

CNR – Istituto di Struttura della Materia

nell'ambito del progetto

Deposizioni per ElectroSpray Ionization e biosensoRi (DESIR):

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Giovedì, 6 Febbraio 2020

11:00 a.m.

Prof. Raffaele Velotta

Dipartimento di Fisica , Università di Napoli

Photochemical Immobilization Technique for Biosensing

Surface functionalization is a crucial issue in biosensing since it affects both the sensitivity and the specificity of the resulting device. In view of its unique properties, gold is one of the most used material finding application in a number of transducers (Quartz Crystal Microbalance and Surface Plasmon Resonance among the others); thus, several approaches are proposed to bind appropriate bioreceptors to gold, all of them sharing quite complex chemistry. As an alternative method, Photochemical Immobilization Technique (PIT) offers a simple and effective way to tether antibodies upright to gold electrodes so that their variable part (i.e. the antibody region capable to recognize the antigen) is exposed to the solution. By exploiting the QCM as a transducer, this technique has been successfully demonstrated for contaminants of environmental interest such as parathion as well as for toxic or undesired compounds in food like patulin and gliadin. PIT has been recently extended to electrochemical- and optics-based devices thereby proving itself to be a general functionalization method in immunosensing.

lorenzo.avaldi@ism.cnr.it

