

Link to Publisher:

[Advances in Nanotechnology. Volume 27 – Nova Science Publishers \(novapublishers.com\)](https://www.novapublishers.com)

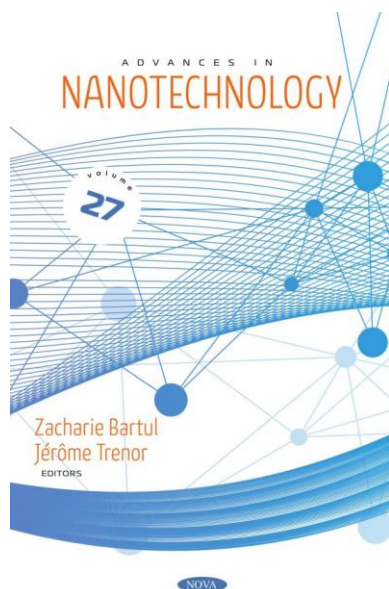
Advances in Nanotechnology. Volume 27

\$250.00

Zacharie Bartul and Jérôme Trenor (Editors)

Series: **Advances in Nanotechnology**

BISAC: TEC027000



This volume includes five chapters that detail recent advancements in nanotechnology. Chapter One presents some of the potential applications of nanotechnology in the food industry. Chapter Two provides a systematized approach of the main synthesis and characterization methods of silver nanoparticles, their main biological activities, and their most common daily applications. Chapter Three reviews the use of nanoparticles in the pharmaceutical industry. Chapter Four describes the application of graphene in solar cells, capacitors, batteries, and more. Chapter Five explores the potential of hydrogen peroxide in detecting diseases. Chapter Six deals with the use of nanosilver-labeled polymer glycoconjugates for specific lectins sensing. Chapter Seven explores some nanodosimetric results on DNA damage using the Monte Carlo method. Chapter Eight reviews recent reports on clay-based adsorbent for the purification of wastewater contaminated with toxic dyes and heavy metals. Lastly, Chapter Nine studies an absolute stability of a nanomechatronics system with an electroelastic actuator.

Binding

Hardcover

Publication Date: September 1, 2022

Status: AV

Pages: 209

Table of Contents

Table of Contents

Preface

Chapter 1. The Use of Nanotechnology for Food Applications

Selda Çelik¹, Vasiliki Gkorogia¹ and Raquel Guiné²

¹Department of Food Industry, Polytechnic Institute of Viseu, Viseu, Portugal

²CERNAS Research Centre, Polytechnic Institute of Viseu, Viseu, Portugal

Chapter 2. Silver Nanoparticles: An Approach to their Synthesis, Characterization and Biological Activities

A. Sousa¹, D. Ribeiro^{1,2}, E. Fernandes¹ and M. Freitas¹

¹Laboratory of Applied Chemistry, Department of Chemical Sciences, Faculty of Pharmacy, University of Porto, Portugal

²Faculty of Agrarian Sciences and Environment, University of the Azores, 9700-042 Angra do Heroísmo, Açores, Portugal

Chapter 3. Nanobodies in the Pharmaceutical Industry: Possible Trends

Gilles Ferry¹, Eric Chabrol² and Jean A. Boutin³

¹Institut de Recherches Servier, Croissy-sur-Seine, France

²MImAbs SAS, Marseille, France

³University of Normandy, Laboratory of Neuroendocrine, Endocrine and Germinal Differentiation and Communication, Rouen, France

Chapter 4. Graphene: A Prominent Nanomaterial for Energy Application

R. Kumar¹, G. Gautam^{2*}, N. Yadav³, S. Sharma⁴ and M. Kumar⁵

¹Department of Physics and Astrophysics, University of Delhi, Delhi, India

²Department of Metallurgical and Materials Engineering, IIT Roorkee, Roorkee, Uttarakhand, India

³Department of Chemistry, IIT Roorkee, Roorkee, Uttarakhand, India

⁴Department of Chemistry, Model Public Education College,
Chandausi, Uttar Pradesh, India

⁵Department of Physics, Hindu College Moradabad, Moradabad, Uttar Pradesh, India

Chapter 5. Hydrogen Peroxide: A Noble Detection Approach with Binary Doped Nanocomposite Materials

Waheed A. Adeosun¹, Abdullah M. Asiri¹, Md. Rezaur Rahman², Mohamman Asaduzzaman Chowdhury³, and Mohammed M. Rahman¹

¹Centre of Excellence for Advanced Materials Research (CEAMR),
King Abdulaziz University, Saudi Arabia

²Faculty of Engineering, Universiti Malaysia Sarawak, Jalan Datuk Mohammad Musa, 94300, Kota Samarahan,
Sarawak, Malaysia

³Department of Mechanical Engineering, Dhaka University of Engineering and Technology (DUET), Gazipur,
Bangladesh

Chapter 6. Nanosilver-Labeled Polymer Glycoconjugates for Specific Lectins Sensing

N. A. Samoilova, PhD, M. A. Krayukhina, PhD, O. V. Vyshivannaya, PhD, and I. V. Blagodatskikh, PhD

A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, Russia

Chapter 7. Gold Nanoparticle Dosimetry in MR-Guided Radiotherapy and Proton Therapy Using Monte Carlo Simulation

James C. L. Chow

Radiation Medicine Program, Princess Margaret Cancer Centre, University Health Network, Toronto, Canada and
Department of Radiation Oncology, University of Toronto, Toronto, Canada

Chapter 8. Nanoclay Based Materials for Wastewater Treatment

Sabarish Radoor¹, Jasila Karayil², Sarada Karangadan³, Aswathy Jayakumar¹, Jyotishkumar Parameswaranpillai⁴
and Suchart Siengchin^{1,5}

¹Materials and Production Engineering, The Sirindhorn International Thai-German Graduate School of
Engineering (TGGGS), King Mongkut's University of Technology North Bangkok, Bangkok, Thailand

²Government Women's Polytechnic College, Calicut, Kerala, India

³Department of Chemistry, Government Arts and Science College Meenchanda, Kozhikode, Kerala, India

⁴School of Biosciences, Mar Athanasios College for Advanced Studies Tiruvalla (MACFAST), Pathanamthitta,
Kerala, India

⁵Institute of Plant and Wood Chemistry, Technische Universität Dresden, Tharandt, Germany

Chapter 9. An Absolute Stability of Nanomechatronics System with Electroelastic Actuator

S. M. Afonin

National Research University of Electronic Technology, Moscow Institute of Electronic Technology MIET, Moscow,
Russia

Index