

# Prof. MARIA RICHETTA



## Contact details

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## Languages

**Native Language:** Italian

**Others:** English  
Reading skills: excellent  
Writing skills: excellent  
Verbal skills: excellent

## Personal Information

**Nationality:** Italian  
**Date of birth:** 02.02.1960

## Current Position

Assistant Professor of Design for Additive Manufacturing  
(SSD ING-IND/15, SC 09/A3)  
Rome "Tor Vergata" University – Department of "Industrial Engineering".

Member of the "Industrial Engineering" PhD Programme Committee of Rome "Tor Vergata" University

Member of the International Laboratory: "Laboratory Ionomer Materials for Energy (LIME)" established between the University of Rome Tor Vergata, Aix-Marseille University, and CNRS. <http://ingegneriaindustriale.uniroma2.it/research/international-laboratory-lime/>

## Education

Master Degree in Physics at the University of Rome "La Sapienza"  
PhD in Thermo-Physical Properties of Materials at the University of L'Aquila

## Teaching

General Physics I – 12 CFU  
Design and Construction of Machines – 3 CFU

## Research Activities

- Design of biomimetic structures with controlled architecture obtained through Additive Manufacturing technique.
- Multiphysics finite elements simulations and model validation through chemical-physical experimental testing.
- Design of micro- and nano- advanced composites for structural/functional applications.
- Computer-aided design (cad) and finite element (fe) analysis of biomedical metal devices.
- Study of metal-posts material-shape combination on mechanical behaviour of additively manufactured devices.
- Tailoring of mass transport and mechanical properties of additively manufactured structures.
- Materials of interest for fusion reactors (tungsten, ferritic steels)
- Mechanical spectroscopy analysis of materials stability. Characterization by means of strummed nano-indentation.
- Study of oxidative treatments on TiH<sub>2</sub> powders, and analysis of their diffusion.
- Nanomaterials synthesis, analysis and characterization.
- LDH (Layered Double Hydroxides) characterization, morphological analysis, investigation of the growth mechanism. Study of the anticorrosive properties of ZnAl-LDH layers, on metal substrates (2024T3 anodized and non-anodized steel).

## Web Pages

[Research gate](#)

[Scientific Publications](#)

[Google Scholar](#)

## Scientific Publications (last 5 years)

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1. 2020. Surface morphological features of molybdenum irradiated by a single laser pulse. DOI:10.3390/coatings10010067. pp.67. In COATINGS - ISSN:2079-6412 vol. 10 (1), Montanari, R; Pakhomova, E; Rossi, R; Richetta, M; Varone, A
2. 2019 Effect of Al substrate microstructure on layered double hydroxide morphology. DOI:10.1007/s10853-019-03711-5. pp.12437-12449. In JOURNAL OF MATERIALS SCIENCE - ISSN:0022-2461 vol. 54 (19) Richetta, M; Ciotta, E; Montanari, R; Narducci, R; Pizzoferrato, R; Varone, A
3. 2019. AA7050 al alloy hot-forging process for improved fracture toughness properties. pp.1-6. In METALS - ISSN:2075-4701 vol. 9 (1) Angella, G; Di Schino, A; Donnini, R; Richetta, M; Testani, C; Varone, A
4. 2019. Layered Double Hydroxides (LDH): applicazioni di interesse per la metallurgia. In LA METALLURGIA ITALIANA - ISSN:0026-0843 Richetta, M; Varone, A; Pizzoferrato, R
5. 2019. Alloys for aeronautic applications: State of the art and perspectives. DOI:10.3390/met9060662. pp.662. In METALS - ISSN:2075-4701 vol. 9 (6) Gloria, A; Montanari, R; Richetta, M; Varone, A
6. 2019. Metal posts and the effect of material–shape combination on the mechanical behavior of endodontically treated anterior teeth. DOI:10.3390/met9020125. pp.125. In METALS - ISSN:2075-4701 vol. 9 (2) Gloria, A; Maietta, S; Richetta, M; Ausiello, P; Martorelli, M
7. 2019. A further analysis on Ti6Al4V lattice structures manufactured by selective laser melting. DOI:10.1155/2019/3212594. pp.3212594. In JOURNAL OF HEALTHCARE ENGINEERING - ISSN:2040-2295 vol. 2019 Maietta, S; Gloria, A; Improta, G; Richetta, M; De Santis, R; Martorelli, M
8. 2019. Low pressure fusion exhaust gases separation. DOI: 10.1016/j.fusengdes.2019.03.012. pp.1665-1669. In FUSION ENGINEERING AND DESIGN - ISSN:0920-3796 vol. 146 De Meis, D; Richetta, M; Serra, E; Louradour, E
9. 2018 Hydrogen release from oxidized titanium hydride. DOI: 10.4028/www.scientific.net/MSF.941.2203. pp.2203-2208. In Materials Science Forum. In MATERIALS SCIENCE FORUM - ISSN:0255-5476 vol. 941 Gambini, M; Montanari, R; Richetta, M; Stilo, T; Varone, A; Vellini, M
10. 2018 Temperature dependent mechanical behavior of ods steels. DOI: 10.4028/www.scientific.net/MSF.941.257. pp.257-262. In Materials Science Forum. In MATERIALS SCIENCE FORUM - ISSN:0255-5476 vol. 941 De Sanctis, M; Fava, A; Lovicu, G; Montanari, R; Richetta, M; Testani, C; Varone, A
11. 2018-11. Preparation, intercalation, and characterization of nanostructured (Zn, Al) layered double hydroxides (LDHs). DOI:10.1002/sia.6468. pp.1094-1098. In SURFACE AND INTERFACE ANALYSIS - ISSN:0142-2421 vol. 50 (11) Richetta, M; et al.
12. 2018-06. Development of a smartphone-based reader for the quantitative analysis of lateral flow assays. DOI: 10.4028/www.scientific.net/MSF.941.2522. pp.2522-2527. In MATERIALS SCIENCE FORUM - ISSN:0255-5476 vol. 941 MSF Schneider, S; Selig, M; Keil, V; Lehmann, M; Foitzik, Ah; Casalboni, M; Richetta, M
13. 2018. Ionic conductivity of Zn–Al layered double hydroxide films grown on aluminum substrate. DOI: 10.1016/j.ssi.2017.11.011. pp.30-35. In SOLID STATE IONICS - ISSN:0167-2738 vol. 314 Pizzoferrato, R; et al.
14. 2018. Layered Double Hydroxides Containing an Ionic Liquid: Ionic Conductivity and Use in Composite Anion Exchange Membranes. DOI:10.1002/celc.201800807. In CHEMELECTROCHEM - ISSN:2196-0216 Pizzoferrato, R; Ciotta, E; Ferrari, Iv; Narducci, R; Pasquini, L; Varone, A; Richetta, M.
15. 2018. Portable System for the Measure of Efficiency in Arc Welding Processes. DOI: 10.4028/www.scientific.net/MSF.941.2384. pp.2384-2389. In THERMEC 2018 - ISBN:978-3-0357-1208-7. In MATERIALS SCIENCE FORUM - ISSN:0255-5476 Barbieri, G; Bifaretti, S; Bonaiuto, V; Cognini, F; Moncada, M; Montanari, R; Pipolo, S; Richetta, M.
16. 2018. Laser Beam Welding of IN792 DS Superalloy. DOI: 10.4028/www.scientific.net/MSF.941.1149. pp.1149-1154. In THERMEC 2018 - ISBN:978-3-0357-1208-7. In MATERIALS SCIENCE FORUM - ISSN:0255-5476 Barbieri, G; Cognini, F; Bonaiuto, V; Montanari, R; Richetta, M; Varone, A
17. 2018. W-1% La<sub>2</sub>O<sub>3</sub> submitted to a single laser pulse: Effect of particles on heat transfer and surface morphology. DOI:10.3390/met8060389. pp.389. In METALS - ISSN:2075-4701 vol. 8 (6) Gaudio, P; Montanari, R; Pakhomova, E; Richetta, M; Varone, A
18. 2018. Surface phenomena during the early stage of liquid phase SPS of a mixture of coarse WC and Ni-alloy particles. DOI:10.1002/sia.6418. pp.1072-1076. In SURFACE AND INTERFACE ANALYSIS - ISSN:0142-2421 vol. 50 (11) Maizza, G; Montanari, R; Richetta, M; Varone, A; Kaciulis, S; Mezzi, A; Soltani, P
19. 2018. Oxidative treatment effect on TiH<sub>2</sub> powders. DOI:10.1002/sia.6428. pp.1195-1199. In SURFACE AND INTERFACE ANALYSIS - ISSN:0142-2421 vol. 50 (11) Kaciulis, S; Soltani, P; Mezzi, A; Montanari, R; Lapi, G; Richetta, M; Varone, A; Barbieri, G
20. 2018. Continuous dynamic recrystallization (CDRX) model for aluminum alloys. DOI:10.1007/s10853-017-1845-4. pp.4563-4573. In JOURNAL OF MATERIALS SCIENCE - ISSN:0022-2461 vol. 53 (6) Maizza, G; Pero, R; Richetta, M; Montanari, R
21. 2018. An innovative industrial process for forging 7050 Al alloy. DOI: 10.4028/www.scientific.net/MSF.941.1047. pp.1047-1052. In Materials Science Forum. In MATERIALS SCIENCE FORUM - ISSN:0255-5476 vol. 941 Tedde, Gm; Di Schino, A; Donnini, R; Montanari, R; Richetta, M; Santo, L; Testani, C; Varone, A
22. 2018. Novel methodology for the selection, dosing and on-line control of corrosion inhibitors for industrial acid

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  26. 2017. The use of vibrotactile stimulation for improving manual tasks in Parkinson's Disease patients. DOI: 10.4028/www.scientific.net/MSF.879.2348. pp.2348-2351. In MATERIAL SCIENCE FORUM, Volume 879, 2017, Pages 2348-235, ISSN: 1662-9752; THERMEC 2016; Code 186759 - ISBN:978-303571129-5 vol. 879 Gentili, S; Richetta, M; Mugnaini, S; Mancini, S; Staderini, E
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  28. 2017. Laser pulse effects on plasma-sprayed and bulk tungsten. DOI:10.3390/met7110454. pp.454. In METALS - ISSN:2075-4701 vol. 7 (11) Montanari, R; Pakhomova, E; Pizzoferrato, R; Richetta, M; Varone, A
  29. 2017. Acciaio ferritico ODS per il settore nucleare. pp.59-67. In LA METALLURGIA ITALIANA - ISSN:0026-0843 vol. 109 (10) Lovicu, G; Fava, A; Montanari, R; Pizzoferrato, R; Richetta, M; Varone, A; Testani, C
  30. 2017. Miniaturized laser power sensor via rapid phototyping. DOI: 10.4028/www.scientific.net/MSF.879.1721. pp.1721-1724. In MATERIALS SCIENCE FORUM - ISSN:0255-5476 vol. 879 Schneider, S; Beyer, H; Lange, K; Bohmeyer, W; Casalboni, M; Richetta, M; Foitzik, Ah
  31. 2017. ODS ferritic steel for nuclear reactors. pp.59-67. In LA METALLURGIA ITALIANA - ISSN:0026-0843 vol. 109 (10) Lovicu, G; Fava, A; Montanari, R; Pizzoferrato, R; Richetta, M; Varone, A; Testani, C
  32. 2017. Electron beam welding of IN792 DS: Effects of pass speed and PWHT on microstructure and hardness. DOI:10.3390/ma10091033. pp.1033. In MATERIALS - ISSN:1996-1944 vol. 10 (9) Angella, G; Barbieri, G; Donnini, R; Montanari, R; Richetta, M; Varone, A
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  35. 2017. Mechanical characterization of a nano-ODS steel prepared by low-energy mechanical alloying. DOI:10.3390/met7080283. pp.283. In METALS - ISSN:2075-4701 vol. 7 (8) De Sanctis, M; Fava, A; Lovicu, G; Montanari, R; Richetta, M; Testani, C; Varone, A
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  37. 2017. Study of 13CR-4NI-(MO) (F6NM) steel grade heat treatment for maximum hardness control in industrial heats. DOI:10.3390/met7090351. pp.351. In METALS - ISSN:2075-4701 vol. 7 (9) De Sanctis, M; Lovicu, G; Buccioni, M; Donato, A; Richetta, M; Varone, A
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  39. 2016-05-07. Effects of local vibration therapy on lower limb's sensorimotor control in workers suffering from diabetic foot - State of arts and study on a new prevention and therapeutic system. pp.202-213. In JOURNAL OF DISEASE AND GLOBAL HEALTH - ISSN:2454-1842 vol. 7 (4) Gentili, S; Uccioli, L; Mugnaini, S; Lella, D; Richetta, M; Magrini, A.
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  41. 2016. Surface spectroscopy and structural analysis of nanostructured multifunctional (Zn, Al) layered double hydroxides. DOI:10.1002/sia.5973. pp.514-518. In SURFACE AND INTERFACE ANALYSIS - ISSN:0142-2421 vol. 48 (7) RICHETTA, M et al.
  42. 2016. Real-time vehicle emissions monitoring using a compact LiDAR system and conventional instruments: first results of an experimental campaign in a suburban area in southern Italy. DOI:10.1117/1.OE.55.10.103107. pp.103107. In OPTICAL ENGINEERING - ISSN:0091-3286 vol. 55 (10) Parracino, S; Richetta, M; Gelfusa, M; Malizia, A; Bellecci, C; De Leo, L; Perrimezzi, C; Fin, A

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