

# Irene Chiesa

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## Personal Data

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Date of birth: 22/02/1994

Nationality: Italian

Permanent address: Via Istria 8, 19124, La Spezia, Italy

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## Education

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24/07/2019-  
Present                      PhD in Information Engineering – Biomedical Engineering  
University of Pisa (Italy)

Supervisors: Eng. Carmelo De Maria, Prof. Giovanni Vozzi

My PhD project is focused on the development of a 3D bioprinted platform for the fabrication of functionally graded scaffolds through the direct mixing of different biomaterial inks

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30/04/2016                      Master Degree in Biomedical Engineering  
15/02/2019                      University of Pisa (Italy)  
Final mark: 110/110 with honors

Thesis title “Biofabrication and characterization of functionally biphasic scaffolds for osteochondral tissue” (Supervisor: Prof. Giovanni Vozzi, Prof. Riccardo Gottardi).

The thesis was carried out at the interdepartmental Research Center “E. Piaggio” of University of Pisa (Pisa, Italy) and at the Center for Cellular and Molecular Engineering of University of Pittsburgh (Pittsburgh, Pennsylvania, USA).

In my thesis I designed, developed and characterized an *in vitro* osteochondral model with vascularized bone phase using 3D bioprinted scaffolds and natural biomaterials.

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01/09/2012                      Bachelor Degree in Biomedical Engineering  
29/04/2016                      University of Pisa (Italy)  
Final Mark: 104/110

Thesis title “Characterization and biofabrication of a pH-sensible hydrogel”  
(Supervisor: Prof. Giovanni Vozzi, PhD Carmelo De Maria).

The thesis was carried out at the interdepartmental Research Center “E. Piaggio”  
of University of Pisa (Pisa, Italy) in collaboration with University of  
Manchester.

During my thesis I biofabricated 3D complex scaffolds made of self-assembling  
pH-sensible hydrogels by robotic dispensing.

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01/09/2007                      High School Diploma in scientific studies.  
31/07/2012:                      Liceo scientifico A. Pacinotti, La Spezia (Italy)  
Final Mark: 100/100

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### Working experience

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08/04/2019 -                      Visiting researcher position at The Children’s Hospital of Philadelphia –  
11/09/2019                      University of Pennsylvania. Biomaterial and Bioengineering Lab (PI: Prof.  
Riccardo Gottardi)

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### Personal Skills

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Language skills:                      Mother language: Italian  
   Other languages:  
   English: Level B2, FCE Cambridge, Reference Number: 116IT0280098  
   English: Academic English – European Level C1, Centro Linguistico  
   Interdipartimentale, University of Pisa, April 2020

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Computer skills:                      Programming languages: C++, Gcode.  
   Software: Office suite, Matlab, Slic3r, Repetier-Host, Imagej, Solidworks,  
   Fusion360, Comsol Multiphysics, Arduino, GraphPad Prism, Adobe Illustrator.  
   Web site design with WordPress

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Laboratory experience                      3D bioprinting, additive manufacturing (Fused deposition modelling and  
   stereolithography), electronical prototyping, rheological tests, mechanical tests,  
   swelling test, microcomputed tomography, fluorescence and brightfield  
   microscopes, image processing, histological staining, immunochemistry, real-time  
   PCR, cell culture.

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### Abroad experiences

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06/07/2018–  
15/12/2018: Health Science Research Fellow at the Center for Cellular and Molecular Engineering, Department of Orthopaedic Surgery of University of Pittsburgh (Pittsburgh, Pennsylvania, USA).

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### Publication list

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1. De Maria C., Fortunato G. M., **Chiesa I.**, Vozzi G. *Microfabricated and multilayered PLGA structure for the development of co-cultured in vitro liver models*. Bioprinting, 2020, e00084.
2. **Chiesa I.**, De Maria C., Lapomarda A., Fortunato G. M., Montemurro F., Di Gesu R., Tuan R. S., Vozzi G., Gottardi R. (2020). *Endothelial cells support osteogenesis in an in vitro vascularized bone model developed by 3D bioprinting*. Biofabrication, 2020, doi.org/10.1088/1758-5090/ab6a1d.
3. Lapomarda A., De Acutis A., **Chiesa. I.**, Fortunato G. M., Montemurro F., De Maria C. Mattioli Belmonte M., Gottardi R., Vozzi G. *Pectin-GPTMS based biomaterial: toward a sustainable Bioprinting of 3D scaffold for Tissue Engineering application*. Biomacromolecules. 2019, doi:10.1021/acs.biomac.9b01332.
4. **Chiesa I.**, Fortunato G. M., Lapomarda A., Di Pietro L., Biagini F., De Acutis A., Bernazzini L., Tinè M. R., De Maria C., Vozzi G. *Ultrasonic mixing chamber as an effective tool for the biofabrication of fully graded scaffolds for Interface Tissue Engineering*. The International Journal of Artificial Organs. 2019, doi:10.1177/0391398819852960.

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### Proceedings of International Meetings

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1. **Chiesa I.**, De Maria C., Lapomarda A., Fortunato G. M., Di Gesù R., S. Aliakbarighavimi, Montemurro F., R. S. Tuan, Vozzi G., Gottardi R. *Endothelial cells support osteogenesis in a vascularized 3D bioprinted in vitro bone model*. ORS 2020, 8-11 February, Huston, TX, USA. Accepted
2. **Chiesa I.**, De Maria C., Lapomarda A., Fortunato G. M., Di Gesù R., Montemurro F., Vozzi G., Gottardi R. *Endothelial cells support osteogenesis in a vascularized 3D bioprinted in vitro bone model*. TERMIS-AM 2019, 2-5 December, Orlando, FL, USA. Accepted
3. **Chiesa I.**, De Maria C., Lapomarda A., Fortunato G. M., Di Gesù R., Montemurro F., Vozzi G., Gottardi R. *Endothelial cells support osteogenesis in a vascularized 3D bioprinted in vitro bone model*. Biofabrication 2019, 20-22 October, Columbus, OH, USA. **Speaker**
4. De Maria C, **Chiesa I.**, Angeli S, De Acutis A, Mattei G, Montemurro F, Smith AM, Saiani A, Vozzi G. *Modelling of scaffold fabrication with a pH-sensitive hydrogel*. Biofabrication 2016, 29-31 October, Winston-Salem, NC, USA.
5. De Maria C, **Chiesa I.**, Angeli S, De Acutis A, Montemurro F, Smith AM, Saiani A, Vozzi G, *3D bioprinting of self-assembling hydrogels*. TERMIS 2016, 28 June – 1 July, Uppsala, Sweden

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### Proceedings of National Meetings

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1. **Chiesa I**, De Maria C., Lapomarda A., Fortunato G. M., Di Gesù R., Montemurro F., Vozzi G., Gottardi R., *Biofabrication and characterization of a biphasic construct to study osteochondral tissue in vitro*, VII Congress of the National Group of Bioengineering, Trieste, 9-11 June 2021, Accepted.
2. De Maria C., Lapomarda A., De Acutis A., **Chiesa I.**, Fortunato G. M., Biagini F., Bonatti A. F., Montemurro F., Vozzi G. *Biofabrication strategies for transforming food industry waste into added value tissue engineering products*. XX Congresso Nazionale C.I.R.I.A.F., Sviluppo Sostenibile, Tutela dell’Ambiente e della Salute Umana, 16-17 April 2020.
3. De Maria C, **Chiesa I**, Angeli S, De Acutis A, Montemurro F, Mattei G, Smith AM, Saiani A, Vozzi G. *Characterization and biofabrication of a pH-sensible hydrogel*. V Congress of the National Group of Bioengineering, Napoli, 20-22 June 2016.

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### Seminars

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1. “CROSSLAB: kick-off meeting” – Pisa (Italy); 27/03/2018
2. “TriesteNext, BioLogos: the future of life” – European exhibition of scientific research – Trieste (Italy); 25-27/09/2015

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### Awards

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- International Society for Biofabrication Travel Awards – Biofabrication Conference 2019, Columbus, Ohio, USA
- Thesis award “Franco Maria Monteverdi” – 2019 in collaboration with Gruppo Nazionale di Bioingegneria, Bressanone, Italy.

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### Additional informations

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- May 2011 – Present: Voluntary activities with non-profit clown-care association “Nasi Uniti” in La Spezia (Italy)
- September 2004 – September 2012: volleyball player in a competitive level – La Spezia (Italy)
- Driving Licence since October 2012

Pisa, 05/05/2020

Firma  
Irene Chiesa  
