

Polythiophene nanoparticles induce light sensitivity in living tissue

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Light can be used for controlling cell activity, with high space and time resolution and a virtually infinite number of configuration, free from wiring constrains. Yet there are drawbacks, such as light absorption and scattering, hampering delivery into deep tissues, and a fundamental limitation: by and large living cells are transparent. In this talk we will briefly review the state of our research regarding organic bio interfaces for inducing light sensitivity in cells, both in vitro and in vivo. The coupling mechanism of the biotic/abiotic interface is still far from being understood, attempts to shed light will be introduced. The possible application of dispersed interfaces, obtained by spreading organic nanoparticles into living tissues will be discussed. Finally an update on the artificial retina project will be presented, as one of the most appealing application of this emerging technology.

Prof. Guglielmo Lanzani is since 2009 coordinator of the Center for Nano Science Technology@POLIMI Istituto Italiano di Tecnologia, and since 2011 Full Professor of Physics at Department of Physics, Politecnico di Milano. Prof. Guglielmo Lanzani research activity regards the science and technology of nanostructured and molecular materials (organic semiconductors, carbon nanotubes and semiconductor nanocrystals) for application in energy, neuroscience and medicine. He authored > 260 papers in international journals and present >100 invited talks at international conferences.

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CNR Research Area

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