



# Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications

*Tsunenobu Kimoto, James A. Cooper*

Download now

[Click here](#) if your download doesn't start automatically

# Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications

Tsunenobu Kimoto, James A. Cooper

## Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications

Tsunenobu Kimoto, James A. Cooper

*A comprehensive introduction and up-to-date reference to SiC power semiconductor devices covering topics from material properties to applications*

Based on a number of breakthroughs in SiC material science and fabrication technology in the 1980s and 1990s, the first SiC Schottky barrier diodes (SBDs) were released as commercial products in 2001. The SiC SBD market has grown significantly since that time, and SBDs are now used in a variety of power systems, particularly switch-mode power supplies and motor controls. SiC power MOSFETs entered commercial production in 2011, providing rugged, high-efficiency switches for high-frequency power systems. In this wide-ranging book, the authors draw on their considerable experience to present both an introduction to SiC materials, devices, and applications and an in-depth reference for scientists and engineers working in this fast-moving field. *Fundamentals of Silicon Carbide Technology* covers basic properties of SiC materials, processing technology, theory and analysis of practical devices, and an overview of the most important systems applications. Specifically included are:

- A complete discussion of SiC material properties, bulk crystal growth, epitaxial growth, device fabrication technology, and characterization techniques.
- Device physics and operating equations for Schottky diodes, pin diodes, JBS/MPS diodes, JFETs, MOSFETs, BJTs, IGBTs, and thyristors.
- A survey of power electronics applications, including switch-mode power supplies, motor drives, power converters for electric vehicles, and converters for renewable energy sources.
- Coverage of special applications, including microwave devices, high-temperature electronics, and rugged sensors.
- Fully illustrated throughout, the text is written by recognized experts with over 45 years of combined experience in SiC research and development.

This book is intended for graduate students and researchers in crystal growth, material science, and semiconductor device technology. The book is also useful for design engineers, application engineers, and product managers in areas such as power supplies, converter and inverter design, electric vehicle technology, high-temperature electronics, sensors, and smart grid technology.

 [Download Fundamentals of Silicon Carbide Technology: Growth ...pdf](#)

 [Read Online Fundamentals of Silicon Carbide Technology: Grow ...pdf](#)

## **Download and Read Free Online Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications Tsunenobu Kimoto, James A. Cooper**

---

### **From reader reviews:**

#### **Stephanie Cromwell:**

In this 21st century, people become competitive in every way. By being competitive today, people have to do something to make these people survive, being in the middle of typically the crowded place and notice through surrounding. One thing that occasionally many people have underestimated this for a while is reading. Yeah, by reading a guide your ability to survive improve then having chance to stay than other is high. In your case who want to start reading the book, we give you this kind of Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications book as nice and daily reading reserve. Why, because this book is usually more than just a book.

#### **Mark Fetter:**

Now a day people who Living in the era where everything reachable by talk with the internet and the resources within it can be true or not call for people to be aware of each info they get. How many people to be smart in obtaining any information nowadays? Of course the answer then is reading a book. Reading through a book can help people out of this uncertainty Information especially this Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications book because book offers you rich information and knowledge. Of course the knowledge in this book hundred per-cent guarantees there is no doubt in it everybody knows.

#### **Faye Berg:**

Reading can called imagination hangout, why? Because while you are reading a book specially book entitled Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications your head will drift away trough every dimension, wandering in each aspect that maybe mysterious for but surely will end up your mind friends. Imaging just about every word written in a book then become one application form conclusion and explanation that maybe you never get prior to. The Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications giving you yet another experience more than blown away your thoughts but also giving you useful information for your better life with this era. So now let us present to you the relaxing pattern this is your body and mind will be pleased when you are finished studying it, like winning a game. Do you want to try this extraordinary shelling out spare time activity?

#### **Virginia Laird:**

Are you kind of occupied person, only have 10 or perhaps 15 minute in your moment to upgrading your mind proficiency or thinking skill actually analytical thinking? Then you are receiving problem with the book in comparison with can satisfy your limited time to read it because pretty much everything time you only find e-book that need more time to be go through. Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications can be your answer because it can be read by you who

have those short spare time problems.

**Download and Read Online Fundamentals of Silicon Carbide  
Technology: Growth, Characterization, Devices and Applications  
Tsunenobu Kimoto, James A. Cooper #BYNXJR5S1GT**

## **Read Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications by Tsunenobu Kimoto, James A. Cooper for online ebook**

Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications by Tsunenobu Kimoto, James A. Cooper Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications by Tsunenobu Kimoto, James A. Cooper books to read online.

### **Online Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications by Tsunenobu Kimoto, James A. Cooper ebook PDF download**

**Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications by Tsunenobu Kimoto, James A. Cooper Doc**

**Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications by Tsunenobu Kimoto, James A. Cooper Mobipocket**

**Fundamentals of Silicon Carbide Technology: Growth, Characterization, Devices and Applications by Tsunenobu Kimoto, James A. Cooper EPub**