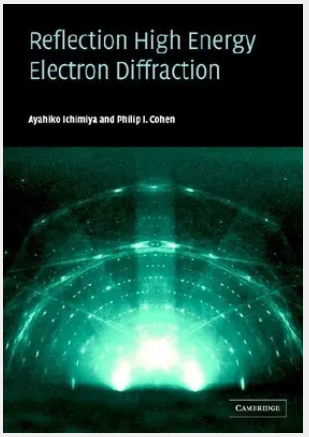
Ichimiya / Cohen

Reflection High-Energy Electron Diffraction

Reflection high-energy electron diffraction (RHEED) is the analytical tool of choice for characterizing thin films during growth by molecular beam epitaxy, since it is very sensitive to surface structure and morphology. This book serves as an introduction to RHEED for beginners and describes detailed experimental and theoretical treatments for experts, explaining how to analyze RHEED patterns. For beginners the principles of electron diffraction are explained and many examples of the interpretation of RHEED patterns are described. The second part of the book contains detailed descriptions of RHEED theory. The third part applies RHEED to the determination of surface structures, gives detailed descriptions of the effects of disorder, and critically reviews the mechanisms contributing to RHEED intensity oscillations. This unified and coherent account will appeal to both graduate students and researchers in the study of molecular beam epitaxial growth.

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