Record Nr. UNINA9910780887403321 Recent trends in radiation chemistry [[electronic resource] /] / editors, **Titolo** James F. Wishart, B.S.M. Rao Singapore, : World Scientific, 2010 Pubbl/distr/stampa **ISBN** 1-282-76131-5 9786612761317 981-4282-09-X Descrizione fisica 1 online resource (636 p.) Altri autori (Persone) WishartJames F. <1958-> Madhava RaoB. S Disciplina 541 541.382 Soggetti Radiation chemistry Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. 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

Krypton and Xenon Fluids Richard Holroyd

Supercritical Water Mingzhang Lin, Yusa Muroya, Gerard Baldacchino and Yosuke Katsumura; Chapter 10 Pulse Radiolysis in Supercritical

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.