

Special Issue on

Bioengineering Materials for Environment Protection in a Changing Climate

CALL FOR PAPERS

Climate change is one of the biggest problems of our times. Especially in the last fifty years, the scientific community attributes global climate change to the anthropogenic emissions of greenhouse gases for the atmosphere which cause the global warming. Warmer temperatures alter the hydrological regime determining changes in precipitation levels and patterns, or extreme weather events. On one hand, expected increase of frequency and severity of climate-related natural catastrophes and the current risks of disasters of hydrogeological origin pose a serious threat to buildings, infrastructure, and physical assets located in vulnerable locations. On the other hand, the decreasing of water resources determines severe problems to both society and ecosystems; a peculiar picture of climate change emerges over the Mediterranean regions, which are characterized by higher temperatures, dry summers, and heavy rains.

In this context, it is particularly important to focus attention on environmental technology and related procedures and materials. Environmental engineering is the branch of engineering which focuses on procedures and technical solutions to protect the environment and to improve controlling measures for environmental hazards. Bioengineering allows the application of engineering design and technology by using living systems. Thus, bioengineering materials and combined techniques are needed to reduce the human impact on the environment. In fact, biomaterials used in combination with traditional hydraulic or geotechnical engineering measures can improve mitigation considerably reducing the overall cost and worst effects of the anthropogenic actions.

Exploring how the use of bioengineering materials in environmental hydraulic engineering can help us to combat the worst effects of climate change is an important issue. As an example, plants and plant materials can be used for erosion control and slope protection to reduce risk events; vegetation used for green roofs and walls is also an important bioengineering measure to protect buildings and for adsorbing rainwater, containing air pollution and greenhouse gas emissions, and extending roof life. But many aspects, such as vegetation durability and species selection, should be still investigated.

This journal publishes articles in all areas of materials science and engineering including green and renewable materials.

The aim of this special issue is to collect new ideas on innovative materials and advanced technologies in the area of bioengineering applied to environmental hydraulic engineering. Outstanding work and recent findings on bioengineering materials and related inputs and new ideas on the aforementioned features are welcome. Furthermore, we invite investigators to contribute original research articles as well as review articles that seek to address scientific processes and the use of natural materials to help to preserve both the quality and the sustainability of our natural environment.

Potential topics include but are not limited to the following:

- ▶ Vegetation as biomaterial in environmental engineering
- ▶ Materials in green design and construction
- ▶ Materials for riverbank stabilization: ultimate techniques in bioengineering
- ▶ Materials for remediation risk assessment
- ▶ Sustainable engineering and green materials

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/amse/bteem/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor

Donatella Termini, University of Palermo, Palermo, Italy
donatella.termini@unipa.it

Guest Editors

Hazi M. Azamathulla, University of the West Indies, at St. Augustine campus, Trinidad and Tobago
mdazmath@gmail.com

Jose R. B. Cantalice, Rural Federal University of Pernambuco, Recife, Brazil
cantalice21@hotmail.com

Submission Deadline

Friday, 28 December 2018

Publication Date

May 2019