

Photonics in Medical Imaging

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This talk will explain the major role played by photonics in modern medical imaging in the context of the spectacular development of *in-vivo* molecular imaging, which will soon allow to bridge post-genomics research activities with new diagnostics and therapeutic strategies for major diseases, like cancer, degenerative and genetic disorders. Moreover, the repeatability of non-invasive approaches allows an evaluation of drug targeting and pharmacokinetics studies on small animals, as well as a precise screening and treatment follow-up of patients. The technical requirements on imaging devices are very challenging but always rely on a precise measurement of photons in an energy range covering a large spectral domain from infrared to energetic gamma rays.