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Nota di contenuto	Particle Optics of Electrons -- Wave Optics of Electrons -- Elements of a Transmission Electron Microscope -- Electron–Specimen Interactions. -- Scattering and Phase Contrast -- Theory of Electron Diffraction -- Electron-Diffraction Modesand Applications . -- Imaging of Crystalline Specimens and Their Defects. -- Elemental Analysis by X-ray and Electron Energy-Loss Spectroscopy. -- Specimen Damage by Electron Irradiation.
Sommario/riassunto	Transmission Electron Microscopy: Physics of Image Formation presents the theory of image and contrast formation, and the analytical modes in transmission electron microscopy. The principles of particle and wave optics of electrons are described. Electron-specimen interactions are discussed for evaluating the theory of scattering and phase contrast. Also discussed are the kinematical and dynamical theories of electron diffraction and their applications for crystal-structure analysis and imaging of lattices and their defects. X-ray microanalysis and electron energy-loss spectroscopy are treated as analytical methods. Specimen damage and contamination by electron irradiation limits the resolution for biological and some inorganic specimens. This fifth edition includes discussion of recent progress, especially in the area of aberration correction and energy filtering; moreover, the topics introduced in the fourth edition have been updated. Transmission Electron Microscopy: Physics of Image Formation is written for scientists and application engineers in fields such as physics, chemistry, mineralogy, materials

science and biology. Researchers, students, and other users of a transmission electron microscope can also benefit from this text.