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Nota di contenuto	Front matter -- FROM THE SERIES EDITOR. PREFACE / Rosso, Jodi J. / Henderson, Grant S. / Neuville, Daniel R. / Downs, Robert T. -- Table of contents -- 1. Modern X-ray Diffraction Methods in Mineralogy and Geosciences / Lavina, Barbara / Dera, Przemyslaw / Downs, Robert T. -- 2. Fundamentals of XAFS / Newville, Matthew -- 3. X-ray Absorption Near-Edge Structure (XANES) Spectroscopy / Henderson, Grant S. / Groot, Frank M.F. de / Moulton, Benjamin J.A. -- 4. Probing of Pressure-Induced Bonding Transitions in Crystalline and Amorphous Earth Materials: Insights from X-ray Raman Scattering at High Pressure / Lee, Sung Keun / Eng, Peter J. / Mao, Ho-kwang -- 5. Luminescence

Spectroscopy / Waychunas, Glenn A. -- 6. Analytical Transmission Electron Microscopy / Brydson, Rik / Brown, Andy / Benning, Liane G. / Livi, Ken -- 7. High Resolution Core- and Valence-Level XPS Studies of the Properties (Structural, Chemical and Bonding) of Silicate Minerals and Glasses / Nesbitt, H.W. / Bancroft, G.M. -- 8. Analysis of Mineral Surfaces by Atomic Force Microscopy / Jupille, Jacques -- 9. Optical Spectroscopy / Rossman, George R. -- 10. Spectroscopy from Space / Clark, Roger N. / Swayze, Gregg A / Carlson, Robert / Grundy, Will / Noll, Keith -- 11. SR-FTIR Microscopy and FTIR Imaging in the Earth Sciences / Ventura, Giancarlo Della / Marcelli, Augusto / Bellatreccia, Fabio -- 12. Carryover of Sampling Errors and Other Problems in Far-Infrared to Far-Ultraviolet Spectra to Associated Applications / Hofmeister, Anne M. -- 13. Advances in Raman Spectroscopy Applied to Earth and Material Sciences / Neuville, Daniel R. / Ligny, Dominique de / Henderson, Grant S. -- 14. Brillouin Scattering and its Application in Geosciences / Speziale, Sergio / Marquardt, Hauke / Duffy, Thomas S. -- 15. NMR Spectroscopy of Inorganic Earth Materials / Stebbins, Jonathan F. / Xue, Xianyu -- 16. Electron Paramagnetic Resonance Spectroscopy: Basic Principles, Experimental Techniques and Applications to Earth and Planetary Sciences / Pan, Yuanming / Nilges, Mark J. -- 17. Theoretical Approaches to Structure and Spectroscopy of Earth Materials / Jahn, Sandro / Kowalski, Piotr M. -- 18. High-pressure Apparatus Integrated with Synchrotron Radiation / Shen, Guoyin / Wang, Yanbin -- 19. In situ High-Temperature Experiments / Neuville, Daniel R. / Hennet, Louis / Florian, Pierre / Ligny, Dominique de

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#### Sommario/riassunto

Spectroscopic Methods in Mineralogy and Material Science covers significant advances in the technological aspects and applications of spectroscopic and microscopic techniques used in the Earth and Materials Sciences. The current volume complements the now classic Volume 18, Spectroscopic Methods in Mineralogy and Geology, which became an essential resource to many scientists and educators for the past two decades. This volume updates techniques covered in Volume 18, and introduces new techniques available for probing the secrets of Earth materials, such as X-ray Raman and Brillouin spectroscopy. Other important topics including Transmission Electron Microscopy (TEM) and Atomic Force Microscopy (AFM) are also covered.

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