

PERSONAL INFORMATION

Francesco Mantegazza



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Sex M | Date of birth 29/04/1964 | Nationality Italian

POSITION Full Professor of Applied Physics, University of Milano-Bicocca.

WORK EXPERIENCE

- 2022-present **University Full Professor of Applied Physics (FIS/07, 02/D1)**
Department of Medicine and Surgery, University of Milano-Bicocca
- 2004-2022 **University Associate Professor of Applied Physics (FIS/07, 02/D1)**
Department of Medicine and Surgery, University of Milano-Bicocca
- 1999-2004 **University Researcher of Applied Physics (FIS/07, 02/D1)**
Department of Experimental Medicine, University of Milano-Bicocca
- 1993-1999 **University Researcher of Applied Physics (FIS/07, 02/D1)**
Department of Pharmacological Sciences, University of Milan

EDUCATION AND TRAINING

- 1992 **PhD in Physics**
University of Milan
Thesis title: "Kerr effect in colloidal suspension of polyelectrolytes"
- 1989 **Degree in Physics**
University of Milan
Thesis title: "Stretched exponential decays in colloidal suspension of polyelectrolytes"
110/110 cum laude

PERSONAL SKILLS

Mother tongue Italian

Other language

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Excellent	Excellent	Excellent	Excellent	Excellent
French	Good	Good	Good	Good	Good

Organisational / managerial skills PI of the Group of Medical Physics and Biophysics of the Department of Medicine and Surgery, University of Milano-Bicocca.
Supervisor of several master, PhD and PostDoc students of physics and biotechnology.

ADDITIONAL INFORMATION

Digital skills

Knowledge of the Windows operative system and applications Excel, Word, Power-Point, Photoshop applications, ImageJ, Mathematica, MatLab.

Other skills and research interests

- Optical properties of complex fluids.
- Electrokinetic phenomena of charged nanoparticles.
- Colloidal suspensions and polyelectrolytes.
- Mixed systems of nanoparticles-liquid crystals.
- Persistence length of polyelectrolytes in solution.
- Renewable energy from electrokinetic effects.-
- Physico-chemical characterization of nanoparticles.
- Development of single-molecule manipulation and imaging techniques.
- Nanomanipulation by using Magnetic Tweezers (MT) and Atomic Force Microscopy (AFM).
- Aggregation and characterization of amyloid fibrils.
- Nanomechanics of single molecule of DNA.
- Nanoparticles and Nanomedicine.
- Single-molecule studies of DNA supercoils, DNA transitions, and DNA superstructures.
- Nucleoid associated proteins and bacterial DNA packaging.
- Intrinsic disordered protein unfolding.
- Nanomechanics of single cells.

Publications Author of about 100 papers in peer-reviewed journals, about 40 as first, corresponding or last author.
Author of 4 patents.
Official H-Index (Scopus): 29

Projects

- National Project Coordinator FIRB 2001 (from 2002 to 2005). Title: "Misura mediante diffusione di luce della interazione di proteine con monostrati auto-aggregati di glicolipidi adsorbiti su nanoparticelle idrofobiche". Project ID: RBAU01ZJBC
- Project Coordinator Fondazione CARIPOLO 2003. Title: "Nano-biosensori per lo screening di antibiotici glicopeptidici".
- Project Coordinator Regione Lombardia 2003. Title: "Realizzazione e sviluppo di nano-biosensori di nuova concezione per lo studio delle interazioni intermolecolari".
- Partner of a European Project FP6 BONSAI (from 2006 to 2010). Title: "Bio-imaging with Smart functional nanoparticles". Project ID: 37639, FP6-LIFESCIHEALTH.
- Partner of a European Project FP7 NAD (from 2006 to 2013). Title: "Nanoparticles for Therapy and Diagnosis of Alzheimer Disease". Project ID: 212043, FP7-NMP.
- Partner of a Project Fondazione CARIPOLO 2008. Title: "Transparent Polymer NANOCOMPOSITES with Tailorable Optical Properties: Fabrication and Characterization". Project ID 2008-2523.
- Partner of a Project Fondazione CARIPOLO 2009. Title: "Metodi innovativi di sintesi e funzionalizzazione di nano- e micro particelle per uso biomedico". Project ID 2008-011.
- Partner of a Project Regione Lombardia 2010. Title: "Realizzazione di un network tra università e aziende lombarde finalizzato alla ricerca biotecnologica per la salute, in particolare a nuove forme di rimozione extracorporea di anidride carbonica (CO₂)". (2009). Project ID: SAL 63 2010-017.
- Partner of a European Project FP7 CAPMIX (from 2010 to 2014). Title: "Capacitive mixing as a novel principle for generation of clean renewable energy from salinity differences". Project ID: 256868-FP7-ENERGY.
- Project Coordinator Fondazione CARIPOLO 2011 (from 2012 to 2014). Title: "Nanomaterials for "Blue Energy": renewable energy from capacitive mixing by using supercapacitors with nanostructured electrodes (NANOBLUE)". Project ID: 2011-0336.

- Selected conferences**
- Jülich Soft Matter Days 2002 (invited)
Oral presentation: "Demixing transition in microemulsions of water in thermotropic liquid crystals
Date: 19 - 22 November 2002, Kerkrade, NL
 - International School of Liquid Crystals - ERICE 2004 Phase Transitions in Liquid Crystals: effects of surfaces and ferroelectric subphases
Oral presentation: "Nematic ordering in presence of quenched disorder"
Date: 10 - 17 July 2004, Erice (TP), Italy
 - The 80th ACS Colloid and Surface Science Symposium
Oral presentation: "Anomalous orientation of charged rod-like colloidal particles in external electric fields"
Date: 18 - 21 June 2006, Boulder, CO, USA
 - International School of Liquid Crystals - ERICE 2006 13th Workshop: Colloids, Interfaces and Liquid Crystals
Oral presentation: "Anomalous orientation of charged rod-like colloidal particles in external electric fields."
Date: 19 - 25 July 2006, Erice (TP), Italy
 - NPS'08 Nanoscale Phenomena and Structures in Bulk and Surface Phases (invited)
Oral presentation: "Anomalous orientation and clustering of charged rod-like colloidal particles in external electric fields".
Date: 26 February - 02 MArch 2008, Sofia, Bulgaria
 - 4th Japanese - Italian Workshop on Liquid Crystals
Oral presentation: "Anomalous Orientation of Charged Rod-like Colloidal Particles in External Electric Fields"
Date: 7 - 9 July 2008, Nara, Japan
 - XX Congresso Nazionale della Società Italiana di Biofisica Pura ed Applicata (SIBPA)
Oral presentation: "Nanomechanics of DNA in the presence of drugs"
Date: 11 - 14 September 2010, Arcidosso (GR) Italy.
 - Summer School 2013 XX Escuela Internacional de Verano "Nicolás Cabrera" (invited)
Biomolecules and Single Molecule Techniques
Oral presentation: "Magnetic tweezers measurements of the nanomechanical properties of DNA"
Date: 21 - 26 July 2013, Miraflores de la Sierra, Madrid
 - Workshop on Complex Systems, (invited)
Oral presentation: "Magnetic tweezers measurements of the nanomechanical properties of DNA"
Date: 15 January 2015, Department of Physics, Università degli Studi di Milano
- University Courses**
- Professor of several courses at university level of Medical Physics and Biophysics at the University of Milano-Bicocca.
Supervisor of several master thesis and PhD in Physics and Biotechnology at the University of Milano and Milano-Bicocca.
- Conference organizer**
- "International Workshop on Salinity Gradient Energy" in the European Project FP7 CAPMIX, Milan from 4 to 6 September 2012.
 - "Precision Nanomedicine" at Ettore Majorana Foundation and Center for Scientific Culture di Erice (Trapani, Italy) from 2 to 8 July 2019
- Patents**
- Mantegazza F., Brogioli D., Salerno D., Ziano R., "Device for Measuring Properties of a Medium by Scattered Radiation and Relative Method", Bibliographic Data: Wo2012056413 (A1) — 2012-05-03
 - Pesenti A. M., Zanella A., Salerno D., Mantegazza F., Scaravilli V., Castagna L., "Regional Scoagulation System for an Extracorporeal Circulation Circuit", Bibliographic Data: Wo2016103216 (A1) — 2016-06-30
 - Pesenti A. M., Zanella A., Salerno D., Patroniti N. A., Mantegazza F., Gattinoni L., Caironi P., "Extracorporeal Circuit System for the Treatment of Hydroelectrolyte and Acid-Base Blood Imbalances", Bibliographic Data: Wo2016024217 (A1) — 2016-02-18
 - Pesenti A. M., Zanella A., Salerno D., Patroniti N. A., Mantegazza F., "Extracorporeal Circuit for CO2 Removal From Blood", Bibliographic Data: Wo2016016870 (A1) — 2016-02-04

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