

## CURRICULUM VITAE

SIMONE VESENTINI, PhD

DIPARTIMENTO DI ELETTRONICA, INFORMAZIONE E BIOINGEGNERIA

Politecnico di Milano

Via Golgi 39, 20133 Milan ITALY

Email: [simone.vesentini@polimi.it](mailto:simone.vesentini@polimi.it)

Website: [www.biomech.polimi.it/](http://www.biomech.polimi.it/)

### Education

May, 2004

Ph.D. in Bioengineering, Department of Bioengineering, Politecnico di Milano

July, 1999

MS Mechanical Engineering Specialization: Bioengineering, Politecnico di Milano

### Positions and employment

June 2008-present

Assistant professor, Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano

May 2006- May 2008

Research fellow, Department of Bioengineering, Politecnico di Milano EU STREP project "Computer aided molecular design of multifunctional materials with controlled permeability properties"

May 2005- May 2006

Research fellow, Department of Bioengineering, Politecnico di Milano, EU Marie Curie Action, project title: "Biomimetic Systems"

August 2004

Visiting Professor, Laboratory of Biomaterials and Bioengineering, Laval University Quebec, Canada

May 2004- May 2005

Research fellow Department of Bioengineering, Politecnico di Milano, Project title: "Computational design of intelligent biointerfaces for cellular adhesion based on molecular imprinting methods"

### Research Activities

2012- present

PI of the Fondazione Cariplo research grant entitled "Synthesis of a molecular brush with tuned biomimetic architectures".

2011-present

PI of the Politecnico di Milano research grant «5 per mille junior» entitled «Unravelling the mechanism of rare collagen diseases by means of a bottom-up and interdisciplinary approach».

2008-2011

Co-investigator in the Italian Institute of Technology (IIT) project entitled "Models and methods for degradable materials".

2005-2008

Co-investigator for the research activities of POLIMI Unit of one WP in the STREP European project FP6 "Computer aided molecular design of multifunctional materials with controlled permeability properties".

2005-2008

Co-investigator and supervisor of the activities of one PhD Student in the Marie Curie Action Early Stage Training (EST) European project FP6 on "Active Biomimetic Systems".

### Research Grants

2012-2015

PI of the Fondazione Cariplo research grant "Synthesis of a molecular brush with tuned biomimetic architectures".

2011-2012

PI of the Politecnico di Milano research grant "5 per mille junior" entitled "Unravelling the mechanism of rare collagen diseases by means of a bottom-up and interdisciplinary approach".

2008-2011

Italian Institute of Technology (IIT) project entitled "Models and methods for degradable materials".

2003-2006

Mobility Grant co-funded by the Italian and Canadian Foreign Affairs Ministries entitled "Conception et développement de structures polymériques biomimétiques et proactives pour la régénération de tissus cardio-vasculaires".

### **Research Achievement and Interests**

Understanding the mechanics of biomolecules and biomedical materials starting at fundamental – atomistic- level by using molecular modelling approach and comprehending the structure-function relationship in biological molecules and biomaterial: these are the main interests of my research. The idea is that by elucidating the construction rules of living matter the possibility to create new materials and systems will be offered. However a real breakthrough requires the understanding of the basic building principles of living matters and a study of their physical properties, to control form, size, and function of these new systems. I believe that a biomimetic approach cannot be limited to the copy of solutions proposed by Nature, but rather a more global strategy, where a multidisciplinary approach should be efficiently adopted.

### **National and International Collaborations**

I started collaborations pertaining to fields other than bioengineering such as material science, molecular biology, biochemistry, nanoscience, cell biology and tissue engineering:

Markus J Buehler, Dept. Civil & Environmental Engineering MIT, US

Laura Cipolla, Dept. Biotechnology and Biosciences, Università Milano-Bicocca, Italy

Mario Raspanti, Dept. Human Morphology Università dell'Insubria, Italy

Rodolfo Quarto, Head of the Stem Cell Laboratory, Facoltà di Farmacia, Università degli Studi di Genova, Italy

Antonella Forlino, Dept. of Biochemistry, Università degli Studi di Pavia, Italy

Diego Mantovani, Laboratory for Biomaterials and Bioengineering of Laval University, Quebec

Francesca Boccafoschi, School of Medicine, Università degli studi del Piemonte Orientale, Italy