

Special Issue

ENVIRONMENTALLY STIMULI-RESPONSIVE MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY, MATERIAL AND BIOLOGICAL SCIENCES**Dr. Shah M. Reduwan Billah^{1,*}****AIM AND SCOPE**

After the successful production of the First Special Issue on 'Photonic and Photochromic Materials in Material Science, Nanotechnology and Nano-Biosciences' (published online in June 2015, web address: <http://nanobioletters.com/all-issues/2015-2/issue-2>) we are targeting to publish another issue on 'Environmentally stimuli-responsive materials and their applications in nanotechnology, material and biological sciences'. This theme will cover a number of areas of research, development and applications of a wide range of environmentally stimuli-responsive materials. For examples, (a) studies on the conventional and high-tech applications of environmentally stimuli-responsive materials in modern lifestyles, (b) studies on synthesis, modelling and methods used to achieve these goals, (c) basic sciences involved with these processes. Different types of stimuli-responsive materials deal with various aspects of polymer chemistry, nanotechnology, photochemistry, photobiology and material sciences and have been successful to draw active current research interests for their proven applications relevant to everyday life. Continuous research in this area also contributes to develop new products with numerous upcoming novel applications. For example, the reversible photochromic colour change phenomena of photochromic materials provide an important transformation process compared 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, other types of stimuli-responsive 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 environmental stimuli-responsive materials in nanotechnology, materials sciences, biological sciences, nano-biotechnology, or related areas, (ii) polymer and thin film based on stimuli-responsive materials, (iii) computational studies on stimuli-responsive materials, (iv) supra-molecular and ion-responsive photochromism and their applications, (v) fluorescence, phosphorescence, time-resolved spectroscopy and ultrafast photochromic systems,

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(vi) photo-switchable biomolecules peptides and proteins and their applications, (vii) stimuli-responsive 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 or other stimuli-responsive materials (xi) computational studies on different photochromic or photonic materials or other stimuli-responsive 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: *environmental stimuli-responsive materials, photochromic, thermochromics, ionochromic, electrochromic, magnetochromic, piezoelectric, piezochromic, photonic, bioactive materials, high-tech and conventional applications, material science, nanotechnology, nano-biotechnology, synthesis of environmental stimuli-responsive materials, synthesis of photochromic materials, synthesis of photonic materials, modelling, nanobiosciences.*

SUBTOPICS

1	Different aspects of environmental stimuli-responsive materials	4	Applications of photochromic and photonic materials in molecular devices and systems
2	Environmental stimuli-responsive materials in material sciences and in life sciences	5	Synthesis and characterization of photochromic and photonic materials
3	Modelling and synthesis of environmental stimuli-responsive 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	August 30, 2015
Peer Review Due	October 31, 2015
Revision Due	November 30, 2015
Notification of acceptance by the Guest Editor	December 15, 2015
Final manuscripts due	December 31, 2015
Publication Date	January 31, 2016