Francesco Fontana

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Work Experiences

Feb 2023 – Present
Academic Tutor - University of Bologna - Bologna, Italy
Activity: Course of "Integrated Processing Systems" [code 33981, M.Sc. in Management Engineering] - Module of "Industrial Automation and C.I. Manufacturing Systems" [code 96134].
Department: Industrial Engineering - Centre for Aided and Intelligent Manufacturing (Viale Risorgimento, 2, 40136, Bologna, Italy)

Dec 2022 – Present
Research Fellow - University of Bologna - Bologna, Italy
Activity: Characterisation for Additive Manufacturing of Polymers Increasing Osteointegration for Non-Metallic Implants.
Department: Industrial Engineering - Centre for Aided and Intelligent Manufacturing (Viale Risorgimento, 2, 40136, Bologna, Italy)

Nov 2021 – Mar 2022
Visiting Scholar - Northeastern University - Boston, MA, USA
Activity: Pulsed Electromagnetic Fields Stimulation of F11 Neuroblastoma Cell Line Seeded on Coverslips.
Department: Chemical Engineering - Advanced Biomaterials for NeuroEngineering Laboratory (360 Huntington Avenue 201 Cullinane, 02115, Boston, MA, USA)

Oct 2018 – Dec 2021
PhD Student - Sant'Anna School of Advanced Studies - Pisa, Italy
Activity: Low Intensity Ultrasound-Electromagnetic Combined Stimulation for Therapeutic Purposes.
Department: The BioRobotics Institute - Regenerative Technologies Laboratory (Viale Rinaldo Piaggio, 34, 56025, Pontedera (PI), Italy)

Education

2018 – 2022
PhD in Biorobotics, Sant'Anna School of Advanced Studies - Pisa, Italy.
Thesis title: *Low Intensity Ultrasound-Electromagnetic Combined Stimulation for Therapeutic Purposes.*

2014 – 2017
M.Sc. in Chemical Engineering, University of Salerno - Fisciano (SA), Italy. **110/110 cum laude**
Career: Innovative Processes and Nanotechnologies
Thesis title: *Configuration of a Supercritical CO2-Assisted Electrospinning Plant.*

2011 – 2014
B.Sc. in Chemical Engineering, University of Salerno - Fisciano (SA), Italy. **110/110 cum laude**
Thesis title: *Production and Characterisation of Biocompatible Fibroin/Alginate Aerogels*.

2011
High School Diploma, Liceo Classico "T. Tasso" - Salerno, Italy. **100/100 cum laude**

Research Publications

International Journal Articles

1 **F. Fontana**, *et al.*, "Low-intensity pulsed ultrasound increases neurotrophic factors secretion and suppresses inflammation in in vitro models of peripheral neuropathies," *Journal of Neural Engineering*, vol. 20(2): 026033, 2023. DOI: 10.1088/1741-2552/acc54e.

2. F. Iacoponi, A. Cafarelli, **F. Fontana**, *et al.*, "Optimal low-intensity pulsed ultrasound stimulation for promoting anti-inflammatory effects in macrophages," *APL Bioengineering*, vol. 7(1): 016114, 2023. DOI: 10.1063/5.0137881.

3. **F. Fontana**, *et al.*, "Development and validation of low- intensity pulsed ultrasound systems for highly controlled in vitro cell stimulation," *Ultrasonics*, vol. 116: 106495, 2021. DOI: 10.1016/j.ultras.2021.106495.

International Patents

1. **F. Fontana** *et al.*, "Cell Culture Support for Controlled Ultrasonic Stimulation", WO/2021/014331, [Issued (Italy); Pending (Europe)]. URL: https://tinyurl.com/36f3nw84.

International Conference Proceedings

1. A. Cafarelli, **F. Fontana**, *et al.*, "Dose-controlled lipus stimulation of cells," in *6th International Caparica Conference on Ultrasonic-based applications from analysis to synthesis*, Abstract - Oral Presentation, Caparica (Portugal), 2023.

2. F. Iacoponi, F. Orlando, **F. Fontana**, *et al.*, "Low-intensity pulsed ultrasound stimulation modulates neurotrophic factor secretion and inflammation in schwann cells," in *Tissue Engineering and Regenerative Medicine International Society (TERMIS) European Chapter Meeting 2023*, Abstract - Oral Presentation, Manchester (UK), 2023.

3. F. Iacoponi, **F. Fontana**, *et al.*, "Dose- controlled low-intensity pulsed ultrasound to modulate inflammatory response," in *6th World Congress of the Tissue Engineering and Regenerative Medicine International Society (TERMIS 2021)*, Abstract - Oral Presentation, Maastricht (The Netherlands), 2021.

4. F. Iacoponi, F. Iberite, **F. Fontana**, and L. Ricotti, "Biological evaluation of highly controlled low-intensity pulsed ultrasound stimulation set-ups," in *47th European Society of Artificial Organs Congress*, Abstract - Oral Presentation, London (UK), 2021.

5. **F. Fontana** *et al.*, "Highly controlled and usable system for low-intensity pulsed ultrasound stimulation of cells," in *41st International Conference of the IEEE Engineering in Medicine and Biology Society*, Paper - Oral Presentation, Berlin (Germany), 2019. DOI: 10.1109/embc.2019.8857772.

Skills

Languages · Strong reading, writing and speaking competencies for English.

Technical · Tissue Engineering, Engineering Thermodynamics, Polymers, Biomaterials, Biomedical Ultrasound, Cell Culture, Biomedical Devices, Bioengineering, Materials Engineering, Transport Phenomena, Systems Engineering.

Softwares · SolidWorks, COMSOL Multiphysics, Matlab, GraphPad-Prism, Adobe Photoshop, Adobe Illustrator.

Misc. · Problem solving, Innovation-oriented and passion for produced development, Communication skills, Analytical skills, Planning and organisation skills, Result orientation.

Miscellaneous Experiences

Certifications

2011 · **B2 First Certificate in English (FCE)**, Cambridge Assessment.

Volunteering

2008 – 2010 · **Volunteer Staff**, Interact: Rotary Sponsored Club.
Theatre activity to raise funds for disaster and humanitarian relief.

Sono a conoscenza delle sanzioni previste in caso di false attestazioni dichiarazioni mendaci ai sensi del D.P.R. 445/2000 e autorizzo il trattamento dei miei dati personali ai sensi dell'art. 13 Dlgs 196 del 30 giugno 2003 3 dell'art. 13 del GDPR (Regolamento UE 2016/679)