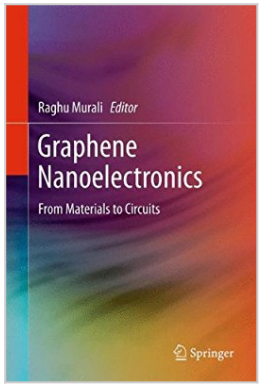

Graphene Nanoelectronics: From Materials to Circuits

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Graphene has emerged as a potential candidate to replace traditional CMOS for a number of electronic applications; this book presents the latest advances in graphene nanoelectronics and the potential benefits of using graphene in a wide variety of electronic applications. The book also provides details on various methods to grow graphene, including epitaxial, CVD, and chemical methods. This book serves as a spring-board for anyone trying to start working on graphene. The book is also suitable to experts who wish to update themselves with the latest findings in the field.

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Editorial Review

From the Back Cover

The rapid growth of the electronics industry can be attributed in large part to the scalability of the transistor. Continued scaling of transistor dimensions has enabled increased functionality with each new generation of integrated circuits. Historically, this scaling has followed Moore’s Law – which became a self-fulfilling prophecy – wherein the number of transistors on a chip is doubled every 18-24 months. However, a number of bottlenecks arise beyond c. 2020 that will impede this progress and this will lead to high heat dissipation in ICs, large power consumption, and low chip yield. Thus, beyond c. 2020, the electronics industry needs novel technologies that enable continued increases in chip functionality. Considering that the transition from research to manufacturing can take 10 years or more for novel technologies, there is considerable effort world-wide to identify next-generation enablers for electronics. Graphene is one of the most promising materials to replace Silicon, and this book discusses a number of aspects of graphene for nanoelectronics applications. With the growing interest in this material, this book serves as a spring-board for anyone trying to start working on this topic. The book contains in-depth discussions of graphene properties, transistors, novel state variables, interconnects, growth, and device fabrication.

- Describes the transport properties of graphene;
- Includes a detailed discussion of alternative state variables such as spin and excitons;
- Provides insight into graphene transistors and interconnects for both analog and digital electronics;
- Presents the latest advances in graphene growth by various techniques - epitaxial growth, chemical vapor deposition and chemical methods.

Users Review

From reader reviews:

Velma Stuart:

This book untitled Graphene Nanoelectronics: From Materials to Circuits to be one of several books this best seller in this year, honestly, that is because when you read this guide you can get a lot of benefit upon it. You will easily to buy this book in the book retailer or you can order it by means of online. The publisher on this book sells the e-book too. It makes you quicker to read this book, because you can read this book in your Smart phone. So there is no reason for you to past this book from your list.

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Samuel Brooks:

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