

## **CARMEN GIORDANO**



### **PERSONAL INFORMATION**

Family name: Giordano; First Name: Carmen

Date of Birth: July 7th, 1971

Researcher unique identifier: Researcher ID G-8760-2011

Scopus Author ID: 12139446600

### **Brief profile**

Carmen Giordano is Associate Professor of Bioengineering at the Department of Chemistry, Materials and Chemical Engineering “Giulio Natta”, Politecnico di Milano (Italy).

She graduated in Chemistry in 1998 at Università degli Studi di Napoli “Federico II”, where in 2002 she also got the PhD in Biomaterials. In 2010 she got the Executive Master in Business Administration (MBA) at SDA Bocconi business school in Milan (Italy).

At Politecnico di Milano, she is lecturer from 2002 for the course “Laboratory of Biocompatibility and cell culture” and from 2015 of the course “Chemical bioengineering project” at Biomedical Engineering Faculty.

She funded and managed from 2002 to 2013 the Laboratory of Biocompatibility and Cell culture “BioCell” and she funded and currently lead two biological laboratories, MINERVA and ATHENA and a team of 6 researchers.

Her research activity is focussed from 2007 on the study of cell-material interaction for biomedical applications in the central nervous system. She has lead as Principal Investigator the project NANOBRAIN founded in 2012 by Cariplo Foundation (Italy) and currently she is Principal Investigator of the European project ERC Consolidator Grant “MINERVA” funded by the European Research Council in the field of Bioengineering.

She is author of more than 80 scientific publications, 3 patents and has supervised more than 30 graduation theses in Bioengineering.

### **EDUCATION**

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|------|---|
| 2010 | Executive Master in Business Administration (Executive MBA), “SDA Bocconi” business school (Italy), two years MBA Executive evening programme   |
| 2002 | PhD in Biomaterials, Faculty of Engineering, Università degli Studi di Napoli “Federico II”, (Italy) Title: “ <i>In vitro</i> response of HOB cells to hydroxyapatite reinforced hydrophilic polymers”, Supervisors: A. Buri; L. Ambrosio (Institute for Composites and Biomedical Materials-IMCB, National Research Council-CNR, Naples-Italy)               |
| 1999 | Chartered Chemist   |
| 1998 | Five-year Degree in Chemistry, Faculty of Chemistry, Università degli Studi di Napoli “Federico II” (Italy); Title: “Nitrogen role in exopolysaccharide production of <i>Rhizobium etli</i> bacterial strain” Supervisors: R. Lanzetta, E.J. Patriarca, (International Institute of Genetic and Biophysics-IIGB, National Research Council-CNR, Naples-Italy) |

### **CURRENT POSITION**

2014-today Associate Professor in Bioengineering, Engineering Faculty, Politecnico di Milano (Italy)

### **PREVIOUS POSITIONS**

2005–2014 Assistant Professor in Bioengineering, Engineering Faculty, Politecnico di Milano (Italy)

2002- 2005 Post-doctoral fellow, Engineering Faculty, Politecnico di Milano (Italy)

- 1999-2001 Visiting PhD Student, Interdisciplinary Research Centre-IRC in Biomedical materials, University College London (UK) (13 months)
- 1997-1998 Internship, International Institute of Genetics and Biophysics-IIGB, National Research Council-CNR, Naples (Italy) (15 months)

### **INSTITUTIONAL RESPONSIBILITIES**

- 2005-today Faculty member, Faculty of Engineering, Politecnico di Milano (Italy)
- 2003-today Member of Biomedical Engineering Academic Committee, Politecnico di Milano (Italy)
- 2017-today Founder and Head, Cell Culture Laboratory-MINERVA and Microbiology Laboratory-ATHENA, Politecnico di Milano (Italy)
- 2002-2013 Founder and Lab Manager, Laboratory of Biocompatibility and Cell Culture-BioCell", Politecnico di Milano (Italy)
- 2000-2001 Founder, Cell Culture Laboratory, Università degli Studi di Napoli "Federico II" (Italy)
- 2017-today Referent person of Politecnico di Milano for the framework agreement with I.R.C.C.S. Mario Negri Institute for Pharmacological Research, Milano (Italy)
- 2007-today Member representative of Politecnico di Milano for the framework agreement with Neuro-Zone s.r.l (Italy)
- 2007-today Member representative of Politecnico di Milano for the framework agreement with Università degli Studi di Pavia (Italy)

### **MEMBERSHIP IN SCIENTIFIC BODIES/JURIES**

- 2016 External Grant Evaluator, ERC Starting Grant Programme, European Research Council

### **MEMBERSHIPS- EDITORIAL BOARD AND SCIENTIFIC SOCIETIES**

- 2014 Guest Editor of Frontiers-Special Research Topic: "Molecular mechanisms and innovative therapeutic strategies for frontotemporal lobar degeneration"
- 2003-2018 Initially Executive Editor then Associate Editor and now Coordinating Editor, Journal of Applied Biomaterials & Functional Materials *former* Journal of Applied Biomaterials & Biomechanics
- 2001-2018 Member of the European Society for Biomaterials and the Italian Society for Biomaterials

### **TEACHING ACTIVITIES**

- 2020- today Lecturer, "Chemical Bioengineering 2", Engineering Faculty, Politecnico di Milano (Italy)
- 2015- today Lecturer, "Chemical bioengineering project", Engineering Faculty, Politecnico di Milano (Italy)
- 2020- 2021 Lecturer, "Tissue Engineering and Regenerative medicine 2", Engineering Faculty, Politecnico di Milano (Italy)
- 2003- 2020 Lecturer, "Laboratory of Biocompatibility and cell culture", Engineering Faculty, Politecnico di Milano (Italy)
- 2018 Lecturer, "Microbiology in process and product engineering", Engineering Faculty, Politecnico di Milano (Italy)
- 2001-2003 Teaching assistant, "Biomaterials III", Faculty of Engineering, Politecnico di Milano (Italy)
- 1999-2001 Teaching assistant, "Chemistry", Engineering Faculty, Università degli Studi di Napoli "Federico II" (Italy)

### **GRANTS**

- 2020-2022 DIANA: "Organ-on-a-chip Drug screening device to target brain disease" -ERC PROOF OF CONCEPT LUMP SUM PILOT 2019, European Research Council (Role: Principal Investigator)
- 2020-2023 PEGASO: PERSONALISATION OF INDUCED PLURIPOTENT STEM CELL-BASED BODY-ON-CHIPS FOR IN VITRO TESTING OF THERAPEUTIC AGENTS AGAINST BRAIN DISORDERS"-MIUR FARE 2018 Ricerca in Italia: Framework per l'attrazione ed il rafforzamento delle eccellenze per la Ricerca in Italia (Italy) (Role: Principal Investigator)
- 2007-2022 MINERVA: MICROBIOTA-GUT-BRAIN ENGINEERED PLATFORM TO EVALUATE INTESTINAL MICROFLORA

2012-2015	impact on brain functionality - ERC Consolidator Grant 2016 (Role: Principal Investigator) NANOBRAIN: Nanostructured hydrogels for controlled release of engineered therapeutic proteins against Parkinson's disease related neurodegeneration - Cariplo Foundation (Italy) (Role: Principal investigator)
2008-2010	Sol-gel processes for enoblement of natural tissues; Ministry of Italian University and Research (MIUR) (Italy) (Role: Team member)
2007-2011	MANTELLO: Materials and packaging for thermal maintenance aimed to energy saving in logistic and fresh food product transport - Regione Lombardia (Italy) (Role: Team member)
2006-2011	Functional surfaces - Istituto Italiano per la Tecnologia (IIT) (Italy) (Role: Team member)
2006-2008	New non viral system for controlled gene delivery via hydrogels - Cariplo Foundation (Italy) (Role: Team member)
2006-2007	Ethyl-lactate resource: development of new material, bio-and eco-compatible processes and innovative synthesis of organic derivatives -Young Researchers Grants, internal competition- Politecnico di Milano (Italy) (Role: Co-Principal investigator)
2004-2007	Development of a biomicroelectronic interface - Cariplo Foundation(Italy) (Role: Team member)
2002-2004	Development of biomimetic treatments for titanium - Ministry of Italian University and Research (MIUR) (Italy) (Role: Team member)
1999-2000	Deposition of hydroxyapatite on bioactive glasses with biomimetic method on polymeric support by physiological conditions in steady flow - Young Researcher Grants- Italian Ministry of University and Scientific and Technological Research (MURST) (Italy) (Role: Principal Investigator)

## FELLOWSHIP AND AWARDS

2002-2003	Annual Ambassador Scholarship, Rotary Foundation (hosting institution: "University of New South Wales-Sidney, NSW, Australia)
1998-2001	Three-year scholarship for PhD in Biomaterials co-funded by MURST/FSE (research activity related to the E.C. 5th FW Project: Novel Intervertebral Disc Prostheses, G5RD-CT-2000-00267)
2007	Larry J. Peterson Best Paper Award

## GRANTED PATENTS

### 3 patent families

- 1) PATENT family – Invention: millifluidic device for advanced cultures of biological agents  
Inventors: Giordano C, Raimondi MT, Petrini P, Izzo L, Laganà M, Albani D; Applicant: Politecnico di Milano  
-IT Patent Application n. 102019000016376, entitled "Dispositivo millifluidico per colture avanzate di agenti biologici", priority date 16/09/2029;  
-PCT Patent Application n° PCT/IB2020/058339 entitled "Millifluidic device for advanced cultures of biological agents", filed on 08/09/2020
- 2) PATENT family – Inventions: (1) hydrogel for cell housing; (2) hydrogel for neural cell housing  
Inventors: Daniele F, Giordano C, Masi M, Perale G, Rossi F, M. Tunesi; Applicant: Politecnico di Milano-US Patent n° 8,586,086B2 entitled "Hydrogel capable of containing and conveying cells"  
-IT Patent n. 1387651 entitled "Idrogelo idoneo a contenere e veicolare cellule neuronali"(Hydrogel capable of containing and conveying neural cells)
- 3) PATENT family – Invention: biomimetic treatment for titanium  
Inventors: Chiesa R, Cigada A, Della Valle C, Rondelli G, Candiani G, Giordano C, Applicant: Politecnico di Milano  
-IT Patent n° 1390847 entitled "Trattamento biomimetico a base silicio per l'osteointegrazione di substrati in metallo" (*Silicon-based biomimetic treatment for the osteointegration of metal substrates*)

-EP2307594B1 entitled “Silicon-based biomimetic treatment for the osteointegration of metal substrates” (national phases in: Germany, UK, Italy, France, Spain, Sweden, Switzerland)

-EP2479318B1 (a divisional patent of EP2307594A1) entitled: “Silicon-based biomimetic treatment for the osteointegration of metal substrates” (national phases in: Germany, UK, Italy, France, Spain, Turkey, Sweden, Switzerland)

## **PUBLICATIONS**

<https://scholar.google.it/citations?user=vSlrH58AAAAJ&hl=it&oi=ao>