



CoffeeTalk@ISOF

Fluorescence lifetime imaging at ISOF: an overview of the main achievements

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Among the various imaging techniques implemented up to now fluorescence has been widely exploited as a very effective tool, especially in the field of biological samples. Fluorescence-based imaging techniques often rely on the fluorescence intensity feature even though this property strongly depends on the local environment of the fluorophore and quenching can be quite easily provoked by the presence of other agents. Consequently other fluorescence-based applications have been developed dealing with the monitoring of ratiometric fluorescence signals or fluorophore spectral features. Few approaches have exploited the fluorescence lifetime features, a very powerful and environment sensitive feature that can afford important insights in the fluorescent system even when fluorescence intensity and spectral data are both failing in furnishing information. Fluorescence lifetime imaging (FLIM) has gained importance during the last decade being a powerful tool for investigations of fluorophores in a biological context or luminescent materials. Near ISOF I have explored several systems by means of FLIM both in the frame of materials characterization and theranostics. During my talk I will discuss the results obtained with this technique for some representative examples of both fields of application. The results have been obtained in the frame of the projects NANOMAX-CHEM, ITN-Cyclon, ITN-CyclonHit and AIRC grants with the University of Catania and Pavia.

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CNR Research Area
Via Gobetti 101, Bologna



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