiello, E. Corradini, C. Salustri L. Di Giovannandrea, **M. Fiore**, and D. Bianchi. "Student Activities in Manufacturing and Launching Advanced Small-Scale Solid-Propellant Rockets". In: *73rd International Astronautical Congress (IAC)*. 2022.

[6]   B. Latini, **M. Fiore**, and F. Nasuti. "Modeling liquid rocket engine coolant flow and heat transfer in high roughness channels". In: *Aerospace Science and Technology* (2022), pp. 1–12.

[7]   P. M. Zolla, **M. Fiore**, P. E. Lapenna, D. Bianchi, and F. Nasuti. "A design strategy for water-based noise suppression systems in liquid rocket engines firing tests". In: *CEAS Space Journal* (2022), pp. 1–15.

[8]   **M. Fiore**, F. Nasuti, M. Pizzarelli, and N. Ierardo. "HEM modeling for subcritical flows in liquid rocket engine cooling systems". In: *AIAA AVIATION 2022 Forum*. 2022, pp. 1–10.