

Special Issue on

Towards Sustainability: Photochemical and Electrochemical Processes Applied for Environmental Protection

CALL FOR PAPERS

For decades, unsustainable trends have been observed in the interdependent economic, environmental, and social systems. As a consequence the environment has been affected and modified, compromising humans needs satisfaction. Unfortunately this is putting at risk the life quality and expectations of future generations. As a response and in order to slow down and revert the undesirable damage to environment, the World Commission on Environment and Development (WCED) has recommended, among other actions, reorienting technology and meeting essential needs for energy, water, and sanitation. In this sense, an important part of the scientific community has embraced the idea of sustainability and has started to dedicate special efforts to aid sustainable development. Meeting the challenges of sustainability requires a great number of insightful and innovative technological approaches; in this way, novel chemical engineering should focus on the design of processes that use renewable material feedstocks and energy sources, minimizing the generation of hazardous waste.

Among the available physicochemical technologies, the photo- and electroprocesses represent the unique advantage of using energy as a supply; this interacts with matter and does not leave residuals; thus, the environmental negative impact is minimized when practiced.

In this context, the application and improvement of photo- and electrodriven process have become of paramount importance either to remediate the already exerted environmental damage or to reduce this damage through new processes and synthesis routes (i.e., artificial photosynthesis, electrosynthesis, and selective photooxidation).

Therefore, the Editors of the International Journal of Photoenergy are pleased to launch this special issue dedicated to photo- and electrochemical processes that are aiming, in one way or another, at environmental care and thus aiding sustainability.

The main objective of this special issue is to present and discuss the state-of-the-art of photo- and electrochemistry processes, based on scientific and technological developments that are expected to innovate the existent processes for environmental care. High-quality scientific articles, original research manuscripts as well as review articles focused on the certain topics are welcome.

Potential topics include but are not limited to the following:

- ▶ Photocatalysis applied to complete or selective oxidation and reduction reactions
- ▶ Removal of pollutants by photochemical or electrochemical processes
- ▶ Photo-Fenton, electro-Fenton, photo-Fenton-like, and electro-Fenton-like processes
- ▶ Electroperoxidation
- ▶ Electrocoagulation
- ▶ Process integration and intensification
- ▶ Toxicity assessment of photo- and electrodriven processes
- ▶ Photoassisted preparation of materials for environmental protection
- ▶ Materials preparation for photochemical and electrochemical processes
- ▶ Design and assessment of reactors to conduct photo- or electroprocesses
- ▶ Modeling and simulation of photo- or electroprocesses
- ▶ Removal of emerging pollutants, hazardous materials, and metals by photo- and electroprocesses
- ▶ Artificial photosynthesis
- ▶ Electrosynthesis

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

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

Lead Guest Editor

Reyna Natividad, Universidad Autónoma del Estado de México, Toluca, Mexico
reynanr@gmail.com

Guest Editors

Carlos B. Díaz, Universidad Autónoma del Estado de México, Toluca, Mexico
cebarrerad@uaemex.mx

Carlos A. Martínez-Huitle, Universidade Federal do Rio Grande do Norte, Natal, Brazil
mhuitle@hotmail.com

Juan M. R. Rodriguez, Universidad Nacional de Ingeniería, Lima, Peru
jrodriguez@uni.edu.pe

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