

MARCO BUSCAGLIA
marco.buscaglia@unimi.it



PERSONAL INFORMATION ORCID ID: 0000-0001-5010-0278
Università degli Studi di Milano
Department of Medical Biotechnology and Translational Medicine
Via F.lli Cervi 93, 20090 Segrate (Milano) - Italy

WORK EXPERIENCE

From 2015 Associate Professor of Applied Physics
Università degli Studi di Milano
Department of Medical Biotechnology and Translational Medicine

- Research coordination of molecular biophysics and optical materials and devices at the Laboratory of Complex Fluids and Molecular Biophysics
- Teaching in undergraduate courses of the Faculty of Medicine and Surgery (Medical Physics, Applied Physics, Optics, Image Processing)

From 2005 to 2015 Researcher of Applied Physics
Università degli Studi di Milano
Department of Chemistry, Biochemistry and Biotechnology for Medicine, then Department of Medical Biotechnology and Translational Medicine

- Experimental research in the field of complex fluids, molecular biophysics, and optical materials and methods for the study of biomolecular interactions
- Teaching in undergraduate courses of the Faculty of Medicine and Surgery (Medical Physics, Applied Physics, Image Processing)

From 2002 to 2004 Pot-doc fellow
National Institutes of Health (NIH), Bethesda, MD (USA)
Laboratory of Chemical Physics (Chief, W. A. Eaton)

- Experimental research in the field of protein biophysics and optical methods for molecular biophysics

EDUCATION AND TRAINING

From 1999 to 2002 PhD
Università degli Studi di Pavia
PhD in Electronic Engineering and Computer Science (supervisor Prof. V. De Giorgio)

- Experimental Optics, electro-optics, light scattering, liquid crystals

From 1992 to 1998 Laurea degree 110/110 cum laude
Università degli Studi di Pavia
Degree in Electronic Engineering and Electro-optics (supervisor Prof. V. De Giorgio)

- Electronics, Physics, Optics, Optical Materials and Devices, Computer Science

From 1987 to 1992 High School Diploma 60/60
Liceo Scientifico G. Galilei, Voghera (PV)

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English: fluent

Communication skills Good communication skills, also in multidisciplinary and international environments, gained through twenty years of experience in experimental research, performed in collaboration with national and international partners.

Organisational / managerial skills

- Coordination of multidisciplinary research teams (Physics, Engineering, Chemistry, Biology, Biotechnology) as supervisor of bachelor, master and PhD thesis and post-doc fellowships and as principal investigator of national and international research projects.
- Coordination of technical development in a high-tech start-up company (ProXentia s.r.l.).
- Member of the Committee in charge of proposing a new Statute of the University of Milano, according to law 30.12.2010 n. 240 (2011).

Job-related skills

- Experimental research in Optics, Biophysics, Soft Matter Physics, using advanced instrumentation, also custom-made in lab, and laser devices.
- Development of numerical models for Optics, Molecular Biophysics and Complex Fluids Physics.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

- good command of tools for analytical and numerical calculation, data analysis and graphical representation.
- development of programs for the analysis of complex data, development of numerical models applied to optics and molecular biophysics, digital image processing, interfacing of scientific instruments.

Main research activities Experimental research on the development of optical methods for the study of complex fluid systems (biomolecules in solution, liquid crystals, colloidal systems) and molecular mechanisms with biological relevance (ligand-receptor recognition, interactions among nucleic acids, protein folding) by means of novel optical methods. In particular:

- Development of “label-free” optical biosensors for the measurement of molecular interactions.
- Study of functional molecular structures on a surface based on DNA nanotechnology.
- Study of the conformational and dynamical properties of disordered proteins and peptides by time-resolved, laser spectroscopy.
- Structure and dynamical response of heterogeneous liquid crystal, nanostructured materials.

Current research activity Development of optical technologies and methods for biosensors. Development of novel optical methods for the detection and quantification of molecular recognition events of various kind, including antibody-antigen, protein-drug, protein-toxin, protein-sugar and between nucleic acids, for diagnostics purposes and for the study of molecular and cellular mechanisms of diseases.

ADDITIONAL INFORMATION

Publications Author of more than 50 publications on international scientific journals and conference proceedings. Total IF >200, total citations Scopus 1081 (Google Scholar 1293), h-index Scopus 20 (Google Scholar 21)
<https://air.unimi.it/browse?type=author&authority=rp11488>
<https://orcid.org/0000-0001-5010-0278>

Patents Inventor of two international patents

National Academic Qualification Qualified as Full Professor in Applied Physics (02/D1) on April 4th, 2017

Projects Principal investigator of the University of Milan unit for the European project NAPES (www.napes.eu), coordinator of 6 regional or university projects and of 7 research collaboration agreements with companies. Team member in 7 national or international research projects

- Technology Transfer**
- Founder, vice-president and board member of Proxentia S.r.l. (www.proxentia.com), a spin-off of the University of Milan.
 - Brambilla award for innovation granted by Comune di Milano and Camera di Commercio di Milano - 2006.
- Referee activity**
- Referee of scientific papers for VQR 2011-2014.
 - Anonymous referee of scientific papers mainly concerning the use of optical methods in biophysics for several international journals with impact factor, including: Biosensors and Bioelectronics, Nanoscale, Chemical Communication, Journal of Molecular Biology, Molecular Systems Design & Engineering, Proteomics, Diagnostics, Analytical Methods, Analyst, Sensors, Sensors and Actuators B, Journal of Biophotonics.
- Evaluation activity**
- Reviewer for several competitive examinations, including:
- Member of the Committee for the admission to PhD Programs or doctoral defence for different national Universities.
 - Member of several committees for the admission to post-doc positions (about 20 competitive examinations from 2005).
 - Referee of research projects for ERANETMED 2016, early stage researcher program "Rita Levi Montalcini", University of Udine, Slovenian Research Agency, Futuro in Ricerca 2013.
- Scientific communication and dissemination**
- From 2005:
- Oral presentations of research results in 27 conferences or national and international workshops, of which 10 invited.
 - Scientific dissemination activity on printed journals (University journal, newspapers, popular science journals, also available on-line), prototypes showcase and demonstrations, editor of dissemination via web for the Department of Medical Biotechnology and Translational Medicine.
- Teaching activity**
- From 2005:
- teaching duties of Physics, Optics and Digital Image Processing for various Laurea Degree of the Faculty of Medicine (Medicine and Surgery, Biomedical Laboratory Technology, Optometric and Ophthalmology Assistant, Physiotherapy, Podology, Techniques of Accident Prevention in the Workplace).
 - teaching duties for graduate school in Nuclear Medicine, master in Biomechanics and a course for the PhD in Physics held in English, titled "Experimental Methods for the Systems at the Nanoscale".

Personal information

I authorize the handling of personal information in this curriculum, according to D.Lgs n. 196/03 and following modifications and Regulations EU 679/2016 (General Regulations concerning Data Protection or GRDP) and art. 7 of University Regulations concerning protection of personal information.

I authorize, according to D.lgs 14/03/2013 n. 33 concerning transparency, in case of conferment of the position and of the fellowship, the publication of this curriculum in the web site of Università degli Studi di Milano in the section "Amministrazione trasparente", "Consulenti e collaboratori".

Date March 25th, 2019

Signature 