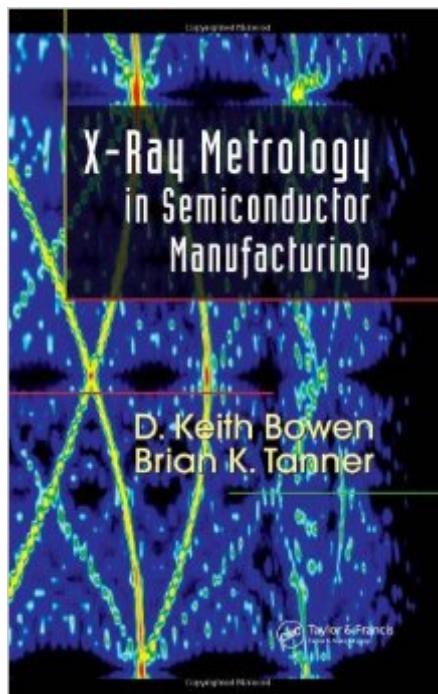


The book was found

# X-Ray Metrology In Semiconductor Manufacturing



## Synopsis

The scales involved in modern semiconductor manufacturing and microelectronics continue to plunge downward. Effective and accurate characterization of materials with thicknesses below a few nanometers can be achieved using x-rays. While many books are available on the theory behind x-ray metrology (XRM), *X-Ray Metrology in Semiconductor Manufacturing* is the first book to focus on the practical aspects of the technology and its application in device fabrication and solving new materials problems. Following a general overview of the field, the first section of the book is organized by application and outlines the techniques that are best suited to each. The next section delves into the techniques and theory behind the applications, such as specular x-ray reflectivity, diffraction imaging, and defect mapping. Finally, the third section provides technological details of each technique, answering questions commonly encountered in practice. The authors supply real examples from the semiconductor and magnetic recording industries as well as more than 150 clearly drawn figures to illustrate the discussion. They also summarize the principles and key information about each method with inset boxes found throughout the text. Written by world leaders in the field, *X-Ray Metrology in Semiconductor Manufacturing* provides real solutions with a focus on accuracy, repeatability, and throughput.

## Book Information

Hardcover: 296 pages

Publisher: CRC Press (January 24, 2006)

Language: English

ISBN-10: 0849339286

ISBN-13: 978-0849339288

Product Dimensions: 6.1 x 0.8 x 9.3 inches

Shipping Weight: 1 pounds (View shipping rates and policies)

Average Customer Review: 4.0 out of 5 starsÂ  See all reviewsÂ  (1 customer review)

Best Sellers Rank: #1,878,696 in Books (See Top 100 in Books) #175 inÂ  Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Sensors #323 inÂ  Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Semiconductors #495 inÂ  Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Microelectronics

## Customer Reviews

I would recommend this book to anyone interested in understanding what types of techniques are

available to semiconductor/materials engineers. It is geared specifically to this industry and to people trying to evaluate what metrology tools they might use. It is a good primer for people who will be managing/running x-ray measurement tools, but ultimately not comprehensive. Pros: Geared specifically to semiconductor engineers. This is important since x-ray crystallography is a broad field, with semiconductors being one of many applications. Finding relevant books can be a challenge. Decent overview of many techniques and how they work conceptually. Cons: Often times there is not enough depth on specific techniques. If you need to do a certain type of analysis or measurement technique you will certainly need other reference materials and guidance. For example, there is little guidance on good alignment procedures for different techniques. Honestly, I don't think that's the point of the book, though. That being said I feel the authors could have provided more "recommended reading" in some parts. disclaimer: my experience with XRD and XRR is limited to high resolution single crystal measurements. I can't really speak to how this book covers metrology of powder, amorphous, and poly semiconductor materials.

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