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Nota di contenuto	Foreword -- Historical Overview -- Theory and Understanding -- Combination of RS and Other Techniques -- Pigments, Dyes and Coloured Agents -- Cultural Heritage Meets Art Forensics -- Jewellery and Gemstones -- Cave Paintings and Rock Art -- From Frescoes to Paintings -- Analytical Raman Spectroscopy of Manuscripts and Maps: The Role of Inks -- Patina, Corrosion and Conservation Treatment -- Glass, Pottery, Enamelled Artefacts -- Archaeology of Biomaterials: Mummies, Ivories, Resins, and Textiles -- Raman Spectroscopy and Industrial Archaeology -- Raman Spectroscopic Analysis of a Putative Century Oil Painting Depicting William Shakespeare -- “Noli Me Tangere”: A renaissance Original? A Holistic Analytical Spectroscopic Challenge -- A Case Study. Raman Spectroscopic Analysis Of Welsh Porcel -- Case Study: In-Field and On-Site Raman Spectroscopic Analysis -- Case Study: Non-Invasively Documenting the Transfer of Enamelling Technology form Europe to China and Japan. The role of the Jesuits in the 17th Century -- Case Study: The Shroud of Turin - Iconic Relic or Fake? The Role of Raman spectroscopic Analysis in its Forensic

Appraisal -- Case Study: A Unique Rockingham English Porcelain Table. A Holistic Forensic Analysis -- A Little Knowledge is Dangerous Thing. A Miscellany of Faux-Pas in the Cultural Heritage Of Literature -- Raman Analysis: What is Straightforward, What is Difficult and Future Perspectives.

Sommario/riassunto

This book addresses the application of Raman spectroscopic techniques to a range of diverse problems which arise in the study, conservation and restoration of artefacts and sites closely related to our cultural heritage as well as in authentication. These themes are naturally wider than what at first might be considered as artworks and archaeological artefacts and the topics include pigments, paintings, ceramics, glass, sculpture and patination / corrosion, textiles, industrial archaeology, the degradation and preservation of biomaterials, mummies and human skeletal remains. An interesting feature is the inclusion of modern case studies which describe specific problems and approaches to the Raman spectral analysis of items important to our cultural heritage. The text is prefaced with an introduction to the important parameters used in nondestructive Raman measurements and also highlights some future applications based upon novel miniaturised instrumentation for in-field studies andpotential screening work which will identify specimens which would repay further studies in the laboratory. An attempt is made to give a snapshot of the state-of-the-art evolution since the beginning of the technique (1970s) and to point out potential further development. The book is co-edited by three international experts with many years' experience in the application of Raman spectroscopy to artworks, archaeological artefacts and in the investigation of materials and sites for cultural heritage preservation and each editor has undertaken to write individual chapters and different topics personally. The adopted approach is designed to convey the sort of information which has become available from the adoption of analytical Raman spectroscopy to different problems in the field of cultural heritage preservation through the spectral interrogation of artefacts and how the interpretation of the spectral data can assist museum curators, archaeologists and cultural heritage historians in the preservation and conservation of ancient materials and sites : a particular advantage in this respect is the ability of Raman spectroscopy to determine – generally in a strictly noninvasive procedure - at the laboratory or on-site with mobile instruments, the presence of both organic and inorganic components in a particular specimen together nondestructively without any chemical and mechanical pretreatment being undertaken, which is an essential requirement for rare and valuable samples . An important aside from this work is the means of spectral identification of ongoing biodeterioration and biological colonisation in specimens in storage and the effects of environmental deterioration such as humidity and temperature upon their integrity.