

Nanomaterials and Nanoarchitectures

A Complex Review of Current Hot Topics and their Applications

edited by

M. Bardosova

Tyndall National Institute UCC, Cork, Ireland

and

T. Wagner

Faculty of Chemical Technology, University of Pardubice, Pardubice, Czech Republic



Published in Cooperation with NATO Emerging Security Challenges Division

Contents

1	Colloidal Photonic Crystal Films: Fabrication and Tunable Structural Color and Applications	1
	Hiroshi Fudouzi	
2	Plasmonics and Ultrasensitive Detection	21
	Ricardo F. Aroca	
3	Functional Nanomaterials Prepared by Nanoarchitectonics-Based Supramolecular Assembly	45
	Katsuhiko Ariga, Yusuke Yonamine, and Jonathan P. Hill	
4	A Brief History of Nanoscience and Foresight in Nanotechnology	63
	Štefan Luby, Martina Lubyová, Peter Šiffalovič, Matej Jergel, and Eva Majková	
5	Halloysite Clay Nanotube Composites with Sustained Release of Chemicals	87
	Joshua Tully, Rawil Fakhrullin, and Yuri Lvov	
6	Colloidal Photonic Crystal Architectures for Advanced Light Management Applications	119
	Martyn E. Pemble and Maria Bardosova	
7	Crystalline and Amorphous Chalcogenides, High-Tech Materials with Structural Disorder and Many Important Applications	151
	M. Frumar, T. Wagner, K. Shimakawa, and B. Frumarova	
8	Plasmonic Gas and Chemical Sensing	239
	Andreas Tittl, Harald Giessen, and Na Liu	

9	Planar Hybrid Plasmonic-Photonic Crystals	273
	Sergei G. Romanov	
10	Fundamentals and Applications of Organised Molecular Films	301
	Osvaldo N. Oliveira Jr., Felipe J. Pavinatto, and Débora T. Balogh	