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Sommario/riassunto	This volume builds upon the successful book Lanthanide Luminescence published in the Springer Series on Fluorescence in 2011. Since its publication, the field of lanthanide spectroscopy and the areas in which the light emission properties of the f-elements are used have experienced substantial advances. The luminescence properties of lanthanide ions make them unique candidates for a myriad of optical applications. This book highlights and reviews the latest research in areas ranging from luminescence thermometry to imaging, sensing and photonic applications of these fascinating elements. Each chapter provides a comprehensive introduction to a specific area of application of lanthanide luminescence and extensively reviews seminal papers and current research literature. Given its interdisciplinary scope, the book appeals to scientists and advanced students in physics, chemistry and materials science interested in compounds and materials with optical properties.