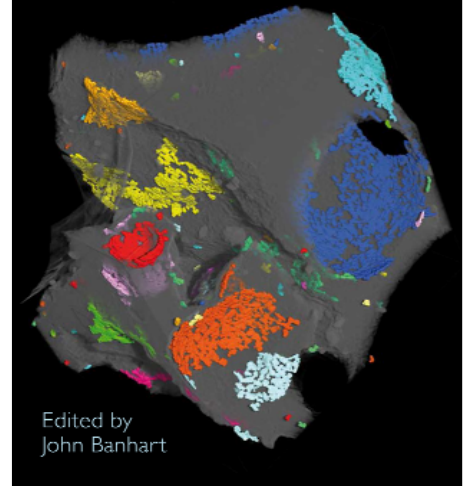


Advanced Tomographic Methods in Materials Research and Engineering

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Advanced Tomographic
Methods in Materials
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- Overview of tomographic methods based on three different types of radiation in one book.
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Tomography provides three-dimensional images of materials or engineering components and an unprecedented insight into their internal structure. This book, written for applied physicists, materials scientists and engineers, discusses recent developments in the field, such as the extension of tomographic methods to materials research and engineering.

Contents

1. Introduction; **2.** Some Mathematical Concepts for Tomographic Reconstruction; **3.** Visualisation, Processing and Analysis of Tomographic Data; **4.** Radiation Sources and Interaction of Radiation with Matter; **5.** Synchrotron X-ray Absorption Tomography; **6.** Phase Contrast and Holographic Tomography; **7.** Tomography using magnifying optics; **8.** Scanning Tomography; **9.** Three-dimensional X-ray Diffraction; **10.** Detectors for Synchrotron Tomography; **11.** Fundamentals of Electron Tomography; **12.** Applications of Electron Tomography; **13.** Neutron Absorption Tomography; **14.** Neutron Phase Contrast and Polarised Neutron Tomography; **15.** Neutron Refraction and Small-Angle Scattering Tomography; **Appendix A:** Facilities for Tomography; **Appendix B:** Examples on CDROM

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