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8. High resolution scanning electron microscopy of the nuclear surface in Herpes Simplex Virus 1 infected cells / Peter Wild, Andres Kaech and Miriam S. Lucas -- 9. Scanning electron microscopy of chromosomes: structural and analytical investigations / Elizabeth Schroeder-Reiter and Gerhard Wanner -- 10. A method to visualize the microarchitecture of glycoprotein matrices with scanning electron microscopy / Giuseppe Familiari, Rosemarie Heyn, Luciano Petruzzello and Michela Relucenti -- 11. Scanning electron microscopy of cerebellar intrinsic circuits / Orlando J. Castejon -- 12. Application of in vivo cryotechnique to living animal organs examined by scanning electron microscopy / Shinichi Ohno, Nobuo Terada, Nobuhiko Ohno and Yasuhisa Fujii -- 13. SEM in dental research / Vladimir Dusevich, Jennifer R. Melander and J. David Eick -- 14. SEM, teeth and palaeoanthropology: the secret of ancient human diets / Alejandro Romero and Joaquin De Juan.

Sommario/riassunto

Recent developments in scanning electron microscopy (SEM) have resulted in a wealth of new applications for cell and molecular biology, as well as related biological disciplines. It is now possible to analyze macromolecular complexes within their three-dimensional cellular microenvironment in near native states at high resolution and to identify specific molecules and their structural and molecular interactions. New approaches include cryo-SEM applications and environmental SEM (ESEM), staining techniques and processing applications combining embedding and resin-extraction for imaging with high resolution SEM, and advances in immuno-labeling. New developments include helium ion microscopy, automated block-face imaging combined with serial sectioning inside an SEM chamber, and Focused Ion Beam Milling (FIB) combined with block-face SEM. With chapters written by experts, this guide gives an overview of SEM and sample processing for SEM and highlights several advances in cell and molecular biology that greatly benefited from using conventional, cryo, immuno and high-resolution SEM.
