Marco Grossi

WORK EXPERIENCE

DIMA, SAPIENZA UNIVERSITY OF ROME – ROME, ITALY

RESEARCH ENGINEER – FEB 2022 – CURRENT

The research activity is focused on both liquid and solid rocket propulsion. CFD and low-order tools are employed to investigate several important issues such as combustion stability, motor performance, and heat loads.

DIMA, SAPIENZA UNIVERSITY OF ROME – ROME, ITALY

RESEARCH ENGINEER – FEB 2021 – MAR 2022

"Technical Support Activities for VEGA-C, VEGA-E, and P120C" financed by ESA ESRIN

- Investigation of ballistic performance and unsteady behavior during the static firing tests of Vega C second stage Z40.
- CFD analyses of the internal ballistics of Vega Z9A motor to assess multiphase effects on the nozzle erosion and performances.

DIMA, SAPIENZA UNIVERSITY OF ROME – ROME, ITALY

RESEARCH ENGINEER – DEC 2019 – JUL 2020

"Technical Support to P120C QM2 Static Firing Test" financed by ESA Headquarters

Cross-check analysis and risk assessment regarding ignition transient and quasi-steady-state pressure oscillations phenomena in the frame of P120C solid rocket motor firing tests.

DIMA, SAPIENZA UNIVERSITY OF ROME – ROME, ITALY

RESEARCH ENGINEER – JUN 2018 – DEC 2018

"Technical Support Activities for VEGA-C, VEGA-E and P120C" financed by ESA ESRIN

Analysis of ballistic performance, unsteady behaviour and extrapolation to flight unit of the first static firing test of VEGA-C second stage Z40.

DIMA, SAPIENZA UNIVERSITY OF ROME – ROME, ITALY

GRADUATE RESEARCH FELLOW – MAY 2018 – NOV 2018

Numerical and theoretical study of acoustics phenomena in aft-finocyl solid rocket motors by means of Q1D modelling.

EDUCATION AND TRAINING

2018 – 2022 Rome, Italy
PH.D. IN SPACE AND AERONAUTICAL ENGINEERING Sapienza University of Rome

Research activity is mainly focused on pressure oscillations occurring in solid rocket motors. Both CFD and Q1D approaches are employed, exploiting fully reagent multi-phase modelling in order to take care of flow-field phenomenology.Other solid propulsion topics as ignition transient, internal ballistic flow and performance evaluations are addressed in the research work.

Field of study Aerospace Engineering

SEP 2014 – JAN 2018 Rome, Italy
MASTER DEGREE IN SPACE AND ASTRONAUTICAL ENGINEERING Sapienza University of Rome

Fundamental Teachings: Solid and Liquid Propulsion, Gasdynamics, Space Flight Mechanics, Aerospace Structures, Control Systems

Final grade 110/110 cum laude |

Thesis Numerical Simulation of SRMs Internal Ballistic Flow by means of an Immersed Boundary Method

SEP 2011 – NOV 2014 Rome, Italy
BACHELOR DEGREE IN AEROSPACE ENGINEERING Sapienza University of Rome

SKILLS

Programming

UNIX Shell script | Fortran (professional experience) | Git | Python (computer programming) | CMake (With Cross Compiling)

Development Environment

MATLAB&Simulink | Intel VTune Profiler

Scientific Applications

ParaView | FreeCAD | TecPlot360 (Optimal Knowledge) | GMSH

Office Applications

MS office/Latex; (Full proficiency, daily use)

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C1	B2	B2	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

TEACHING EXPERIENCE

2022 – 2024
Master Degree in Space and Astronautical Engineering at Sapienza University of Rome

• Gas Dynamics Tutoring

2019 – CURRENT
Master Degree in Space and Astronautical Engineering at Sapienza University of Rome

• Solid Rocket Motors Ignition System

2017 – CURRENT
Master in Space Transportation System at Sapienza University of Rome

• Solid Rocket Motor Ignition Transient
• Pressure and Thrust Oscillations in Solid Rocket Motors