

PERSONAL INFORMATION

Federica Bondioli



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WORK EXPERIENCE

2019 - **Full Professor of Materials Science and Technology**
Politecnico di Torino (I)
Department of Applied Science and Technology

- Teaching activity: Ceramic science and technology course for the Bachelor in Materials Engineering
- Research activity in the field of preparation and characterization of innovative materials for Additive Manufacturing

2020 - **President of the Italian National Consortium for Materials Science and Technology – INSTM**

2017 - **Co-founder of MAT3D srl**
 Co-founder of MAT3D srl (www.mat3d.it). MAT3D is an inter-university spinoff company for the design, development, production and commercialization of innovative polymer-based materials for additive manufacturing (stereolithography, digital light processing, fused deposition modelling).

2019 - **ANVUR quality assurance system expert**
 Initial accreditation of private Universities and study courses (2020)

2017 - **ANVUR disciplinary expert**
 Initial accreditation of study courses in Engineering (2018, 2020)
 Periodic accreditation of the Universities of Udine (2017), Salerno (2018) and Bari (2018).

2014 - 2018 **Associate Professor of Materials Science and Technology**
University of Parma (I)
Department of Engineering and Architecture

- Teaching activity: Material science and technology course for the Bachelor in Civil Engineering and Materials for packaging course for the Master in Food Engineering
- Research activity in the field of innovative polymer and composite for Additive manufacturing mainly SLA and DLS

Coordinator of the University Quality Assurance System (PQA, 2016-2018)

- Under her supervision, the University has been certified by ANVUR among the Italian Universities of Grade A (Periodic accreditation of Universities and their programmes)

- 2006 - 2013 **Associate Professor of Materials Science and Technology**
University of Modena and Reggio Emilia (I)
Department of Engineering "Enzo Ferrari"
- Teaching activity: Material science course for the Bachelor in Mechanical Engineering and Nanomaterial and nanotechnologies course for the Master in Materials Engineering
 - Research activity in the field of preparation and characterization of smart coatings with functional properties for tiles, plastics and Cultural Heritage
- Vice-Director of the Department of Engineering "Enzo Ferrari" (2012-2014)**
- 2002 - 2006 **Assistant Professor of Materials Science and Technology**
University of Modena and Reggio Emilia (I)
Department of Engineering "Enzo Ferrari"
- Teaching activity: Material science course for the Bachelor in Mechanical Engineering
 - Research activity in the field of preparation and characterization of pigments for ceramics and glazes.
- 1999 - 2001 **Post-doc of Materials Science and Technology**
University of Modena and Reggio Emilia (I)
Department of Engineering "Enzo Ferrari"
- Teaching activity: Laboratory of Ceramic materials course for the Bachelor in Materials Engineering
 - Research activity in the field of preparation and characterization of pigments for ceramics and glazes.

EDUCATION AND TRAINING

- 1996 - 1998 **PhD in Chemical Science**
 University of Modena
 Department of Chemistry
 Scientific Tutor: Prof. G.C. Pellacani
 PhD thesis title: Synthesis, characterisation and reactivity of solid solutions belonging to the $(Al,Cr)_2O_3$ system
- 1990 - 1995 **Degree in Chemistry (110/110)**
 University of Modena
 Department of Chemistry
 Scientific Tutor: Prof. G.C. Pellacani
 Experimental thesis title: Glassy system for the production of glazes for ceramic tiles: structure and durability

RESEARCH ACTIVITIES

Research Area

The research activity of Federica Bondioli is focused on the development of innovative materials for additive manufacturing (polymeric and composites materials for stereolithography and digital light printing process) and on the development and characterisation of metallic powders obtained by gas atomization for powder-bed fusion techniques. The activity can be distinguished in:

a) design, development and characterization of innovative materials for polymer-based additive manufacturing technologies. Currently, specific fields of research are the study of i) bio-based resins; (ii) agrowaste and bio-based materials (i.e. nanocellulose) as fillers materials; (iii) *in situ*

formation of metallic nanofillers; (iv) functional composites, characterized by electric or magnetic properties;

b) design, development and characterization of metallic powders obtained for additive manufacturing by gas atomization. The main activity is focused on new alloy development and powder characterisation in terms of rheology, flowability, microstructure and particle size distribution.

Federica Bondioli is author or co-author of more than 160 publications in international peer-review journals and 6 book chapters, and more than 50 presentations in national and international conferences.

She is currently Editor of Materials and acts as peer-reviewer for the main journals related to ceramic and coating science such as Journal of the European Ceramic Society, Dyes and Pigments, Journal of Material Science, Ceramics International, Materials and Design, Microchemical Journal.

She also acted as project evaluator for several national and international funding bodies such as FIRB 2013– MIUR (Italia); Italian-Israeli call of proposal on Scientific and technological cooperation (2015-2017); Romanian National Council for Scientific Research (2012 and 2015).

She is member of the Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM) and she is member of the Board of AIMAT, the National Association of Material Engineering (2017-date).

She has been scientific Principal investigator of many regional, national (PRIN2007) and international research projects (bilateral project Italy-Israel 2015-2016 funded by MAECI entitled "NANO4HER - Nanotechnology for Cultural Heritage"; bilateral project Italy-Turkey 2012-2014 funded by the MAE from title "Smart surfaces for traditional ceramic tiles"; bilateral project of great importance Italy-Egypt 2009-2011 financed by the MAE entitled "Innovative dry grinding technologies for obtaining ceramic products with high added value with low environmental impact") and is currently involved in two European projects: TRESCLEAN - High Throughput laser texturing of Self-CLEANing and antibacterial surfaces funded by the EU under the call H2020-ICT-2015, and DREAM - Driving up Reliability and Efficiency of Additive Manufacturing, funded by EU under the call H2020-IND-CE-2016-17 (Industry 2020 in the Circular Economy), topic FOF-13-2016 (Photonics Laser-based production).

Regarding the technology transfer, she had and has many research projects with national and international partners connected to the traditional ceramic comparison (Marazzi Group, Ceramiche Polis, Metco, Inco, Rhodia, Expert System Solutions ...) and to processing of materials through additive manufacturing techniques (Prima Industrie, 3DNT, 2A ...). Finally, she is co-founder of MAT3D srl (www.mat3d.it). MAT3D is an inter-university spinoff company for the design, development, production and commercialization of innovative polymer-based materials for additive manufacturing (stereolithography, digital light processing, fused deposition modelling).

Researcher identifiers

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