

Gianni Ciofani, Ph.D.

Associate Professor

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Summary



Gianni Ciofani (born on August 14th, 1982) is Associate Professor at the Polytechnic University of Torino, Department of Mechanical and Aerospace Engineering (Torino, Italy) and Senior Researcher at the Italian Institute of Technology (IIT), Smart Bio-Interfaces Research Line (Pontedera, Pisa, Italy).

He received his Master Degree in Biomedical Engineering (with honors) from the University of Pisa, Italy, in July 2006, and, in the same year, his Diploma in Engineering (with honors) from the *Scuola Superiore Sant'Anna* of Pisa, Italy. In January 2010, he obtained his Ph.D. in Innovative Technologies (with honors)

from the *Scuola Superiore Sant'Anna*. From January 2010 to August 2013 he was Post-Doc at the IIT, Center for Micro-BioRobotics @SSSA, where, from September 2013 to October 2015, he was Researcher in the framework of the Smart Materials Platform. In October 2015 he was appointed Associate Professor at the Polytechnic University of Torino, maintaining his research activity in IIT where he is currently Principal Investigator of the Smart Bio-Interfaces Research Line.

His main research interests are in the field of smart nanomaterials for nanomedicine, bio/non-bio interactions, and biology in altered gravity conditions. He is coordinator or unit leader of many grants/projects, and in 2016 he was awarded a European Research Council (ERC) Starting Grant. Gianni Ciofani is author of more than 100 ISI papers (*H*-index 26, excluding self-citations), 3 edited books, and 14 book chapters. He delivered about 25 invited talks/lectures in international contexts and, for his research activity, he was awarded several national and international prizes. He serves as Reviewer for more than 100 international journals, as Editorial Board Member of *Advances in Nano Research*, and as Specialty Chief Editor (Nanobiotechnology) for *Frontiers in Bioengineering and Biotechnology*.

Gianni Ciofani is professor of *Biomimetic Systems* and *Bionanotechnologies*, and supervisor of several M.Sc. and Ph.D. students.

Education

- January 18th, 2010

Ph.D. in Innovative Technologies, Sant'Anna School of Advanced Studies of Pisa (Italy), with the thesis "Study and design of drug delivery systems for cell therapy". Final mark: 100/100 *summa cum laude*

- January 30th, 2007

Professional qualification (Industrial Engineering - Marks 234/240)

- November 16th, 2006

Diploma in Engineering, Sant'Anna School of Advanced Studies of Pisa (Italy), with the thesis "Carbon nanotube mediated electroporation for *in vivo* gene therapy: a feasibility study". Final mark: 100/100 *summa cum laude*

- July 4th, 2006

M.Sc. in Biomedical Engineering, School of Engineering of the University of Pisa (Italy), with the thesis “Theoretical and experimental study of a system for the neuronal regeneration”. Final mark: 110/110 *summa cum laude* and with “Excellence Award”

- July 13th, 2004

B.Sc. in Biomedical Engineering, School of Engineering of the University of Pisa (Italy), with the thesis “Study of a microparticle based system for enzyme immobilization suitable for an extracorporeal device”. Final mark: 110/110 *summa cum laude*

- July 4th, 2002

Musical diploma in clarinet, Conservatory “Giacomo Puccini” of La Spezia (Italy). Final mark: 8/10

- July 13th, 2001

High School degree, Scientific Lyceum “Ulisse Dini” of Pisa (Italy). Final mark: 100/100

Scientific experience

- October 26th, 2015 - present

Associate Professor, Polytechnic University of Torino, Department of Mechanical and Aerospace Engineering (Torino, Italy)

- March 1st, 2017 - present

Senior Researcher, Italian Institute of Technology, Smart Bio-Interfaces (Pontedera, Pisa, Italy)

- December 5th, 2017 - December 5th, 2023

National Scientific Qualification to the function of Associate and Full Professor of Applied Physics, obtained from the Italian Ministry of University and Research

- March 30th, 2017 - March 30th, 2023

National Scientific Qualification to the function of Full Professor of Bioengineering, obtained from the Italian Ministry of University and Research

- November 2nd, 2015 - February 28th, 2017

Affiliated Researcher, Italian Institute of Technology, Center for Micro-BioRobotics @SSSA (Pontedera, Pisa, Italy)

- September 1st, 2013 - October 25th, 2015

Researcher, Italian Institute of Technology, Center for Micro-BioRobotics @SSSA (Pontedera, Pisa, Italy)

- January 16th, 2010 - August 31st, 2013

Post-Doctoral researcher, Italian Institute of Technology, Center for Micro-BioRobotics @SSSA (Pontedera, Pisa, Italy)

- January 15th, 2007 - January 14th, 2010

Ph.D. student in Innovative Technologies, Sant’Anna School of Advanced Studies of Pisa, Center for Research In Microengineering (Pontedera, Pisa, Italy)

- December 3rd, 2007 - January 15th, 2010

Research assistant, Sant’Anna School of Advanced Studies of Pisa, Center for Research In Microengineering (Pontedera, Pisa, Italy)

- November 1st, 2008 - June 20th, 2009

Visiting Ph.D. student, Center of Investigation “Principe Felipe”, Polymer Therapeutics Laboratory (Valencia, Spain)

- September 24th, 2007 - November 25th, 2007

Visiting Ph.D. student, Waseda University, Department of Life Science and Medical Bioscience, School of Advanced Science and Engineering, in the framework of the Italy-Japan Joint Lab ROBOCASA (Tokyo, Japan)

- July 25th, 2006 - December 24th, 2006

Research assistant, Sant’Anna School of Advanced Studies of Pisa, Center for Research In Microengineering (Pontedera, Pisa, Italy)

Granted projects

1. Magnetic solid lipid nanoparticles as a multifunctional platform against glioblastoma multiforme (SLaMM), grant number 709613, European Research Council (ERC) Starting Grant, 2017-2022 (Principal Investigator)
2. Nanotechnological countermeasures against oxidative stress in muscle cells exposed to microgravity (NOEMI), project number ILSRA-2014-0012 (implementation phase), European Space Agency & grant number 2018-0156, Fondazione CaRiPlo, 2018-2020 (Principal Investigator)
3. A biomimetic and neuroprotective delivery nanocapsule for the targeted treatment of post-ischemic stroke effects (BIONICS), grant number 793644, Marie Skłodowska-Curie Individual Fellowship, 2018-2020 (Supervisor)
4. Cerium oxide nanoparticles as countermeasure against reactive oxygen species production in altered gravity conditions: Preliminary investigation on planarians (PlanOx2), grant number CORA-GBF-2017-001, European Space Agency, 2017-2019 (Principal Investigator)
5. Nanotechnology solutions against oxidative stress in muscle tissue during long-term microgravity exposure (NANOROS), grant number 2016-7-U.0, Italian Space Agency, 2016-2019 (Principal Investigator)
6. Starting grant "*Compagnia di San Paolo*", grant number 55_AI16GC01, *Compagnia di San Paolo*, 2016-2018 (Principal Investigator)
7. New self-powered devices for cochlear stimulation based on piezoelectric nanomaterials, grant number RF-2011-02350464, Italian Ministry of Health, 2014-2018 (Unit Coordinator)

Other projects

1. Nanotechnological countermeasures against oxidative stress in muscle cells exposed to microgravity (NOEMI), project number ILSRA-2014-0012 (definition phase), European Space Agency, 2015-2017 (Principal Investigator)
2. *In vitro* effects of the Bayer's proprietary compound BAY 43-9006 (Sorafenib) linked to magnetic nanoparticles on HepG2 cell line, project number US208314731, Bayer HealthCare Pharmaceuticals Inc., 2014-2016 (Principal Investigator)

International scientific activities

Project proposal evaluations

- European Research Council (2018)
- Swiss National Science Foundation (2018)
- National Science Center of Poland (2017)
- Wellcome trust/DBT India Alliance (2016)
- Chilean National Commission for Scientific and Technological Research, CONICYT (2016)
- French National Research Agency, ANR (2015)
- Estonian Research Council, ETAg (2015)

Service for international journals

- Specialty Chief Editor of *Nanobiotechnology* specialty section of *Frontiers in Bioengineering and Biotechnology* (2018-present)
- Guest Editor of the Research Topic "Smart Tools for Caring: Nanotechnology Meets Medical Challenges" for *Frontiers in Bioengineering and Biotechnology* (2018-present)
- Associate Editor of *Nanobiotechnology*, specialty section of *Frontiers in Bioengineering and Biotechnology* (2017-2018)
- Guest Editor of the Special Issue "Nanoparticle-Mediated Cell and Tissue Stimulation" for *Nanomaterials* (2016-2017)

- Guest Editor of the Special Issue "Exploring Challenges ahead of Nanotechnology for Biomedicine" for *Bioactive Materials* (2016-2017)
- Editorial Board Member of *Advances in Nano Research* (2013-present), of the *Journal of Nanoscience Letters* (2010-2014), and of the *International Journal of Biological Engineering* (2011-2016); Senior Editor of *Nanomaterials & Nanosciences* (2013-2014)
- Referee for more than 100 international journals, among which: *ACS Applied Materials & Interfaces*, *ACS Nano*, *Acta Biomaterialia*, *Advanced Healthcare Materials*, *Biomaterials*, *Colloids and Surfaces B: Biointerfaces*, *Expert Opinion on Drug Delivery*, *IEEE Transactions on Biomedical Engineering*, *International Journal of Nanomedicine*, *Nanomedicine UK*, *Sensors & Actuators B: Chemical, Small*

Service for international conferences

- Organizer and general chair of the International Workshop "Smart tools for caring: Nanotechnology meets medical challenges" (Pontedera, Italy, March 2nd, 2018)
- Session chair at the East-West Chemistry Conference (Skopje, Macedonia, October 12th - 14th, 2017)
- Session chair at the NanoBio&Med2016 Conference (Barcelona, Spain, November 22nd - 24th, 2016)
- Member of the international advisory committee of the 1st biennial conference BioMaH "Biomaterials for Tissue and Genetic Engineering and Role of Nanotechnology" (Roma, Italy, October 17th - 20th, 2016)
- Member of the international advisory committee of the Energy Materials and Nanotechnology Phuket Meeting (Phuket, Thailand, May 4th - 7th, 2015)
- Session chair at the 10th Nanoscience and Nanotechnology Conference (Istanbul, Turkey, June 17th - 21st, 2014)
- Member of the international advisory committee and session chair of the Energy Materials and Nanotechnology Spring Meeting (Las Vegas, USA, February 27th - March 2nd, 2014)
- Referee for the following international conferences: NER 2013, EMBC 2013, EMBC 2014, MNM 2014, ICRA 2014, IROS 2014, IROS 2015, EMBC 2015, ICRA 2016, EMBC 2016, NER 2017, EMBC 2017, EMBC 2018

Academic appointments

- Faculty member of the Ph.D. course in BioRobotics, Sant'Anna School for Advanced Studies (Pisa, Italy), a.y. 2017/2018 - present
- Faculty member of the B.Sc. and M.Sc. courses in Biomedical Engineering, Polytechnic University of Torino (Torino, Italy), a.y. 2015/2016 - present
- Member of the committee for the admission and for the final examination of the Ph.D. course in BioRobotics, Sant'Anna School for Advanced Studies (Pisa, Italy), a.y. 2013/2014 - present
- Member of committees for the selection of Assistant Professors at the Polytechnic University of Torino (Torino, Italy)
- Member of committees for the selection of post-doctoral fellows at Sant'Anna School for Advanced Studies (Pisa, Italy), Polytechnic University of Torino (Torino, Italy), and Italian Institute of Technology (Genova, Italy)
- External evaluator and/or member of the final exam committee for Ph.D. candidates at the Indian Institute of Technology (Roorkee, India), Sant'Anna School for Advanced Studies (Pisa, Italy), University of Genova (Genova, Italy), University Federico II (Napoli, Italy)

Teaching activities

- *Biomimetic systems*, Polytechnic University of Torino (Torino, Italy), a.a. 2015/2016 - present
- *Bionanotechnologies*, Polytechnic University of Torino (Torino, Italy), a.a. 2015/2016 - present

- *Cell and tissue engineering* (Collaborator), Polytechnic University of Torino (Torino, Italy), a.a. 2015/2016 - present
- *Engineering for regenerative medicine* (Collaborator), Polytechnic University of Torino (Torino, Italy), a.a. 2015/2016 - 2016/2017
- *Chemical bioengineering* (Collaborator), Polytechnic University of Torino (Torino, Italy), a.a. 2015/2016 - 2016/2017
- *Bioinspired soft robotics: fundamentals on fabrication and characterization technologies* (Collaborator), Sant'Anna School for Advanced Studies (Pisa, Italy), a.a. 2016/2017 - present
- *Fundamental technologies for Micro-BioRobotics* (Collaborator), Sant'Anna School for Advanced Studies (Pisa, Italy), a.a. 2013/2014 - 2015/2016

Mentoring activities

Ph.D. students

1. *Advanced nanotechnological approaches for hyperthermia in solid tumors*. Candidate: Daniele de Pasquale, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Graduation expected in 2020
2. *Cerium oxide nanoparticles in the treatment of Parkinson's disease*. Candidate: Matteo Battaglini, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Graduation expected in 2019
3. *Solid lipid nanoparticles: a new therapeutic tool to rescue mitochondrial energy defects in neurodegeneration*. Candidate: Ilaria Pezzini, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Graduation expected in 2018
4. *Smart nanomaterials to overcome highly invasive tumor resistance*. Candidate: Agostina Francesca Grillone, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Final mark: 100/100 *summa cum laude*; June 2017
5. *Nanoparticles and nanostructured surfaces as smart solutions for the modulation of cellular functions*. Candidate: Attilio Marino, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Final mark: 100/100 *summa cum laude*; October 2016
6. *Smart nanomaterials for the stimulation and the differentiation of mesenchymal stem cells*. Candidate: Antonella Rocca, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Final mark: 100/100 *summa cum laude*; November 2015
7. *Overcoming the limitations of traditional medical therapies: design of functional nanostructured materials*. Candidate: Eugenio Redolfi Riva, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Final mark: 100/100 *summa cum laude*; June 2015
8. *Engineering of traditional and smart materials for interaction with living matter*. Candidate: Giada Graziana Genchi, Ph.D. course in Biorobotics, Sant'Anna School of Advanced Studies of Pisa (Italy). Final mark: 100/100 *summa cum laude*; November 2013

M.Sc. students

1. *Delivery of piezoelectric nanotransducers across the blood-brain barrier: a smart tool for remote electric stimulation against glioblastoma multiforme*. Candidate: Enrico Almici, M.Sc. course in Biomedical Engineering, Polytechnic University of Torino (Italy). Final mark: 110/110 *summa cum laude*; April 2018
2. *TPP-functionalized nanoceria-loaded lipid nanostructures for the treatment of neurodegenerative diseases*. Candidate: Ivana Cavaliere, M.Sc. course in Biomedical Engineering, Polytechnic University of Torino (Italy). Final mark: 108/110; April 2018
3. *Composite scaffolds with porosity over multiple length scales for skin regeneration*. Candidate: Viola Sgarminato, M.Sc. course in Biomedical Engineering, Polytechnic University of Torino (Italy). Final mark: 110/110 *summa cum laude*; April 2018

4. *Electrospun polymeric membranes doped with piezoelectric nanoparticles: characterization and effects on bone-like cells*. Candidate: Michela Licciardello, M.Sc. course in Biomedical Engineering, Polytechnic University of Torino (Italy). Final mark: 103/110; December 2017
5. *A closed-loop neuroprosthesis with proprioceptive feedback due to mechanical vibration of tendons*. Candidate: Alessia Botta, M.Sc. course in Biomedical Engineering, Polytechnic University of Torino (Italy). Final mark: 110/110 *summa cum laude*; October 2017
6. *Gelatin/nanoceria nanocomposite fibers as antioxidant scaffolds for neuronal regeneration*. Candidate: Daniele de Pasquale, M.Sc. course in Molecular and Industrial Biotechnologies, University of Pisa (Italy). Final mark: 104/110; December 2016
7. *Natural polymer based sub-micron fibers doped with cerium oxide nanoparticles for skeletal muscle tissue regeneration*. Candidate: Paolo Massimo di Corato, M.Sc. course in Biomedical Engineering, Polytechnic University of Torino (Italy). Final mark: 87/110; July 2016
8. *Piezoelectric thin films as artificial sensory epithelium for cochlear prosthetics*. Candidate: Maria Comito, M.Sc. course in Biomedical Engineering, University of Pisa (Italy). Final mark: 110/110; July 2016; winner of the National Bioengineering Group master thesis award
9. *Development of conducting polymer-based microwrinkled biointerfaces as smart scaffolds for stimulation and guidance of axonal growth*. Candidate: Alberto Bonisoli, M.Sc. course in Biomedical Engineering, University of Roma "La Sapienza" (Italy). Final mark: 110/110 *summa cum laude*; October 2014
10. *Development and characterization of a novel bio-hybrid robotic actuator driven by C2C12 skeletal muscle cells*. Candidate: Giada Graziana Genchi, M.Sc. course in Biotechnologies, University of Bari (Italy). Final mark: 110/110 *summa cum laude*; October 2010

Internships

1. Supervisor of the Post-Graduate Internship of Paolo Donati (*Università degli Studi di Camerino, Camerino, Italy*), *Preparation and characterization of nanoceria-doped substrates*, 14/04/2017 - 16/06/2017
2. Supervisor of the Post-Doctoral Internship of Andrea Degl'Innocenti (Max Plank Institute for biophysics, Frankfurt, Germany), *Enhancing far-red and NIR light sensitivity of opsins using chlorophyll derivatives*, 16/11/2015 - 15/05/2016
3. Supervisor of the Ph.D. Internship of Tiago Hilario Ferreira (*Centro de Desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil*), *Investigation of boron nitride nanotubes applications for cancer therapy*, 18/02/2013 - 17/07/2013

Invited talks/seminars

1. *Piezoelectric nanostructured materials as innovative smart bio-interfaces*. Invited talk at the Materials Research Society Spring Meeting, Phoenix (USA); April 5th, 2018
2. *Multifunctional hybrid nanovectors: a new tool to overcome highly invasive tumor resistance*. Invited talk at the 29th Conference of the International Society for Medical Innovation and Technology, Torino (Italy); November 10th, 2017
3. *NANOROS: Tecnologie in orbita*. Invited talk at the *Festival della scienza*, Genova (Italy); November 5th, 2017
4. *Lipid-based hybrid nanovectors as theranostic tools*. Invited talk at the East-West Chemistry Conference, Skopje (Macedonia); October 12th, 2017
5. *NANOROS: Nanotechnology solutions against oxidative stress in muscle tissue during long-term microgravity exposure*. Invited talk at the *Festival dello Spazio*, Busalla (Italy); July 27th, 2017
6. *Bioapplications of smart ceramic nanoparticles*. Invited talk at the Clusters & Nanostructures Gordon Research Conference, South Hadley (USA); July 12th, 2017
7. *Remote control of cellular functions mediated by smart nanomaterials*. Invited key-note talk at the workshop "NanoBioMed Sardinia", Alghero (Italy); June 25th, 2017

8. *Smart materials in nanomedicine*. Invited talk at the NanoBio&Med2016 conference, Barcelona (Spain); November 24th, 2016
9. *Piezoelectric nanomaterials for tissue engineering*. Invited talk at the 1st Biennial Conference on Biomaterials for Tissue and Genetic Engineering and the Role of Nanotechnology (BioMaH), Roma (Italy); October 18th, 2016
10. *Active nanomaterials for biomedical applications*. Invited talk at the conference "Nanotechnology in medicine: From molecules to humans", Herrnstain (Austria); July 6th, 2016
11. *Smart substrates for tissue engineering*. Invited seminar at the Department of Materials, Loughborough University, Loughborough (UK); June 17th, 2016
12. *Piezoelectric nanomaterials for cell stimulation*. Invited seminar at the Department of Life Science and Medical Bioscience, TWIns, Waseda University, Tokyo (Japan); May 17th, 2016
13. *Potential applications of smart nanoparticles in neurodegenerative diseases*. Invited talk at the workshop "Engineered biomaterials and biomedical devices in the regenerative medicine of the nervous system", Torino (Italy); November 20th, 2015
14. *Modulation of cellular responses: The two-photon polymerization approach in the control of the physical micro/nanoenvironment*. Invited talk at the 37th Annual International Conference of the IEEE EMBS, Milano (Italy); August 26th, 2015
15. *Multi-functional nanomaterials for cancer therapy*. Invited talk at the European Materials Research Society Spring Meeting, Lille (France); May 14th, 2015
16. *Hypergravity to investigate cell differentiation*. Invited talk at the workshop "Biology in Space: Challenges and Opportunities", Pisa (Italy); November 7th, 2014
17. *Smart bio-interfaces*. Invited talk at the 1st Core-to-Core International Symposium "3D Lab-Exchange Program", Kamagawa (Japan); September 12th, 2014
18. *Boron nitride nanotubes in the biomedical research*. Invited talk at the 10th Nanoscience and Nanotechnology Conference, Istanbul (Turkey); June 20th, 2014
19. *Nanotransducers for biomedical applications: The example of boron nitride nanotubes*. Invited talk at the Energy Materials and Nanotechnology Spring Meeting, Las Vegas (USA); March 2nd, 2014
20. *Piezoelectric nanostructured scaffolds for regenerative medicine*. Invited talk at the Materials Research Society Spring Meeting, San Francisco (USA); April 5th, 2013
21. *Piezoelectric nanomaterials for biomedical applications*. Invited lecture at the symposium "Piezoelectric bone surgery", Torino (Italy); March 9th, 2013
22. *Piezoelectric quasi-1D nanostructures for biomedical applications*. Invited lecture at the symposium "Piezoelectric nanodevices: present and future", *Accademia Nazionale dei Lincei*, Roma (Italy); September 28th, 2012
23. *Smart nanoparticles in the biomedical research*. Invited lecture at the Spring Conference of the *Europäische Akademie Bad Neuenahr-Ahrweiler* "Nanomedicine. Visions, risks, potential", Berlin (Germany); April 19th, 2012
24. *Applications of ceramic nanoparticles in nanomedicine*. Invited talk at the International Conference on Processing and Manufacturing of Advanced Materials (THERMEC 2011), Quebec City (Canada); August 4th, 2011
25. *Nanoparticles for biomedical applications, with a special view on boron nitride nanotubes*. Invited seminar at the World Premier International Research Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba (Japan); November 10th, 2009

Other talks/seminars

1. *Smart nanotools for the development of multifunctional biomedical platforms*. Talk at the 4th Core-to-Core International Symposium "3D Lab-Exchange Program", Bonn (Germany); March 8th, 2018

2. *Remote modulation of cell activities mediated by smart nanoparticles*. Talk at the 5th Nano Today Conference, Waikoloa (USA); December 10th, 2017
3. *Lipid-based hybrid theranostic nanovectors for brain cancer treatment*. Talk at the 28th European Conference on Biomaterials, Athens (Greece); September 8th, 2017
4. *Remote nanomaterials-mediated cell activation*. Talk at the 5th International Conference on Multifunctional, Hybrid and Nanomaterials, Lisbon (Portugal); March 6th, 2017
5. *Smart bio-nanomaterials*. Talk at the 3rd Core-to-Core International Symposium "3D Lab-Exchange Program", Pisa (Italy); September 22nd, 2016
6. *Boron nitride nanotubes as smart biomaterials*. Talk at the 13th International Conference on Nanostructured Materials, Quebec City (Canada); August 9th, 2016
7. *Nanoparticle-assisted piezoelectric cell stimulation*. Lecture at the University of Genova, Genova (Italy); April 29th, 2016
8. *Smart multi-functional nanomaterials for biomedical applications*. Talk at the 4th Nano Today Conference, Dubai (UAE); December 9th, 2015
9. *Two-photon polymerization of Ormocomp® 3D structures doped with piezoelectric barium titanate nanoparticles*. Talk at the 27th European Conference on Biomaterials, Krakow (Poland); September 3rd, 2015
10. *Targeted delivery of anti-cancer drug sorafenib through magnetic solid lipid nanoparticles*. Talk at the TechConnect World Innovation Conference & Expo, National Harbor (USA); June 15th, 2015
11. *Nanotechnology-based smart bio-interfaces*. Lecture at the Politecnico di Torino, Torino (Italy); April 22nd, 2015
12. *Smart nanostructured materials in the biomedical research*. Talk at the 12th International Conference on Nanostructured Materials, Moscow (Russia); July 14th, 2014
13. *Recombinant human elastin-like magnetic microparticles for drug delivery and targeting*. Talk at the 4th International Symposium on Surface and Interface of Biomaterials, Roma (Italy); September 25th, 2013
14. *Smart nanomaterials for biomedical applications*. Seminar at the Department of Life Science and Medical Bioscience, TWIns, Waseda University, Tokyo (Japan); May 14th, 2013
15. *Myoblast behavior on human recombinant elastin-like coatings*. Talk at the conference Nanomedicine: from molecules to diagnosis and therapy, Roma (Italy); October 2nd, 2012
16. *Boron nitride nanotubes for biological and medical applications*. Talk at the 13th International Conference on the Science and Application of Nanotubes, Brisbane (Australia); June 28th, 2012
17. *In vivo preliminary investigation of boron nitride nanotubes compatibility*. Talk at the 9th World Biomaterials Congress, Chengdu (China); June 3rd, 2012
18. *Hypergravity effects on proliferation and differentiation of C2C12 muscle-like cells*. Talk at the 62nd International Astronautical Conference, Cape Town (South Africa); October 7th, 2011
19. *Adhesion and proliferation of PC12 cells on ZnO nanowire arrays*. Talk at the Congress of the Italian Society for Biomaterials (SIB 2011), Bari (Italy); May 24th, 2011
20. *Potential applications of barium titanate nanoparticles in nanomedicine: A preliminary study*. Talk at the 10th Nanotechnology Conference: IEEE NANO 2010, Seoul (Korea); August 18th, 2010
21. *BioNanoRobotics: how nano can we go?* Seminar at the Department of Nanomedicine and Biomedical Engineering of the University of Texas, Houston (USA); February 11th, 2010
22. *Piezoelectric nanotubes for cellular stimulation*. Talk at the 1st ASME Global Congress on NanoEngineering for Medicine and Biology, Houston (USA); February 9th, 2010
23. *Potential biomedical applications of boron nitride nanotubes, with special attention on boron neutron capture therapy*. Seminar at the annual meeting of the Italian-Switzerland Society of Biomedical and Chemical Sciences, Bellinzona (Switzerland); November 27th, 2009
24. *Boron nitride nanotubes as innovative biomaterials*. Talk at the 2nd WUT-NIMS-EMPA Workshop on Nanomaterials for sustainable Development, Tsukuba (Japan); November 12th, 2009

25. *Boron nitride nanotubes as innovative vectors for cell therapy*. Seminar at the Department of Life Science and Medical Bioscience, Waseda University, Tokyo (Japan); September 24th, 2009
26. *Investigation of interactions between boron nitride nanotubes and C2C12 cells*. Talk at the 9th Nanotechnology Conference: IEEE NANO 2009, Genova (Italy); July 29th, 2009
27. *Magnetic driven drug targeting*. Talk at the 2nd European Summer School in Nanomedicine, Cascais, Lisbon (Portugal); June 15th, 2009
28. *Cell cultures and nanotechnology: Towards the medicine of the future*. Talk at the AICC annual meeting, Istituti Ortopedici Rizzoli, Bologna (Italy); November 27th, 2008
29. *Study and design of drug delivery systems for cell therapy*. Micro Nano COE special seminar, School of Engineering, Nagoya University, Nagoya (Japan); November 21st, 2007
30. *Polymeric micro- and nanoparticles as drug delivery systems for cell therapy*. Seminar at the Consolidated Research Institute for Advanced Science and Medical Care (ASMEW), Waseda University, Tokyo (Japan); October 24th, 2007

Awards and other achievements

- Cover image of issue 14(6), February 2018, of *Small*
- Cover image of issue 6(9), May 2017, of *Advanced Healthcare Materials*
- Winner of the Spin Your Thesis! Campaign (2016), promoted by the ESA, presenting the experiment *Hypergravity-induced oxidative stress in planarians: Nanotechnology-based countermeasures*
- Cover image of issue 4(11), August 2015, of *Advanced Healthcare Materials*
- Cover image of issue 7(7), February 2015, of *Nanoscale*
- Cover image of issue 31(11), November 2014, of *Pharmaceutical Research*
- Winner of the Spin Your Thesis! Campaign (2014), promoted by the ESA, presenting the experiment *Implementation of hypergravity in mammalian cell transfection procedures*
- Cover image of issue 14(5), May 2014, of *Macromolecular Bioscience*
- Winner of the Spin Your Thesis! Campaign (2013), promoted by the ESA, presenting the experiment *Combination of hypergravity and nanotechnology for the improvement of the differentiation of mesenchymal stem cells into osteoblasts*
- Cover image of issue 114(1), July 2012, of the *Journal of Bioscience and Bioengineering*
- European Biomaterials and Tissue Engineering Doctoral Award (EDA 2011)
- “Nital I-Robot - Scuola Superiore Sant’Anna” 2010 award for the Ph.D. Thesis
- “Massimo Grattarola” 2010 award for the Ph.D. Thesis
- Winner of the “Salvatore Venuta” 2010 scholarship for young researchers in nanomedicine
- Winner of the Spin Your Thesis! Campaign (2010), promoted by the ESA, presenting the experiment *Investigation of hypergravity on proliferation, metabolism and differentiation of muscle cells*
- STSBC-Roche 2009 award (Italian-Switzerland Society of Biomedical and Chemical Sciences and Roche Diagnostics Ltd.) for researches in the fields of biomedicine and/or biotechnology
- Excellent Paper Award 2009 of the Society for Biotechnology of Japan, with the paper *Bi-compartmental device for dynamic cell co-culture: design, realisation and preliminary results* (*Journal of Bioscience and Bioengineering*, 105(5): 536-544, 2008)
- AICC 2008 award (Italian Cell Culture Association, national branch of the European Tissue Culture Society) for young researchers in the biomedical field
- ISIB-CNR 2006 award (Institute of Biomedical Engineering, National Research Council) for the Master Degree Thesis
- Winner of the 8th Parabolic Flight Campaign (2005), promoted by the ESA and NOVESPACE, presenting the experiment *Verification of the Fitts’ law in microgravity and hypergravity environment and energetic considerations*

Publication list

International journals

1. Genchi G.G., Sinibaldi E., Ceseracciu L., Labardi M., Marino A., Marras S., De Simoni G., Mattoli V., Ciofani G. Ultrasound-activated piezoelectric P(VDF-TrFE) / boron nitride nanotube composite films promote differentiation of human SaOS-2 osteoblast-like cells. *Nanomedicine: Nanotechnology, Biology and Medicine*, 10.1016/j.nano.2017.05.006
2. Rojas Cifuentes C.A., Tedesco M., Massobrio P., Marino A., Ciofani G., Martinoia S., Raiteri R. Acoustic stimulation can induce a selective neural network response mediated by piezoelectric nanoparticles. *Journal of Neural Engineering*, *Journal of Neural Engineering*, 15(3): 036016 (2018)
3. Marino A., Tricinci O., Battaglini M., Filippeschi C., Mattoli V., Sinibaldi E., Ciofani G. A 3D real-scale, biomimetic and biohybrid model of the blood-brain barrier fabricated through two-photon lithography. *Small*, 14(6): 1702959 (2018)
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1. Ciofani G. (Editor) *Smart Nanoparticles for Biomedicine* (Elsevier, UK, 2018)
2. Ciofani G., Mattoli V. (Editors) *Boron Nitride Nanotubes in Nanomedicine* (Elsevier, UK, 2016)
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Book chapters

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