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Descrizione fisica	1 online resource (xii, 391 pages) : digital, PDF file(s)
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Nota di contenuto	; 1. High-resolution transmission electron microscopy / S. Horiuchi and L. He -- ; 2. Holography in the transmission electron microscope / A. Tonomura -- ; 3. Microanalysis by scanning transmission electron microscopy / L.M. Brown and J. Yuan -- ; 4. Specimen preparation for transmission electron microscopy / J.G. Wen -- ; 5. Low-temperature scanning electron microscopy / R.P. Huebener -- ; 6. Scanning tunneling microscopy / M.E. Hawley -- ; 7. Identification of new superconducting compounds by electron microscopy / G. Van Tendeloo and T. Krekels -- ; 8. Valence band electron energy loss spectroscopy (EELS) of oxide superconductors / Y.Y. Wang and V.P. Dravid.
Sommario/riassunto	This is a clear account of the application of electron-based microscopies to the study of high-Tc superconductors. Written by

leading experts, this compilation provides a comprehensive review of scanning electron microscopy, transmission electron microscopy and scanning transmission electron microscopy, together with details of each technique and its applications. Introductory chapters cover the basics of high-resolution transmission electron microscopy, including a chapter devoted to specimen preparation techniques, and microanalysis by scanning transmission electron microscopy. Ensuing chapters examine identification of superconducting compounds, imaging of superconducting properties by low-temperature scanning electron microscopy, imaging of vortices by electron holography and electronic structure determination by electron energy loss spectroscopy. The use of scanning tunnelling microscopy for exploring surface morphology, growth processes and the mapping of superconducting carrier distributions is discussed. Final chapters consider applications of electron microscopy to the analysis of grain boundaries, thin films and device structures. Detailed references are included.

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