

Special Issue

PHOTONIC AND PHOTOCHROMIC MATERIALS IN MATERIAL SCIENCE, NANOTECHNOLOGY AND NANO-BIOSCIENCES**Dr. Shah M. Reduwan Billah¹****AIM AND SCOPE**

This theme will cover a number of areas of research, development and applications of photochromic and photonic materials. For examples, (a) studies on the conventional and high-tech applications of photochromic and photonic materials in modern lifestyles, (b) studies on synthesis, modelling and methods used to achieve these goals, (c) basic sciences involved with these processes. Photonic and photochromic materials deal with different aspects of photochemistry, photobiology and material sciences and have been successful to draw active current research interests for their proven applications relevant to everyday daily life. Continuous research in this area also contributes to develop new products with numerous upcoming novel applications. For photochromic materials, the reversible colour change phenomenon provides an important transformation process in comparison to other photo-induced reactions. Thermal or photo-controlled reversibility of some of these materials are also unique tools which can be used to have an effective control on the physical properties of the products based on photochromic materials using external stimulus (such as, sunlight, UV light). Some of the important applications of photochromic materials include data storage, authentication, security printing, camouflage, brand protections, optoelectronics, photo-catalysis and biological applications (such as, light control on enzymatic activity, photo-control drug delivery, photo-switchable biomolecules and proteins). Similarly, photonic materials have many applications in information technology and telecommunications, health care and the life sciences (such as, bio-photonics), optical sensing, lighting, energy and displays, optoelectronics, security and defence as well of a wide variety of other areas of our lifestyle. So, the topic related to this theme includes (but are not limited to): (i) applications of photochromic and photonic materials in materials sciences, biological sciences, nanotechnology, nano-biotechnology, or related areas, (ii) polymer and thin film based on photonic or photochromic materials, (iii) computational studies on different photochromic or photonic materials, (iv) supra-molecular and ion-responsive photochromism and their applications, (v) fluorescence, phosphorescence, time-resolved spectroscopy and ultrafast photochromic systems, (vi) photo-switchable biomolecules peptides and proteins and their applications, (vii) photonic materials for healthcare and life sciences, (viii) photonic materials in security and defence, (ix) applications of photochromic and photonic materials in materials sciences, biological sciences, nanotechnology, nano-biotechnology, or related areas, (x) polymer and thin film based on photonic or photochromic materials, (xi) computational studies on different photochromic or photonic materials, (xii) supra-molecular and ion-responsive photochromism and their applications, (xiii) fluorescence, phosphorescence, time-resolved spectroscopy and ultrafast photochromic systems, (xiv) photo-switchable biomolecules peptides and proteins and their applications, (xv) photonic materials for healthcare and life sciences, (xvi) photonic materials in security and defence, (xvii) photonic materials in lighting, energy and display applications.

Keywords: *photochromic, photonic, high-tech and conventional applications, material science, nanotechnology, nano-biotechnology, synthesis of photochromic materials, synthesis of photonic materials, modelling, nanobiosciences.*

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SUBTOPICS

1	Different aspects of Photochromism and photochromic materials	4	Applications of photochromic and photonic materials in molecular devices and systems
2	Photochromic and photonic materials in material sciences and in life sciences	5	Synthesis and characterization of photochromic and photonic materials
3	Modelling and synthesis of Photonic and photochromic materials	6	Any other related areas of conventional and high-technology applications of photochromic and photonic materials, such as in nanotechnology and nanobiosciences.

SCHEDULE

Manuscript submission deadline	May 31, 2014
Peer Review Due	August 31, 2014
Revision Due	September 30, 2014
Notification of acceptance by the Guest Editor	October 11, 2014
Final manuscripts due	October 31, 2014
Publication Date	November 30, 2014

EXTENDED DEADLINE!

Publication Date	March, 2015
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