
Subject: Proposal Review Request: Thermal Transport in Carbon-Based Nanomaterials

From: Holt, Simon (ELS-OXF) (s.holt.1@elsevier.com)

To: absuriani@yahoo.com;

Date: Monday, October 5, 2015 6:51 PM

Dear Prof. Suriani,

Please allow me to introduce myself as Acquisitions Editor for Micro & Nano Technology books at the publishers, Elsevier.

I have received a proposal for a new book proposal provisionally titled *Thermal Transport in Carbon-Based Nanomaterials* from Gang Zhang (Institute of High Performance Computing, A*STAR, Singapore). This book would be published both in print and online.

As part of our publishing decision-making process, we are asking experts in the field for their opinion on the proposal. Since I know you conduct research in this area, I wondered if you would be able to take a look at this? I attach a short proposal to this email, along with the Editor's CV.

Please let me know whether you are able to undertake this review?

As a token of thanks for your help, I would be able to offer you a consideration of \$100 for a detailed review (i.e. a few sentences in response to each question) returned in three weeks (i.e. by 26 October, 2015). If you are not able to carry out this review, would you be able to recommend someone who you think might be able to help?

Many thanks for considering this; I look forward to hearing from you soon.

Kind regards,

Simon

Simon Holt
Acquisitions Editor | Micro & Nano Technologies | **ELSEVIER**

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Attachments

- CV-ZhangGang.doc (192.50KB)
- Proposal review form.doc (39.00KB)
- Zhang Proposal.doc (48.50KB)



ELSEVIER PROPOSAL REVIEW QUESTIONNAIRE

Title: Thermal Transport in Carbon-Based Nanomaterials

Editor: Gang Zhang, Institute of High Performance Computing, A*STAR, Singapore

Thank you for agreeing to review this book proposal.

Elsevier is committed to providing the very best engineering and science books. To ensure this quality in bringing new titles to market, we rely on the expert feedback of those in the field. Please read through the proposal and answer the following questions in as much detail as you can.

ABOUT YOU

1. Name and Affiliation:
2. Relevant professional / academic background
3. Have you written, or contributed to, any books on a related subject area? (list title and publisher):

AUDIENCE

4. Who do you view as the main readership group(s) for the proposed work?
(Please be as specific as possible regarding academic field / industry sector, level, professional roles, etc.)
5. Please provide some insight into the key knowledge and information needs this audience faces (in relation to the field covered by this proposal). Would this book help to meet these needs?

COMPETITION

6. Which book/s do you currently rate highly, in this field? (Please give full title, author and publisher, and a brief comment on the key strength and/or weakness of each title):
7. What, if anything, differentiates the proposed book from the competition?
8. What price would you consider appropriate for this book?

TITLE AND EDITOR

9. Is the proposed title appropriate? (If not, please suggest an alternative)
10. Is the author of this proposal known to you, personally or professionally?



PROPOSAL REVIEW QUESTIONNAIRE

11. Do you consider the author to be appropriate to write/edit a book on the topic proposed?

SUBJECT AND APPROACH

12. Looking at the Table of Contents, are there

a) any topics that should be added or expanded?

b) any topics where the coverage should be reduced, or removed altogether?

13. What do you think are the main strengths and weaknesses of this proposal?

14. Although not a course textbook, would this title be useful in a teaching context, as a specialist reference or graduate text? (If so, please provide details.)

THE BOTTOM LINE

15. Would you personally purchase the proposed book? (Why or why not?)

16. Would you recommend a colleague or library to purchase the proposed book? (Why or why not?)

17. Do you have an idea for publication which you would like to discuss with an Elsevier editor? If so, please provide brief details.

Thank you for taking the time to complete this review. Your comments are greatly appreciated.

Micro & Nano Technology Books

Guide to Submitting your Proposal



The information you provide will help us to evaluate your proposal. Please provide as much detail as possible.

1. **Title (and subtitle) of your proposed book:** **Thermal Transport in Carbon-Based Nanomaterials**

2. **Author(s) or Editor(s) with Affiliation(s):** **Gang Zhang, Institute of High Performance Computing, A*STAR, Singapore**

3. **Please indicate whether your proposal is for an authored or contributed (edited) book:** **This is for an edited book.**

4. **Description:**

i. **One-Line Description:** *Please provide a one-line summary of your proposed book.* The book describes thermal properties in the low-dimensional carbon materials, like carbon nanotubes, graphene, carbon nanotube composite, graphene composite, nano diamond, carbon foam, and other carbon-based materials.

ii. **Detailed Description:** *Please provide a 200-word description of your proposed book.*

In the past two decades, rapid developments in synthesis and processing of carbon-based nanoscale materials have created a great demand for understanding of thermal transport. Carbon nano materials include: one-dimensional (1D) structures, like nanotubes; two-dimensional (2D) crystal lattice with only one-atom-thick planar sheets, like graphenes; composites based on carbon nanotube or graphene, and diamond nanowires and thin films. Thermal properties in nano materials differ significantly from those in bulk materials because the characteristic length scales associated with the heat carriers, phonons, are comparable to the characteristic length. Carbon nano materials with high thermal conductivity can be applied in heat dissipation. It looks set to make a significant impact on human life and, with numerous commercial developments emerging, will become a major academic topic over the coming years.

This book sets the subject into context by first of all describing the thermal properties of various carbon nano materials and then looking at the applications in thermal management and renewable energy. This authoritative and comprehensive book will be of interest to both existing scientific community in this field, as well as for new people who wish to enter it. All the invited contributors are world recognized experts in their separated areas.

5. **Audience:** *For whom is this book primarily intended and at what level? Is it for academics, or professionals, or both? How would you ensure the content meets the needs of the readership?*

The aim of this book is to provide an introduction for both theorists and experimentalists to the thermal properties of carbon nano materials and then looking

at the applications in thermal management and renewable energy. The book should also be useful for graduate-level students who want to explore this new field of research. With content relevant to both academic and commercial viewpoints, the book will interest researchers and postgraduates as well as consultants and industrial engineers.

6. Benefits to audience

With reference to the target audience(s) listed above, please give details of:

- *The information needs and daily challenges of the audience relating to the subject that your book will address.*

The high thermal conductivity of carbon nano materials makes them as promising candidates for thermal management. However, in the practical application, there are many factors which can reduce the thermal conductivity, thus limit the application of carbon nano materials. This book provides the basic thermal transport theory, the different effects on thermal conductivity and other important details for better controlling thermal conductivity of carbon nano materials, thus enhance the efficiency in thermal management.

- *The features and content in your book that will be most valuable to the reader (please list 3)*

(1) Basic information about the thermal transport theory; (ii) Most important and commonly adopted computational and experimental methods to study thermal properties; (iii) Information about growth of carbon nano materials, their thermal properties, strategies to control thermal properties and applications.

7. Table of Contents

Please include (target) contributor name/s and affiliations (if available), chapter titles, and main sub-headings if possible at this stage.

Chapter 1. Thermal transport theory. Gang Zhang and Yong-Wei Zhang (IHPC)

Chapter 2. Nanotube and derived materials. Shoushan Fan, (Tsinghua University)

Chapter 3. Graphene and derived materials, Zhongfan Liu (Peking University)

Chapter 4. Growth mechanics of carbon nano materials, Boris Yakobson, (Rice University)

Chapter 5. Thermal Properties of carbon nanotubes. David Tomanek, (Michigan State University)

Chapter 6. Thermal properties of graphene, Alexander A. Balandin, University of California at Riverside

Chapter 7. Thermal property of polymer nanocomposites containing Carbon Nanotubes, Dimitrios V. Papavassiliou, (University of Oklahoma)

Chapter 8. Carbon Fibers: Fabrication and thermal properties, Fuhe Wang (IMRE)

Chapter 9. Low thermal conductivity in Carbon foams. Anyuan Cao (Peking University)

Chapter 10. Large-scaled Reduced Graphene Oxide, Chong Min Koo (KIST)

Chapter 11. Thermal conductivity of configurable carbon-based architecture, Yuantong Gu, (Queensland University of Technology)

Chapter 12. Nanoscale thermal measurement platform, Kedar Hippalgaonkar (IMRE)

8. Length

Please indicate how many printed pages you estimate the book will be? We can fit roughly 350 words per printed page. How many illustrations (estimated) will there be? 350 pages with 80 illustrations.

9. Competition:

i. What is the major competing work(s) to the proposed Work?

There are two books in this field. One is the very famous book: Physical Properties of Carbon Nanotubes, R. Saito (World Scientific, 1998). This book describes the fundamental physical properties of carbon nanotube. However, this book was published 17 years ago. In the past decade, there are many new phenomenon observed, for example, graphene was discovered in 2005. Naturally, that book did not include these new works.

The other one is: Graphene-based Energy Devices, edited by A. Rashid bin Mohd Yusoff, (Wiley 2015). This is a new book about graphene based devices. The emphasis of that book is device, not the intrinsic property of carbon materials. Furthermore, some important carbon-based nanomaterials, such as nano diamond, are not involved in that product.

ii. How does the proposed Work differ from this?

This is the complementary book to address the hot topic of applications of carbon-based nano materials for thermal management. It might be very helpful both for the existing scientific community, as well as for new people who wish to enter it, to summarize the present state of the art about this rapidly developing area.

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