

# Epitaxial Growth Part I: Principles and Techniques by John Wauchope Matthews - A Comprehensive Guide to Crystal Growth



**Epitaxial Growth Part A** by John Wauchope Matthews

★★★★☆ 4.4 out of 5

Language : English

File size : 45624 KB

Screen Reader : Supported

Print length : 391 pages



Epitaxial growth is a crystal growth technique in which a thin layer of material is deposited on a substrate of a different material. The deposited layer grows in a single crystal orientation with the substrate, creating a heterojunction. Epitaxial growth is used to create a wide variety of electronic and optoelectronic devices, including transistors, lasers, and solar cells.

Epitaxial Growth Part I: Principles and Techniques by John Wauchope Matthews is a comprehensive guide to crystal growth, covering the basic principles and techniques of epitaxial growth. The book is written in a clear and concise style, and is well-illustrated with diagrams and photographs.

The book begins with an to the basic principles of crystal growth, including the thermodynamics and kinetics of crystal growth. The book then

discusses the different techniques used for epitaxial growth, including vapor phase epitaxy, liquid phase epitaxy, and molecular beam epitaxy.

The book also discusses the characterization of epitaxial layers, including the measurement of thickness, crystal structure, and optical properties. The book concludes with a discussion of the applications of epitaxial growth in the fabrication of electronic and optoelectronic devices.

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## **About the Author**

John Wauchope Matthews is a Professor of Materials Science and Engineering at the University of California, Berkeley. He is a leading expert in the field of epitaxial growth, and has published over 300 papers on the subject. He is the author of several other books on crystal growth, including Epitaxial Growth Part II: Applications and Properties and Epitaxial Growth Part III: Heterojunctions and Nanostructures.

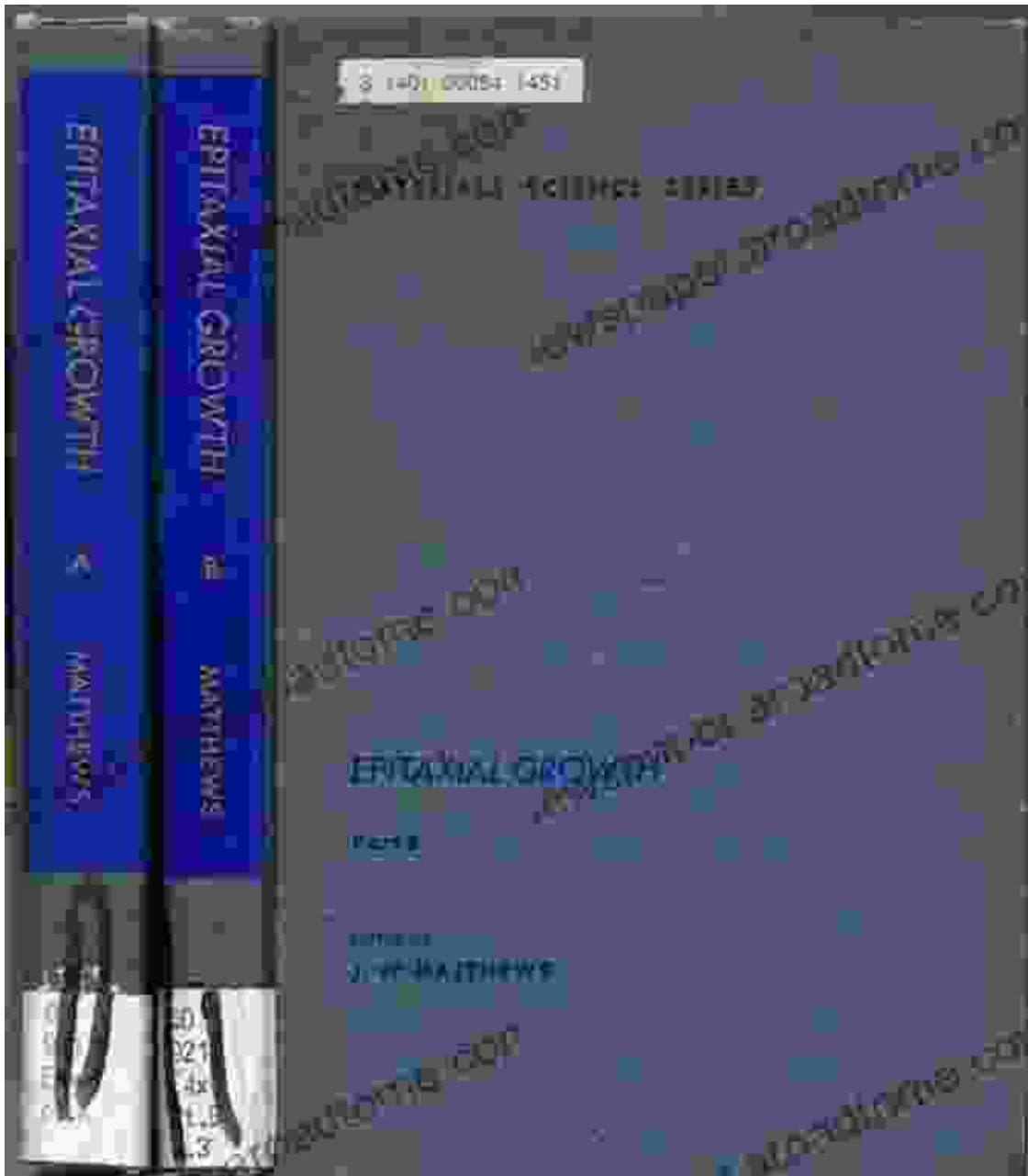
## Reviews

"Epitaxial Growth Part I: Principles and Techniques by John Wauchope Matthews is a comprehensive and up-to-date guide to crystal growth. The book is well-written and well-illustrated, and is a valuable resource for anyone interested in the field of epitaxial growth." - *Journal of Crystal Growth*

"Epitaxial Growth Part I: Principles and Techniques by John Wauchope Matthews is a must-have for anyone working in the field of epitaxial growth. The book is a comprehensive and up-to-date guide to the subject, and is written in a clear and concise style." - *Materials Science and Engineering*

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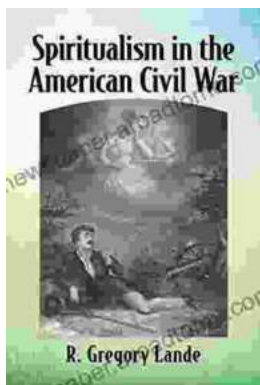
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