Elisabetta COLOMBO - *CV*

Elisabetta Colombo graduated in Physics of Advanced Technologies at the University of Torino in 2005 where she worked in collaboration with the National Institute of Nuclear Physics (INFN) for the development of radiation-hard particle detectors. From 2005 to 2008, during her PhD at the Experimental Physics Department at the University of Torino, she specialized in semiconductors characterization techniques for the analysis of composition, morphology and transport, structural or electrical properties. She worked then as post-doc fellow at the Electron Devices and Circuits Department at the University of Ulm in Germany where she designed, fabricated and tested hot filament CVD diamond sensors for drug-screening and bio-chemical applications, constantly interacting with neuroscientists and clinical groups. Back to Italy, with an improved background in electrochemistry and cleanroom fabrication technologies, she worked in the private sector for a couple of years, focusing first on solar cells technologies, and subsequently on radar and navigation systems as thermal engineer of a R&D department in the private sector.

She was then post-doc fellow at the Synaptic Neuroscience and Technology (NSYN) Center of the Italian Institute of Technology (IIT) in Genova, where she focused her research on the development and characterization of photosensitive neural interfaces. Since 2013 at IIT, her main activity was related to a novel retinal device based on photovoltaic conjugated polymers able to modulate neuronal activity upon illumination at the level of membrane potential in cultured neurons, or more complex neuronal networks like retina explants. In the last ten years, she followed the successful development and translation of such technology in vivo to rodents, on top of the engineering of different declinations of the prototypical retinal prosthetic strategy in the form on nanoparticle or blended with smart materials such as graphene.

Following up on these projects based on photovoltaic polymers for visual restauration, she was involved in different interdisciplinary projects deputed to the development of light-sensitive neurostimulation tools from the fabrication, to the in vitro testing, to the final application in vivo. Among these, she could dedicate particular attention to novel retinal prosthetics strategies based on conjugated polymers for the recovery of the blind.

Now, she is Technologist at the NSYN Center of IIT in Genova where she provides the support and know-how for the development of successful therapeutic photostimulation strategies in the field of vision restauration, she support their technological translation to clinical practice.