CORRELATED IMAGING BY USING FAR FIELD AND NEAR FIELD MICROSCOPY TECHNIQUES

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In our work we present some investigations on biological samples at micro and nanoscale by using label free effects in laser scanning microscopy techniques. Lately we developed a new multimodal system which includes several microscopy techniques working in far field and in near field. One of the main advantages of the system is connected with the possibility to image the same area of the sample at micro and nanoscale by using far field and near field, so that a correlation between the images could be made and a explanation of the images at nanoscale can be done. A new technique based on apertureless scanning near field is presented. In Fig. 1 are shown the images obtained by us using 4 different techniques integrated in the multimodal system.

Figure 1. The images of the unstained HeLa cells with Staphylococcus aureus. a) Far-field (CLSM) autofluorescence, excitation wavelength: 488 nm; b) AFM topography; c) s-SNOM 2nd amplitude; d) tip-enhanced non-linear optical microscopy, excitation wavelength: 680 nm; e) tip-enhanced non-linear optical

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