PERSONAL INFORMATION

Marta Miola

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- Google Scholar profile: https://scholar.google.com/scholar?hl=it&as_sdt=0%2C5&q=marta+miola&btnG=
- Scopus: https://www.scopus.com/authid/detail.uri?authorId=24780028900
- Research gate: https://www.researchgate.net/profile/Marta-Miola

SSD: ING-IND/22

Sex Female | *Date of birth* 15/07/1978 | *Nationality* Italian

Enterprise	University	EPR
☐ Management Level	☐ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
☐ Mid-Management Level	☒ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

(May 2024 – to date)

Associate Professor

Politecnico di Torino, Department of Applied Science and Technology -DISAT - Institute of Materials Physics and Engineering, Turin, Italy

- Research activity: planning coordination and realization of research activities on the development of bioactive glasses and glass-ceramics with therapeutic effects (antibacterial, osteointegration, pro-angiogenic, antioxidant) using i) modulation of the composition, ii) functionalization with biomolecules (e.g. polyphenols) and in situ reduction of nanoparticles iii) atmospheric plasma treatments. Development of magnetic or magneto-plasmonic nanoparticles.
- Teaching activity (lessons in materials science field), supervisor of master and doctoral students

Business or sector Education and research

(May 2021- May 2024)

Senior Assistant Professor (RTD-B)

Politecnico di Torino, Department of Applied Science and Technology -DISAT - Institute of Materials Physics and Engineering, Turin, Italy

- Research activity: planning coordination and realization of research activities on the development of bioactive glasses and glass-ceramics with therapeutic effects (antibacterial, osteointegration, pro-angiogenic, antioxidant) by means of i) modulation of the composition, ii) functionalization with biomolecules (e.g. polyphenols) or iii) atmospheric plasma treatments.
- Teaching activity (lessons in materials science field), supervisor of master and doctoral students

Business or sector Education and research

(July 2018 - May 2021)

Assistant Professor (RTD-A)

Politecnico di Torino, Department of Applied Science and Technology -DISAT - Institute of Materials Physics and Engineering, Turin, Italy

- Research activity: planning, coordination and realization of research activities on (i) the development of bioactive glasses and glass-ceramic with therapeutic effect, functionalization of glasses/ceramics

with biomolecules (e.g. polyphenols); (ii) the in situ reduction of metal nanoparticles with sustainable biomolecules (e.g. tannic acid, gallic acid); (iii) the development of magnetic and plasmonic nanoparticles for cancer treatment, using green reducing agents obtainable from plant residues that would become waste.

- Teaching activity (lessons in materials science field), supervisor of master and doctoral students

Business or sector Education and research

(September 2016 - February 2018)
(Maternity leave 05/11/2016 – 05/05/2017 and 03/07/2017 - 31/07/2017)

Post Doc Research fellow (art. 22 law 30/12/2010 n. 240)

Politecnico di Torino, Department of Applied Science and Technology -DISAT - Institute of Materials Physics and Engineering, Turin, Italy

- Research activity: planning, coordination and realization of research activities concerning the development of magnetic/multifunctional nanoparticles for tumor treatment, the design of multifunctional glasses/glass-ceramics (antibacterial, bioactive, ferrimagnetic…).
- Teaching activity (lessons in materials science field), supervisor of master and doctoral students

Business or sector Education and research

(September 2013 – September 2016)

Post Doc Research fellow (art. 22 law 30/12/2010 n. 240)

Department of Health Science, Università del Piemonte Orientale "Amedeo Avogadro", Novara, Italy.

- Research activity: planning and realization of the research activities concerning the synthesis of magnetic and core-shell nanoparticles for tumor treatment.

Business or sector Education and research

(July 2013-September 2013)

Post Doc Research scholarship

Department of Health Science, Università del Piemonte Orientale "Amedeo Avogadro", Novara, Italy.

- Research activity: planning and realization of the research activities concerning the synthesis of magnetic and core-shell nanoparticles for tumor treatment.
- Teaching activity (lessons in materials science field), supervisor of master students

Business or sector Education and research

(July 2009 – July 2013)
(Maternity leave from 29/08/2012 to 29/01/2013)

Post Doc Research fellow

Politecnico di Torino, Department of Applied Science and Technology -DISAT - Institute of Materials Physics and Engineering, Turin, Italy

- Research activity: planning and realization of experimental activities on the development of bioactive and antibacterial glasses/glass-ceramics and composite bone cement, antibacterial thin films, ferrimagnetic glass-ceramics.
- Teaching activity (lessons in materials science field), supervisor of master students, collaborator of Spin-off Bionica Tech

Business or sector Education and research

(February 2009 – July 2009)

Research collaboration

Politecnico di Torino, Materials Science and Chemical Engineering Dep., Turin, Italy

- Research activity: planning and realization of experimental activities on biomaterials and antibacterial activity. Preparation and characterization of new composite biomaterials, with antibacterial properties by adding drugs or inorganic agents.
- Teaching activity (lessons in materials science field), supervisor of master students

Business or sector Education and research

(January 2008 – January 2009)

Post Doc Research scholarship

Politecnico di Torino, Materials Science and Chemical Engineering Dep., Turin, Italy

- Research activity: design and characterization of bioactive glasses/glass-ceramics doped/functionalized with antibacterial ions or drugs
- Teaching activity (lessons in materials science field), supervisor of undergraduate students

Business or sector Education and research

EDUCATION AND TRAINING

(2005 - 2007) **PhD Biomedical Engineering, Politecnico di Torino, Turin, Italy** *EQF 8*

Thesis: “Synthesis and characterization of biomaterials for the prevention of post-surgery infections”. Main experimental skills acquired during PhD: Synthesis and characterization of glasses, glass-ceramic materials and their composites with antibacterial properties for the prevention of post-operative infections. Thermal, structural, mechanical, morphological, compositional, reactivity and microbiological characterization of materials in the form of powders, bulk, coatings, micro and macroporous structures (scaffolds) and composites.

(2005) **Qualifying examination for professional activity in Materials Engineering - Politecnico di Torino, Turin, Italy**

(1998 - 2004) **Master’s degree in Materials Engineering, Politecnico di Torino, Turin, Italy** *EQF 7*

Thesis: “Vetri biocompatibli ad azione antibatterica per dispositivi di osteosintesi”. Main topic of the master courses: Materials science, Science and technology of ceramic, polymeric and metallic materials, Biomaterials, Biomechanics, Polymers for special applications.

WORK ACTIVITIES

Main projects

The main research activities are: i) the design and characterization of glasses and ceramics for biomedical and materials engineering applications, ii) synthesis and characterization of magnetic and magneto-plasmonic nanoparticles, iii) physical or chemical surface modification of biomaterials by means of surface functionalization or plasma treatments. Principal investigator of a PoC_Nodes_PNRR project and participation in the Politecnico di Torino research unit activities of 10 Italian and 4 EU projects, and one Round Robin Test.
Involvement in numerous national and international collaborations (e.g. Università del Piemonte Orientale – Novara, Università degli studi di Padova, Università di Torino, Università di Milano, Istituto Italiano di Tecnologia – Genova, Italy, Brigham and Women's Hospital-Boston- USA, Jožef Stefan Institute- Ljubljana-Slovenia, Trinity College- Dublin- Ireland, University of Erlangen-Nuremberg-Germany, Newcastle University-UK, University of Tampere- Tampere- Finland) and interdisciplinary collaborations with national and international companies.

Tutoring activities

Supervisor of 38 master students, 2 bachelor students of Materials Science or Biomedical Engineering and 4 doctoral students in Materials Science or Bioengineering and Medical-Surgical Sciences.
Overall tutor for more than 50 master students, 16 bachelor students, 2 foreign doctoral students and 6 doctoral students

Awards

III prize award for best poster at Euro BioMAT 2015, Weimar, Germany. Co-author of poster “Development Of Engineered Iron-Oxide Nanoparticles By Lentiviral Vectors For Target Cancer Therapy”

Editorial activity

Editorial Board Member of “Materials” (ISSN 1996-1944), Section "Biomaterials"; Guest Editor for the Special Issue "Nanoparticles for Medical Applications: Progress in Surface Modification" in Nanomaterials (ISSN 2079-4991).
Guest Editor for the Special Issue "Drug Delivery of Natural Active Principles: Focus on Topical and Oral Applications" in Pharmaceutics (ISSN: 1999-4923)
Expert referee for several international journals (e.g. Acta Biomaterialia, Materials Science and Engineering C, Materials Letters…).

Invited presentations

Invited speaker at:

- Nanomat-2023, 25-27 September, Barcellona, Spagna
- GFMAT-2/Bio-4 July 21–26 2019, Toronto, Canada;
- European Orthopaedic Research Society (EORS) 25 – 28th September 2018, Galway, Ireland;
- workshop “Micro- and Nano-Technologies for Health”, June 2017, Torino, Italy;
- workshop “Research and Nanomedicine”, June 2018, Pavia, Italy;
- edition 2017 of “Giovedì Letterari” – Update in Orthopedics and Traumatology, Torino, Italy.

Grants

June 2012- September 2012 contract of collaboration (Politecnico di Torino, Coll. N. 36/12 / CC) "Bibliographic research and patent investigation on the use of composite cements for orthopedic use with antibacterial properties". Activity carried out in collaboration with Bionica Tech S.r.l. Spin-off of the Politecnico di Torino and with national companies (Tecres S.p.A and G21 S.r.l.)

Patents

1. Baino F.; Perero S.; Miola M.; Ferraris S.; Verné E.; Ferraris M. (2012). Rivestimenti e trattamenti superficiali per impartire proprietà antibatteriche a dispositivi per oftalmoplastica. (TO2012A000512).
2. Vitale-Brovarone C; Verne'E; Bergui M; Onida B; Baino F; Miola M; Ferraris S.; Tallia F (2010). Cementi ossei compositi iniettabili, osteoinduttivi ed a rilascio di farmaci - Injectable osteoinductive bone cements. (TO2010A000401, PCT/IB2011/052094).
3. Verné E; Miola M.; Ferraris S; Massé A; Bistolfi A; Crova M; Maina G (2010). Cementi ossei compositi a matrice di PMMA, contenenti vetrie vetroceramici bioattivi ed antibatterici - Composite bone cements with a PMMA matrix, containing bioactive antibacterical galsses or glassceramics. (TO2009A000518, PCT/IB2010/053181, EP2451493A2, WO2011004355A2, WO2011004355A3)
4. Vernè E., Vitale Brovarone C., Miola M. (2010). Vetri biocompatibili a rilascio di oligoelementi essenziali. (TO2010A001083).
5. Ferraris M; Chiaretta D; Fokine M; Miola M; Verne' E. (2008). Pellicole antibatteriche ottenute da sputtering e procedimento per conferire proprietà antibatteriche ad un substrato. (TO2008A000098, PCTIB2009050476).

ADDITIONAL INFORMATION

Mother tongue: Italian

Other languages: English: 6.5 IELTS

Relevant Publications (last 5 years):

1 Miola M. et al.; Journal of Non-Crystalline Solids, 2023, 622, 122653
2 Piatti, E. et al.; Ceramics International, 2022, 48(10), pp. 13706–13718
3 Miola, M. et al.; Materials science and engineering. C, biomimetic materials, sensors and systems, vol. 123, pp. 1-12.
4 Miola, M. et al.; Surface and Coatings Technology, 2021, 418, 127183
5 Miola, M.et al.; Applied Surface Science, 2019, 495, 143559

In 2017 she obtained the "National Scientific Qualification to function as Associate Professor in Italian Universities" sector 09/D1

Total number of publications in peer-review journals: 125
Total number of citations: 3317 (Scopus)
H index: 32 (Scopus)

Turin, 15/07/2024