

Nanoscopy and Multidimensional Optical Fluorescence Microscopy.

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Microscopy is an essential tool for analysis of cellular structures and function and the advent of new fluorescent probes and super-resolution light microscopy techniques greatly facilitated the study of dynamic processes in living cells: the race for resolution improvement is running with different approaches [A. Diaspro (ed.) (2009) “Nanoscopy and Multidimensional Optical Fluorescence Microscopy“, Chapman and Hall]. At the Nanoscopy lab of the Italian Institute of Technology, formerly www.lambs.it, after the above mentioned approaches we moved to optical nanoscopy by setting up a STED microscope based on a white light laser source and designing an architecture that combines the possibility of imaging large samples and of exploiting photactivatable fluorescent proteins. Such combined approaches will be outlined.