

Francesco Marra (26/01/1979) from 2011 is a non-tenure Assistant Professor (Sapienza – University of Rome, Faculty of Civil & Industrial Engineering – Dept. of Chemical Engineering Materials Environment). The main research activity is related to the project: “Nanostructured composites materials for aerospace applications: development and study of production process and technologies for surface functionalization. Production of high performance ablatives materials for control of fluid-structure interaction”.

Ph.D. (2013) in Materials Engineering at Dept. of Chemical Engineering Materials Environment Sapienza – University of Rome. Thesis on “Thermal spray coatings development for new-gen thermal barriers”

M.Sc. (5 years course) in Aerospace Engineering (2006) at Sapienza – University of Rome, Faculty of Civil & Industrial Engineering. Thesis on “Nanostructured coatings for anti-wear and thermal barrier applications” (101/110).

From 2006 to 2007 junior researcher at Dept. of Chemical Engineering Materials Environment and at INSTM (Interuniversity National Consortium on Materials Science and Technology) in the framework of “NANOKER” european FP6 project.

From 2007 to 2008 winner of a grant for an education course for industrial researcher. MATRIS Consortium (Sapienza – Tor Vergata – RomaTre – Centro Sviluppo Materiali S.p.A.).

From 2009 to 2011 non-tenure track research fellow at Dept. of Chemical Engineering Materials Environment Sapienza – University of Rome. Research title: “Wear resistant coatings from nanostructured precursors by traditional and liquid injection assisted thermal spray”.

Teaching activity at IFTS training course (ISCED 4) “Technician for aeronautical structures made by composite material” (2008 and 2010)

Two times winner (2009 and 2010) of the AIMAT NETWORK COMPETITION grant during the XV and XVI AIMAT summer school.

Attended (March-July 2012) the advanced training course RED, Research Enhancement and Development, Sapienza – University of Rome.

Participant in several research projects such as:

- Integrated Project NANOKER (Structural ceramic nanocomposites for top end functional applications), WP5 “Surface functionality and composites” and SP10 “Aeroengines”, 2006 - 2009;
- Research project Sapienza - AST, “Wear resistant coatings from nanostructured precursors by traditional and liquid injection assisted thermal spray”, 2008;
- University research project, “Self-lubricating coatings obtained by liquid injection assisted thermal spray”, 2010
- Integrated University-Industry Project STRALE “Materials and surface treatments for aerospace light-weight structures”

Main recent publications:

G. Di Girolamo, F. Marra, L. Pilloni, G. Pulci, J. Tirillò, T. Valente

Microstructure and Wear Behavior of Plasma-Sprayed Nanostructured WC-Co Coatings (2013) International Journal of Applied Ceramic Technology, 10 (1), pp. 60-71.

G. Di Girolamo, F. Marra, C. Blasi, E. Serra, T. Valente

Microstructure, mechanical properties and thermal shock resistance of plasma sprayed nanostructured zirconia coatings.

(2011) *Ceramics International*, 37 (7), pp. 2711-2717.

I.M. De Rosa, F. Marra, G. Pulci, C. Santulli, F. Sarasini, J. Tirillò, M. Valente

Post-impact mechanical characterisation of E-glass/basalt woven fabric interply hybrid laminates

(2011) *Express Polymer Letters*, 5 (5), pp. 449-459.

I.M. De Rosa, F. Marra, G. Pulci, C. Santulli, F. Sarasini, J. Tirillò, M. Valente

Post-Impact Mechanical Characterisation of Glass and Basalt Woven Fabric Laminates

(2011) *Applied Composite Materials*. Article in press.

M. Valente, F. Sarasini, F. Marra, J. Tirillò, G. Pulci

Hybrid recycled glass fiber/wood flour thermoplastic composites: Manufacturing and mechanical characterization.

(2011) *Composites Part A: Applied Science and Manufacturing*, 42 (6), pp. 649-657.

G. Pulci, M. Tului, J. Tirillò, F. Marra, S. Lionetti, T. Valente

High temperature mechanical behavior of UHTC coatings for thermal protection of re-entry vehicles.

(2011) *Journal of Thermal Spray Technology*, 20 (1-2), pp. 139-144.

F. Marra, G. Pulci, J. Tirillò, C. Bartuli, T. Valente

Numerical simulation of oxy-acetylene testing procedure of ablative materials for re-entry space vehicles.

(2011) *Proceedings of the Institution of Mechanical Engineers Part L-Journal of Materials*, 225 (1), pp. 32-40.

M. Tului, S. Lionetti, G. Pulci, F. Marra, J. Tirillò, T. Valente

Zirconium diboride based coatings for thermal protection of re entry vehicles: Effect of MoSi₂ addition

(2010) *Surface and Coatings Technology*, 205 (4), pp. 1065-1069.

G. Pulci, J. Tirillò, F. Marra, F. Fossati, C. Bartuli, T. Valente

Carbon-phenolic ablative materials for re-entry space vehicles: Manufacturing and properties

(2010) *Composites Part A: Applied Science and Manufacturing*, 41 (10), pp. 1483-1490.

F. Cipri, F. Marra, G. Pulci, J. Tirillò, C. Bartuli, T. Valente

Plasma sprayed composite coatings obtained by liquid injection of secondary phases

(2009) *Surface and Coatings Technology*, 203 (15), pp. 2116-2124.

G. Di Girolamo, L. Piloni, G. Pulci, F. Marra

Tribological characterization of WC-Co plasma sprayed coatings

(2009) *Journal of the American Ceramic Society*, 92 (5), pp. 1118-1124.