



In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses)

Dai-Ming Tang

Download now

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

In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses)

Dai-Ming Tang

In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) Dai-Ming Tang

Using an in situ transmission electron microscopy (TEM) approach to investigate the growth mechanism of carbon nanotubes (CNTs) as well as the fabrication and properties of CNT-clamped metal atomic chains (MACs) is the focus of the research summarized in this thesis. The application of an in situ TEM approach in the above-mentioned research provides not only real-time observation but also monitored machining and structural evolution at the atomic level. In this thesis, the author introduces a CNT tubular nano furnace that can be operated under TEM for investigation of the CNT nucleation mechanism. By studying the nucleation process of CNTs in the presence of various catalysts, including iron-based metallic catalysts and silicon oxide-based non-metallic catalysts, the physical states of the catalysts as well as the nucleation and growth process of CNTs are revealed. Based on the understanding of the nucleation mechanism, the author proposes a hetero-epitaxial growth strategy of CNTs from boron nitride, which provides a new route for the controllable growth of CNTs. In addition, the author presents an electron beam-assisted nanomachining technique and the fabrication of a CNT-clamped MAC prototype device based on this technique. The formation process of CNT-clamped Fe atomic chains (ACs) can be monitored with atomic resolution. The demonstrated quantized conductance and uninfluenced half-metallic properties of Fe ACs indicate that CNTs can be promising nanoscale electrodes or interconnectors for the linking and assembly of nano and subnano structures.

 [Download In Situ Transmission Electron Microscopy Studies o ...pdf](#)

 [Read Online In Situ Transmission Electron Microscopy Studies ...pdf](#)

Download and Read Free Online In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) Dai-Ming Tang

From reader reviews:

Brian Street:

The guide with title In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) has lot of information that you can find out it. You can get a lot of help after read this book. This specific book exist new know-how the information that exist in this e-book represented the condition of the world right now. That is important to yo7u to learn how the improvement of the world. That book will bring you throughout new era of the glowbal growth. You can read the e-book on your own smart phone, so you can read this anywhere you want.

Richard Haley:

This In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) is great e-book for you because the content which is full of information for you who also always deal with world and possess to make decision every minute. This book reveal it details accurately using great arrange word or we can state no rambling sentences inside it. So if you are read it hurriedly you can have whole facts in it. Doesn't mean it only will give you straight forward sentences but hard core information with lovely delivering sentences. Having In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) in your hand like having the world in your arm, info in it is not ridiculous 1. We can say that no reserve that offer you world with ten or fifteen moment right but this publication already do that. So , this can be good reading book. Hello Mr. and Mrs. active do you still doubt this?

Colton Fierros:

You can spend your free time to learn this book this guide. This In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) is simple to develop you can read it in the recreation area, in the beach, train and soon. If you did not have got much space to bring typically the printed book, you can buy the actual e-book. It is make you better to read it. You can save typically the book in your smart phone. Thus there are a lot of benefits that you will get when you buy this book.

Robert Rascoe:

A lot of guide has printed but it takes a different approach. You can get it by web on social media. You can choose the most beneficial book for you, science, comic, novel, or whatever simply by searching from it. It is referred to as of book In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses). You can include your

knowledge by it. Without making the printed book, it could possibly add your knowledge and make anyone happier to read. It is most significant that, you must aware about guide. It can bring you from one destination for a other place.

Download and Read Online In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) Dai-Ming Tang #53JS2XUVCLE

Read In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) by Dai-Ming Tang for online ebook

In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) by Dai-Ming Tang 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 In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) by Dai-Ming Tang books to read online.

Online In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) by Dai-Ming Tang ebook PDF download

In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) by Dai-Ming Tang Doc

In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) by Dai-Ming Tang Mobipocket

In Situ Transmission Electron Microscopy Studies of Carbon Nanotube Nucleation Mechanism and Carbon Nanotube-Clamped Metal Atomic Chains (Springer Theses) by Dai-Ming Tang EPub