Università di Genova

Elena Angeli

Associate Professor

EDUCATION AND TRAINING

2007
PhD in Physics
University of Modena and Reggio Emilia - IT

Research activity in the field of Applied Physics FIS/07

2003
Degree in Electronic Engineering
University of Modena and Reggio Emilia - IT

PROFESSIONAL HISTORY

2024 - ongoing
Associate Professor
Applied Physics | PHYS-06/A
University of Genoa – IT

Study of biological systems at the nanoscale using biophysical techniques (e.g. super-resolution microscopy, electrophysiology), biosensing.

2018 – 2024
Researcher
Applied Physics FIS/07
University of Genoa – IT

Study of biological systems at the nanoscale and biosensors, study of neuronal receptors using electrophysiological methods, application of super-resolution microscopy techniques, single-molecule techniques, and fluorescence microscopy to the study of biological systems and structures of medical interest.

2015 – 2018
Researcher
Experimental Physics FIS/01
University of Genoa – IT

Design, fabrication, and characterization of micro- and nanofluidic devices for biomedical applications and biosensors.

2012 – 2015
Research Fellow
University of Genoa – IT

Design and construction of microfluidic structures for 3D cell cultures and nanofluidic sensors for biomolecules and nanomaterials. Research grant title: "Micro- and nanofluidic structures for the growth of 3D cell cultures." Main project activities: development of polymeric devices for the growth of 3D cell cultures. Specifically: a) Characterization of the morphology of various cell lines using SEM, STEM, and AFM techniques; b) Design and construction of micro- and nanofluidic devices for 3D cell culture, DNA and miRNA extraction, biomolecule concentration, and single-cell manipulation. Development of 3D-printed microfluidic systems. Activity carried out as part of the FIRB Newton project (RBAP11BYNP_003).

2007 – 2011
Post-Doc
University of Genoa – IT

Responsible of the NanoMolecular Sieves subproject of the NanoMed laboratory, which focused on the design, fabrication, and characterization of structures for the nanoconfinement of biomolecules for the development of systems based on innovative separation strategies. The fabrication methodologies and separation strategies developed have been the subject of international patents.

ACADEMIC APPOINTMENTS

2021- ongoing
Member of the "giunta" of the Department of Physics
Università di Genova – IT

2023 – ongoing
Member of the Technical Scientific Committee of the strategic center "Security, Risk and Vulnerability"
Università di Genova – IT

2023 – ongoing
Member of the PhD committee (Collegio dei docenti) in "Physics and Nanoscience"
Università di Genova – IT

2023 – ongoing
Responsible for the Department of Physics of the University of Genoa for the national "Physics" project within the "Piano Lauree Scientifiche" (PLS).

The PLS-Phisics project has the following objectives: identify, design, test, and disseminate initiatives throughout the country aimed at providing high school students with a correct understanding of physics, its cultural richness, and its power as a tool for scientific and technological thought, also with the aim of developing aspirations for scientific studies, and for physics in particular.

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EXPERIENCE

MAIN SEMINARS

She has contributed to research presented at over 60 national and international conferences on topics related to the following: nanotechnologies applied to biomedicine, biosensors, micro- and nanofluidics for biomedical applications, super-resolution microscopy, single-molecule microscopy techniques, and neuroscience studied using biophysical methodologies.

EDITORSHIP OR PARTICIPATION IN EDITORIAL BOARDS OF JOURNALS, PUBLISHING SERIES, ENCYCLOPAEDIAS AND TREATISES

Reviewer for several scientific journals, including Microelectronic Engineering (Elsevier), ACS Applied Materials and Interfaces (American Chemical Society Publication), PLOS-ONE, Lab on Chip (the Royal Society of Chemistry), Applied Sciences (MDPI), Nanoscale (the Royal Society of Chemistry), Sensors (MDPI), Polymers, and Micro. Editorial roles in international journals: Guest editor for the journal “Micromachines,” Member of the Topical Advisory Panel for the journal “Sensors.” Review editor for Frontiers in Bioengineering and Biotechnology in the “Biofabrication” section.

PARTICIPATION IN THE CREATION OF NEW BUSINESS ENTITIES (SPIN-OFFS), DEVELOPMENT, USE AND COMMERCIALISATION OF ACADEMIC PATENTS

2010 - 2015

Founder and CEO of NANOMED s.r.l., an accredited spin-off of the University of Genoa. As part of her work for NANOMED s.r.l. (a company within the Tecnobionet technology hub), she has focused on the development of nanofluidic devices for the manipulation of biomolecules and nanoparticles, focusing on both fabrication and structural characterization. These technologies are based on two patents developed as part of her research.