



Biomedical Engineer, PhD at Politecnico di Milano, scientific experience in the field of experimental microfluidics:

- > design of experiments, characterization of microfluidic devices for biomedical applications (in vitro cellular assays, cell manipulation, cell characterization, drug infusion)
- > computational fluid dynamics addressed to the design of microfluidic set-ups
- > design and prototyping of microfluidic components by cleanroom fabrication techniques and 3D printing

## Education

2008 – February 2011: **PhD in Biomedical Engineering, with honors**, at Politecnico di Milano, Milano, Italy.

Thesis: “Micro-devices for high-throughput cellular adhesion assays” Interpolytechnics Doctoral Grant

Tutor: Prof. Gabriele Dubini – Supervisor: Prof. Federica Boschetti

2004 – 2007: **MS in Biomedical Engineering** at Politecnico di Milano, Milano, Italy.

Thesis: “Methodologies development for the study of bone cement infiltration in the osteoporosis treatment” Grade: 110/110

## Current Position

June 2020 – Feb 2026

**Assistant Professor, Researcher-TDa legge 240/10 - ING-IND/34 – Industrial Bioengineering**

DCMC Department of Chemistry, Materials and Chemical Engineering “G. Natta”– Politecnico di Milano  
Laboratory of Biological Structure Mechanics (LaBS)

**Lecturer** of “ Projects – Industrial bioengineering – bachelor Degreee in biomedical engineering – Politecnico di Milano.” AAA 2022-23, 2021-2022

**Scientific collaborator in the project “Single-cell Evolution with patient-Derived Organoids”,** a 5-year project awarded in 2018, led by Dr Giovanni Tonon, Fondazione Centro San Raffaele (FCSR), PI @Polimi Prof. G. Dubini, and funded by CRUK (Cancer Research UK) and AIRC (Italian Society of Cancer Research).

Scopus - Author ID:49862614700 h index 9 – 24 docs - 268 citations (as of 9th Dec 2022)  
<https://orcid.org/0000-0003-1003-4178>

Co-Founder at Merylo’ – start up company in the field of medical devices for innovative chemotherapy.

## Past Academic Position

Past Position

June 2013- June 2020

June 2012 – May 2013

**Post-doctoral research associate** at the DCMC Department of Chemistry, Materials and Chemical Engineering “G. Natta” - Laboratory of Biological Structure Mechanics (LaBS) (till 2013 @Department of structural Engineering) **Politecnico di Milano.**

Main research topics are the design, characterization and development of microfluidic devices for the treatment, culture or sorting of particulates/cellular samples by microfluidic strategies, especially for shear stress modulated phenomena.

Past Position

January 2012-May 2012

**Post-doctoral research associate** at the Life Science Electronics Laboratory (CLSE) - **EPFL École Polytechnique Fédérale de Lausanne - Losanne (Switzerland)**

The main topic of the research was the design of an electrical impedance micro-sensor for cell counting in microdevices for cellular assays.

## Principal investigator in completed research projects

- 2016-2018 - Self Assembled Monolayer coatings for lab-on-chip cell Sorting via Aptamer-Mediated reversible cellular adhesion (SAM4SAM) (funded by Fondazione Cariplo, Milan) 2014-2017
- 2014-2017 -Thermal water particles transport in respiratory system: aerosol inhalation enriched by nanoparticles (Funded by Fondazione FoRST – Fondazione Ricerca Scientifica Termale, Rome)

## Scientific Curriculum

**Since November 2018** : scientific collaborator in the project “**Single-cell Evolution with patient-Derived Organoids**”, a 5-year project awarded in 2018, led by Dr Giovanni Tonon, Fondazione Centro San Raffaele (FCSR), by Prof G. Dubini @Polimi, and funded by CRUK (Cancer Research UK) and AIRC (Italian Society of Cancer Research) with £ 4.8 million.

She has been working on the design of the microfluidic high-throughput platform for advanced drug screening on patient derived organoids, bringing her expertise in design and microfabrication of device for cellular assays. Microfabrication of prototypes is performed in POLIFAB, the cleanroom Microfabrication facilities of Politecnico di Milano

Her **research activity on microfluidics for biomedical applications** started during the **PhD studies (2008 – 2011)**. The results were collected in the PhD publication “*Microdevices for High-Throughput Cellular Adhesion Assays*” and it was the sum of results obtained working in four different research institutions: at LaBS, Politecnico di Milano, under the supervision of Prof. Gabriele Dubini, at the Life Science Electronics Laboratory (CLSE) - EPFL École Polytechnique Fédérale de Lausanne - Losanna (Switzerland) under the supervision of Prof. Carlotta Guiducci, and at Micronit Microfluidics– Enschede (The Netherlands) and collaborating with the group of Prof. Ruggero Pardi and Dr. Raffaella Molteni - Leukocyte Biology Unit, San Raffaele Scientific Institute (now San Raffaele Hospital OSR), Milan, Italy.

In **2013** she worked supporting the MSc degree project of Monica Piergiovanni at LaBS, about the **Encapsulation of drugs in Red Blood Cells, mediated by microfluidic mechanical stimuli** . The collaborations with Dr. Monica Piergiovanni and Dr. Giustina Casagrande continued and led to the foundation of a **Start Up company**, Merylo’ s.r.l., aiming at bringing an innovative device for chemotherapy to the clinics and to the market.

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