



PhD Program in Materials Engineering
Politecnico di Milano
Piazza Leonardo da Vinci, 32 - 20133 MILANO



Invitation to the Conference of Prof. Pavel Matousek, Sala Beltrami (Dip. ABC, Building 5, Campus Leonardo), February 11th 2015, 3:00 pm

Exploring deeper into matter with Spatially Offset Raman Spectroscopy

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Raman spectroscopy is a well-established analytical technique capable of conveying rich chemical information on probed sample. However, until recently it had been restricted to near surfaces of diffusely scattering samples such as powders, biological tissues and other non-see-through objects. The presentation will discuss the development of subsurface Raman probing capability at Rutherford Appleton Laboratory that leads to the establishment of Spatially Offset Raman Spectroscopy (SORS), a concept permitting by up to two orders of magnitude deeper penetration depths in diffusely scattering media than accessible with conventional Raman spectroscopy. The principle of SORS and novel applications it unlocks will be discussed. These will include noninvasive bone diseases and breast cancer diagnosis, applications in cultural heritage, pharmaceutical analysis and aviation security.