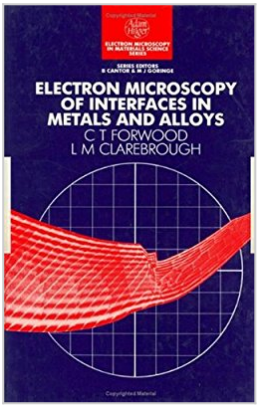

Electron Microscopy of Interfaces in Metals and Alloys (Series in Microscopy in Materials Science)

By C.T Forwood, L.M Clarebrough

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Electron Microscopy of Interfaces in Metals and Alloys examines the structure of interfaces in metals and alloys using transmission electron microscopy. The book presents quantitative methods of analysis and reviews the most significant work on interface structure over the last 20 years. It provides the first book description of the methods used for quantitative identification of Burgers vectors of interfacial dislocations, including the geometric analysis of periodicities in interface structure and the comparison of experimental and theoretical electron micrographs. The book explores low- and high-angle grain boundaries and interphase interfaces between neighboring grains, emphasizing interfacial dislocations and rigid-body displacements to the structure and properties of interfaces. It also analyzes the use of two-beam images and diffraction patterns for analysis and studies n-beam lattice imaging. The book includes numerous worked examples of the analysis of the structure of grain boundaries and interphase interfaces, which are particularly useful to those who need to consider the nature of intercrystalline interfaces.

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Editorial Review

Review
..." extremely well written ... easy to read description of the microscope conditions that best reveal the structure of the grain boundary and the methods used to analyze the images ... excellent ... style of writing makes it easy and enjoyable to read ... An important part ... is the detailed description of examples which will make it an invaluable aid to those starting in the field. For those in the field it provides an excellent account of the methods that have been used by the authors to identify the Burgers vector of interfacioal dislocations ... provides a review of the work that has been done on understanding the properties of grain boundaries ... the authors' considerable contribution to the field." I M Robertson, Microscopy Research and Technique, 4 10 1993 ..." clearly written and abundantly illustrated ..." P W Hawkes, Ultramicroscopy 50 111, 1993 ..." a book one can recommend to anybody working on interface and grain boundary structures. A lot of the techniques mentioned not only hold for alloys but also for semiconductors and ceramics ... The work treated is very impressive, very well presented and perfectly illustrated ... should be on the desk of any materials science electron microscopist working on alloys and dealing with dislocation and grain boudnary problems. Any laboratory carrying out electron microscopy in materials science should have a copy ..." G Van Tendeloo, Advanced Materials, 4 10, 1994. 1992 tremely well written ... easy to read description of the microscope conditions that best reveal the structure of the grain boundary and the methods used to analyze the images ... excellent ... style of writing makes it easy and enjoyable to read ... An important part... is the detailed description of examples which will make it an invaluable aid to those starting in the field. For those in the field it provides an excellent account of the methods that have been used by the authors to identify the Burgers vector of interfacioal dislocations ... provides a review of the work that has been done on understanding the properties of grain boundaries ... the authors' considerable contribution to the field." I M Robertson, Microscopy Research and Technique, 4 10 1993 ..." clearly written and abundantly illustrated ..." P W Hawkes, Ultramicroscopy 50 111, 1993 ..." a book one can recommend to anybody working on interface and grain boundary structures. A lot of the techniques mentioned not only hold for alloys but also for semiconductors and ceramics ... The work treated is very impressive, very well presented and perfectly illustrated ... should be on the desk of any materials science electron microscopist working on alloys and dealing with dislocation and grain boudnary problems. Any laboratory carrying out electron microscopy in materials science should have a copy ..." G Van Tendeloo, Advanced Materials, 4 10, 1994. 1992

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