

## PERSONAL INFORMATION

## Carmelo De Maria



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Sex Male Nationality Italian

### Recent work EXPERIENCE

Dec 2022 -

#### Associate professor in Bioengineering

- Dpt. of Information Engineering (DII), University of Pisa
- Scientific Field: Bioengineering IBIO-01/A (previously ING-ING/06)
- Member of the Assembly and of the Board for "Quality in Teaching" of the Degree Courses in Biomedical Engineering
- Affiliated at the Research Center E. Piaggio of University of Pisa (since 2016)
- Affiliated at the CISUP Center for Sharing of Scientific Instrumentation
- Research Responsible (RAR) at the Biofabrication Laboratory of the Research Center E. Piaggio
- Member of the Managing group of the Crosslab Additive Manufacturing of the DII
- Member of the Ethical Committee of the University of Pisa

### EDUCATION AND TRAINING

Selection

2009 - 2012

#### PhD in Chemical and Materials Engineering

- Dpt. of Chemical Engineering, Industrial Chemistry and Material Science – University of Pisa (Italy)
- PhD Supervisors: Prof. G. Vozzi, Prof. G. Cerulli
- **Thesis title:** "Indirect microfabrication of biomimetic materials for locomotor tissues regeneration". The research was focused on the fabrication of scaffolds for locomotor tissue engineering following the indirect micro-fabrication approach, using sacrificial moulds, built with low melting point materials, and two different additive manufacturing techniques, continuous flow and the inkjet printing. Part of the research was carried out, from September 2010 to June 2011, at the University of Texas at El Paso (US), in the laboratory of Prof. T. Boland.

2006 - 2008

#### Master's Degree in Biomedical Engineering

- Industrial curriculum –Vote: 110/110 cum laude
- Faculty of Engineering – University of Pisa (Italy)
- **Thesis title:** "Design and fabrication of a Bioreactor for mechanical stimulation", carried out at the Interdepartmental Research Center "E. Piaggio" in Pisa, in collaboration with Institute of Clinical Physiology of Pisa of the Italian National Research Council. The results of the thesis brought to the international patent WO2011/121377A1.

### WORK RELATED SKILLS

Scientific indicators

Researcher unique identifiers:

• ORCID: 0000-0002-1368-3571

Research ID: AAC-8978-2021

The research of Carmelo De Maria is focused on additive manufacturing technologies and their application in biomedical engineering. Furthermore, he has contributed to the development of the UBORA platform, a virtual design framework for co-design open-source medical devices (1200+ active users). His research activities are demonstrated by (according to Scopus on 23/05/2023):

- Scientific documents 162 (Paper in indexed scientific journal: 114, Chapter in books: 14)
- H-Index: 23 (Citations: 2492)

De Maria has edited 2 book and has served 3 special issues as Guest Editor. He is inventor of 4 patents (PI2007A000001, Date 2007-01-07; WO2011/121377A1, Date 2011-10-06; ITPG20120028A1, Date 2013-11-26; WO2019211803A1, Date 2019-11-07).

Coordination and active participation in international and national projects (selection)

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|-------------|---|
| 2023 – 2025 | Coordinator of the PRIN Project "PROMETHEUS: 4D printing self-deploying bio-enabled polymer scaffolds for the non-invasive treatment of bleeding intestinal ulcers"   |
| 2022 – 2023 | Coordinator of the Research Project "Endiadi" Open Toolkit per la dialisi domiciliare funded by Tuscany Region program GiovaniSI  |
| 2019 – 2023 | Responsible of the Research unit of the PRIN 2017 Project "Vision: Development and Promotion of the Levulinic acid and Carboxylate platforms by the formulation of novel and advanced PHA-based biomaterials and their exploitation for 3D printed green-electronics applications". |
| 2020 – 2022 | Coordinator of the research project funded by the University of Pisa PRA2020 "mOSALc: Open Source as key enabling approach for Artificial Intelligence in healthcare".  |
| 2020 – 2022 | Responsible of teaching activities for the Jean-Monnet project ELATE European Health Law and Technology funded under the Erasmus+ Action – Jean Monnet Module – No 621002-EPP-1-2020-1-IT-EPPJMO-MODULE.  |
| 2019 – 2023 | Team member of the H2020 Project GIOTTO (Active aGelng and Osteoporosis: The next challenge for smarT nanobiOmaterials and 3D technologies GA814410) Role: optimization of bioprinting process of scaffolds for bone tissue engineering.  |
| 2020 – 2022 | Team member of the UNIFI regional project "TRITONE SmarTbioactive peRsonalised and Implantable 3DprinTed scaffold for tendON regeNERation". Role: bioprinting of scaffolds for tendon   |

		regeneration.
	2017 – 2021	Work Package Leader (WP2) in the M-ERA.Net project BIOMEMBRANE (Bioengineered in vitro model of retinal pigmented epithelium of human eye; Coordinator Prof. Vozzi, University of Pisa).
	2017 – 2019	Work Package Leader (WP4) and Coordinator Contact in the H2020 project UBORA (Euro-African Open Biomedical Engineering e-Platform for Innovation through Education GA 731053; Coordinator Prof. Arti Ahluwalia, University of Pisa). This project was ranked in the top 10 EU funded projects for its impacts on society.
	2018 – 2020	Work Package Leader (WP5) in the Manunet project KERAPACK (A novel integrated approach for the reduction, recycling and reuse of poultry feathers by keratins based packaging manufacturing; Coordinator Prof. Giovanni Vozzi, University of Pisa).
	2018 – 2019	Technical coordinator the project IMAGO (Italian MexicAn working Group on biOfabrication for the development of a multimaterial and multiscale bioprinting system for 3D muscular tissue in vitro model, Principal Coordinator Prof. Giovanni Vozzi) funded by MAECI and AMEXIC.
Scientific supervision of students and scholars	<ul style="list-style-type: none"> <li>■ Number of Postdocs: 4 (2 running)</li> <li>■ PhD students: 7 (5 running) – PhD School in Information Engineering, University of Pisa</li> <li>■ Research scholarship: 3 (1 running)</li> <li>■ Master Students: 22 as supervisor – Master’s Program in Biomedical Engineering, University of Pisa</li> </ul>	
Organisation of scientific meetings	2022	International Conference on Biofabrication 2022. Sept. 25-28Montecatini (Italy). Program chair
	2019	“Italian Digital Biomanufacturing Network Conference”. Oct 28-30, Pisa, Italy.
	2018	“First International Conference on Collaborative Biomedical Engineering for Open Source Medical Technologies”, Sept 1-2, Pisa (Italia), with the endorsement of EAMBES. Scientific and Technical organization
	2018	Workshop “Open-source medical devices: safety and reliability”, during the 4th WHO Global Forum on Medical Devices, Dec. 13-15 2018, Visakhapatnam (India). Main Organizer
Reviewing of project and scientific products	2021 –	Appointed as External Evaluation Expert for the European Cooperation in Science and Technology
	2020 –	External Evaluation Expert for the National Science Center of Poland
	2019 –	Member of PhD Examination Board at Politecnico di Turin, Turin, Italy
	2017 –	Editorial board di The Open Biomedical Engineering Journal (Bentham Open - <a href="https://openbiomedicalengineeringjournal.com/editorial-board.php">https://openbiomedicalengineeringjournal.com/editorial-board.php</a> )
	2012 –	Reviewer activities for relevant journal (eg. 3D printing and additive manufacturing, Scientific Reports, Tissue Engineering, ...). Excellent reviewer according to Pabloons
Technology Transfer	2022	Founder Member of Bio3DPrinting Srl, spin off company of the University of Pisa and part of the Solidworld Group.
Membership of scientific societies	2019	Founding Member of the “Gruppo Nazionale di Bioingegneria”. Member of the group, before the formal foundation of this scientific society, since 2011
	2019	Member of the Centro Interuniversitario per la Promozione dei Principi delle 3R nella Didattica e nella Ricerca,
	2015 – 2017	Member COST Action BM1302 “Joining Forces in Corneal Regeneration Research”
	2013	Secretariat of the African Biomedical Engineering Consortium (ABEC)
	2009	Member of the International Society for Biofabrication. Part of the “Membership Committee” since Sept 2019.
Presentations on invitation in well-established and renowned conferences and schools	2021	Invited lecturer at the XL Italian PhD School in Bioengineering, 13-16 Sept 2021in Brixen (Italy). Title: <i>4D printing: smart materials and technologies for biomedical applications.</i>
	2018	Invited speaker in plenary session at the WHO 4th Global Forum on Medical Devices (Dec 13-15, 2018, Visakhapatnam, India). Title: <i>UBORA e-infrastructure: Collaborative design of open source medical devices toward health equity</i>
	2018	Invited speaker at 3D Medical Conference 2018 (Jan 30-31, 2018, MECC Maastricht). Title: <i>“Multimaterial and Multiscale Biofabrication of 3D in vitro models of complex tissues”</i>
	2016	Co-chair in the European chapter 2016 of TERMIS conference (Uppsala June 28th- July 1st 2016) of the session Hydrogels as Cell and Drug Carriers for TERM
	2013	Invited keynote speaker at the International Conference on Tissue Engineering (ICTE) 2013, 6-8 June Leiria (Portugal), Title <i>“Inkjet printing for Tissue Engineering and Regenerative Medicine: applications and future perspectives”.</i>
Awards	2021	“Mille per i Millennials” Award, Interdepartmental Center for Training, Lifelong learning, and Education Research of University of Pisa
	2016	Young Investigator Awards “Excellent in Research”, International Society for Biofabrication
	2014	Best paper award ICDS, International Academy, Research, and Industry Association, Delaware (USA)
	2013	“Itek” Award, Society for Imaging Science and Technology, Virginia (USA)
	2007	“Augusto Bonola” 2007 Prize, Italian Society of Surgery of the Hand (Italy)

Pisa 29/08/2024

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