



Seminarankündigung

**Dienstag, 2. Juli 2013
13:00 Uhr**

WSI, Seminarraum S 101

“Polymer-based artificial retinal prosthesis”

A key issue toward the realization of retinal prosthetic devices is a reliable transduction of the information carried by light into specific patterns of electrical activity at the level of the networks involved in visual information processing. In this perspective, soft organic materials offer a unique chance in coupling artificial sensors with neuronal tissues. We recently reported the successful interfacing of an organic blend with a network of primary neurons, via a photo-excitation process. Here, we will report the novel use of a single-component organic film of poly(3-hexylthiophene) to trigger neuronal firing upon illumination. Moreover, we will demonstrate that this bio-organic interface restored light sensitivity to irradiance in the daylight range in explants of rat retinas with light-induced photoreceptor degeneration. These findings broaden the potential utility of fully organic devices in sub-retinal prosthetic implants via the exploitation of the advantages of organic materials. Preliminary results of in-vivo implantation of polymer-based devices will be finally discussed.

Dr. Maria Rosa Antognazza
Center for Nanoscience and Technology of IIT@PoliMi
Milano, Italy