Surface Enhanced Raman Spectroscopy (SERS) for the materials characterization in the Cultural Heritage field

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The complexity of the problems related to the wide variety of materials used in the field of Cultural Heritage and the degradation these materials often can suffer does not allow to select a single methodology that can be used in a standard way for this kind of analysis. The study, in fact, may occur at various levels, even if, it is often preferred to perform the analysis employing techniques that are, as far as possible, non-destructive or micro-destructive. Optical techniques are widely diffused and extremely well established in the field of Artworks diagnostics because of their effectiveness and safety. The purpose of this talk is giving an overview of Raman spectroscopy, together with an insight into Surface Enhanced Raman spectroscopy (SERS), a fundamental technique which aims to overcome the limitations of Raman, introducing the basics of the methodologies along with some case studies.

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