

CALL FOR CONTRIBUTIONS

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NEW 5-VOLUME BOOK SERIES: Nanochemistry and Technology in Science and Engineering

Editor:

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Apple Academic Press is pleased to announce that Dr. Anthony Granville will be editing a new 5-volume book series on **Nanochemistry and Technology in Science and Engineering**. Dr. Granville invites contributions.

Each volume will begin with a brief discussion of the fundamentals of nanochemistry and technology as related to the subject matter for the specific volume. This will then tie directly into the research submissions for each of the subject volumes:

- biomedical science and engineering
- optoelectronics and sensor applications
- inorganic compounds and hybrid materials
- graphene oxide, carbon nanotubes, and nanodiamonds
- surface modifications and interactions

These volumes will also suggest areas for future research avenues and directions in each field, bringing together the fundamentals of science and the applications of engineering to the field. The book series hopes to both elucidate the area of nanochemistry and technology as well as consolidate the research into focus areas, being of interest to educators and researchers alike. This series will aim to amalgamate chemistry and engineering together to give an equal importance to the science and the applications of the technology and how the two are interlinked—form and function dictating each other. Furthermore, by highlighting recent research into each of the delegated areas, the series can showcase researchers and their work, as well as be a springboard into subseries for each area if the interest level is significant.

TENTATIVE CONTENTS

Volume 1: Biomedical Applications

- I. What is nanochemistry and technology
 - a. Size importance and definitions
 - b. The chemistry of nano
 - i. Surface chemistry
 - ii. Interfacial interactions and modifications
 - c. Toxicity and issues with use compared to micro and macro scales
- II. Engineering and applying nano
 - a. Drug delivery systems and requirements
 - b. Gene Therapy delivery
 - c. Theranostics – combining therapeutics in diagnostic devices
 - d. Antibacterial materials
 - e. Interfacial chemistry – nanocoatings to control biological interactions

Volume 2: Optoelectronics and Sensor Applications

- I. Applying nanochemistry and technology to the field
 - a. Size implications compared to bulk
 - b. The chemistry of nano
 - i. Surface chemistry
 - ii. Interfacial interactions and modifications
 - iii. The shape of things to come
- II. Sensor technology
- III. Magnetoelastic materials and alloys
- IV. Applications to quantum computing

Volume 3: Inorganic and Hybrid Materials

- I. Applying nano to metallic materials
 - a. Benefits of reduced size to bulk
 - i. Surface chemistry
 - ii. Interfacial interactions and modifications
 - iii. The shape of things to come
 - b. Toxicity and issues with use compared to micro and macro scales
- II. Nanomaterials for advanced catalysis systems
 - a. CO₂ capture and scrubbing
 - b. Biodiesel and fuel generation
 - c. Recycling chemistry
- III. Materials for fuel cell and hydrogen storage applications
- IV. Quantum dots and their applications

Volume 4: Graphene Oxide, Carbon Nanotubes, and Nanodiamonds

- I. Benefits of nano carbon
 - a. Size implications compared to bulk
 - b. Surface chemistry and interfacial interactions
 - c. The shape of things to come
- II. Graphene and graphene oxide
 - a. Surfactant capabilities
 - b. Electronics
- III. Carbon nanotubes
 - a. Transparent materials
 - b. Electronics
 - c. Water purification
- IV. Nanodiamonds

Volume 5: Surface Modifications and Interactions

- I. Applying nanochemistry to surfaces
 - a. Altering surface chemistry with thin films
 - b. Interfacial interactions and modifications
- II. Polymer brush chemistry and nanosurface coatings
 - a. Antifouling coatings
 - b. Protein adhering coatings
 - c. Water repellency and adherence
- III. Surfactants and lubricants to modify nanointerfaces
- IV. Nanostructures and patterned surfaces
- V. Implications for thermodynamics and physics: differences from the nano and macro world

Due dates for submission of proposed contributions:

- Volume 1 - draft completion and review/approval Dec 2016
Volume 2 - draft completion and review/approval Jun 2017
Volume 3 - draft completion and review/approval Dec 2017
Volume 4 - draft completion and review/approval Jun 2018
Volume 5 - draft completion and review/approval Dec 2018



ABOUT THE EDITOR

Dr. Anthony Granville is currently a Principal Consultant at TDK Research Solutions in Sydney, Australia. He was previously affiliated with the Centre for Advanced Macromolecular Design (CAMD) at the University of New South Wales and Mitsubishi Chemical America. He is a member of the Royal Australian Chemical Institute (RACI) and the secretary of the RACI Polymer Group NSW division. He has over 12 years of experience in the field of polymer chemistry and nanotechnology. He has authored over 35 journal articles and book chapters, being cited nearly 1000 times in this timeframe.

Dr. Granville has been an invited speaker at several international and national conferences as well as journal editorial board member, reviewer, and organizing committee member for several organizations. He has been the course coordinator and lecturer for multiple courses at the University of New South Wales dealing with polymer and environmental chemistry, thermodynamics and chemical kinetics, and nanotechnology.

Please contact Dr. Anthony Granville for additional information at agranville999@gmail.com