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Altri autori (Persone)	WishartJames F. <1958-> Madhava RaoB. S
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Nota di contenuto	Contents; Foreword; Preface; About the Editors; Contributors; Chapter 1 An Incomplete History of Radiation Chemistry Charles D. Jonah; Chapter 2 An Overview of Solvated Electrons: Recent Advances Mehran Mostafavi and Isabelle Lampre; Chapter 3 The Structure and Dynamics of Solvated Electrons Ilya A. Shkrob; Chapter 4 Instrumentation in Pulse Radiolysis Eberhard Janata; Chapter 5 Ultrafast Pulse Radiolysis Methods Jacqueline Belloni, Robert A. Crowell, Yosuke Katsumura, Mingzhang Lin, Jean-Louis Marignier, Mehran Mostafavi, Yusa Muroya, Akinori Saeki, Seiichi Tagawa, Chapter 6 A History of Pulse-Radiolysis Time-Resolved Microwave Conductivity (PR-TRMC) Studies John M. Warman and Matthijs P. de Haas Chapter 7 Infrared Spectroscopy and Radiation Chemistry Sophie Le Caer, Serge Pin, Jean Philippe Renault, Georges Vigneron and Stanislas Pommeret; Chapter 8 Chemical Processes in Heavy Ion Tracks Gerard Baldacchino and Yosuke Katsumura; Chapter 9 Radiolysis of Supercritical Water Mingzhang Lin, Yusa Muroya, Gerard Baldacchino and Yosuke Katsumura; Chapter 10 Pulse Radiolysis in Supercritical Krypton and Xenon Fluids Richard Holroyd

Chapter 11 Radiation-Induced Processes at Solid-Liquid Interfaces Mats Jonsson Chapter 12 Radiolysis of Water Confined in Nanoporous Materials Raluca Musat, Mohammad Shahdo Alam and Jean Philippe Renault; Chapter 13 Metal Clusters and Nanomaterials: Contribution of Radiation Chemistry Hynd Remita and Samy Remita; Chapter 14 Radiation-Induced Oxidation of Substituted Benzenes: Structure-Reactivity Relationship B. S. M. Rao; Chapter 15 Femtosecond Events in Bimolecular Free Electron Transfer Ortwin Brede and Sergej Naumov; Chapter 16 Chemistry of Sulfur-Centered Radicals Krzysztof Bobrowski Chapter 17 Radiolysis of Metalloproteins Diane E. Cabelli Chapter 18 Mechanisms of Radiation-Induced DNA Damage: Direct Effects David Becker, Amitava Adhikary and Michael D. Sevilla; Chapter 19 Radiation-Induced DNA Damage: Indirect Effects Clemens von Sonntag; Chapter 20 Radiation Chemistry Applied to Antioxidant Research K. Indira Priyadarsini; Index

Sommario/riassunto

This volume is a review of the trends in the field of radiation chemistry research. It covers a broad spectrum of topics, ranging from the historical perspective, instrumentation of accelerators in the nanosecond to femtosecond region, through the use of radiation chemical methods in the study of antioxidants and nanomaterials, radiation-induced DNA damage by ionizing radiation involving both direct and indirect effects, to ultrafast events in free electron transfer, radiation-induced processes at solid-liquid interfaces and the recent work on infrared spectroscopy and radiation chemistry. The book is unique in that it covers a wide spectrum of topics that will be of great interest to beginners as well as experts. Recent data on ultrafast phenomena from the recently established world-class laser-driven accelerators facilities in the US, France and Japan are reviewed.

2. Record Nr. UNINA9910592983303321

Titolo	Analytical Chemistry for the Study of Paintings and the Detection of Forgeries / / edited by Maria Perla Colombini, Ilaria Degano, Austin Nevin
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Collana	Cultural Heritage Science, , 2366-6234
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Soggetti	Cultural property Materials - Analysis Forensic sciences Materials science Cultural Heritage Characterization and Analytical Technique Forensic Science Materials Science
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Part I Approaches to the authentication of works of art -- The Eye versus Chemistry? From 20th to 21st Century Connoisseurship -- Scientific Study, Condition Challenges, and Attribution Questions in Yves Tanguy's Oeuvre -- Analytical Approaches to the analysis of paintings: an overview of methods and materials -- Part II Characterization of paintings by digital techniques -- Visible and Infrared Reflectance Imaging Spectroscopy of Paintings and Works on Paper -- Automated Analysis of Drawings at the Stroke Level for Attribution and Authentication using Artificial Intelligence -- Part III Material Characterization of paintings by instrumental techniques -- Analytical pyrolysis of organic paint materials for authentication and attribution -- Direct and hyphenated mass spectrometry to detect glycerolipids and additives in paint -- Luminescence for the analysis of

paintings; A. Nevin -- Analysis of natural and synthetic organic lakes and pigments by chromatographic and mass spectrometrictechniques -- Raman analysis of inorganic and organic pigments -- Non-invasive and non-destructive examination of artists' pigments, paints and paintings by means of X-ray imaging methods -- Microchemical Imaging of Oil Paint Composition and Degradation: State-of-the-Art and Future Prospects -- Part V Isotopic analysis for authentication -- Dating of artwork by radiocarbonjdas -- Lead Isotope ratios of lead white: from provenance to authentication.-Part V Case studies -- The role of technical study and chemical analysis on questions of attribution and dating of paintings and on easel painting conservation practice: Selected case studies -- Approaches to Current Issues with Art Forgery, Restoration and Conservation: Legal and Scientific Perspectives.

Sommario/riassunto

Forgeries present a daunting problem to art historians, museums, galleries and curators who face challenges in determining the authenticity of paintings. Recent progress in science has led to the development of new methods for investigating works of art, and can provide new insights into the materials found in paintings. The rise in the value of paintings together with the knowledge and skills of forgers highlights the need to develop reliable scientific procedures to identify fakes. Given the complexity of materials in paintings and the convergence of various disciplines, a methodological approach for nvestigations of paintings is based on art historical, curatorial, aesthetic, technical and scientific evaluation. In this book sophisticated digital and analytical techniques are reviewed for the identification of materials (pigments, binders, varnishes, adhesives) and the physical characteristics of paintings such as brushstrokes, craquelure and canvas weaves. This book presents an updated overview of both non-invasive and micro-invasive techniques that enable the material characterization of paintings. The materials constituting a painting are reviewed, as are ways that changes in materials over time can provide insights into chronology and physical history. State-of the art digital metods including multi and hyper-spectral imaging and computational approaches to data treatment will be presented. Analytical techniques developed and optimized to characterize binders, varnishes, and pigments are reviewed, focusing on materials which can provide information on ageing or provenance. Case studies of applications of synchrotron-based methods and the analysis of paintings are given, as are chapters devoted to legal aspects related to authenticity. Chapter 1 is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.