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Infrared Scanning Near-field Optical Microscopy in Material Science and Biology.

Monday, 12 October 2015 14:30 (15 minutes)

I will give an overview of our activity in the field of Infrared Scanning Near-field Optical Microscopy (SNOM): several applications in Material Science and Biology will be presented as well some recent developments in instrumentation. In particular, our results will regard differences in the chemical distribution of the different bonds in biological cells: in fact by coupling a SNOM with a tunable infrared source (FEL) it is possible to perform a spectroscopic study on the spatial distribution of chemical species and on other laterally-fluctuating properties [3-4]. This approach has also the potential to provide diagnostics for oesophageal and other type of cancer [5].

[1] A. Cricienti et al. Appl. Phys. Lett. 90 (2007) 033902.

[2] J. Generosi et al. J. Appl. Phys. 104 (2008) 106102.

[3] A.D. Smith, et al., Appl. Phys. Lett., 102 (2013) 053701.

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