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EDITORIAL

Efficient and sustainable environmental management as a means of addressing current pollution issues

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In recent years, new challenges in environmental management have arisen; old threats have not been eradicated while emerging hazards and risks have already established their presence. The ongoing quest for a cleaner and safer environment supporting society and economy can only be achieved through a visionary strategy focused on sustainable development, resource efficiency, universal transparency, trust, and partnership. Despite local improvements in sanitation and decontamination as well as implementation of stricter and broader environmental policies, societies must deal with climate change and harsher climatic conditions, water scarcity, global pollution and emergence of new pollutants to name a few. Since traditional tools of investigation and exploration are probably now insufficient in addressing these problems, new collaboration and partnerships are needed; the present compilation of works aspires to present aspects of environmental research and to propose a novel "way-forward."

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The special issue of Environmental Science and Pollution Research you hold in your hands is a collection of 12 papers initially presented at the 6th International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE 2017) and SECOTOX Conference. The conference was held on 25th to 30th of June, 2017, in Thessaloniki, Greece (http://cemepe6.civil.auth.gr/). The conference was organized by the Division of Hydraulics and Environmental Engineering of the Department of Civil Engineering of Aristotle University of Thessaloniki, the Sector of Industrial Management and Operations Research of the School of Mechanical Engineering of National Technical University of Athens, the Department of Civil Engineering of University of Thessaly and the Food Technology Department of Technological Educational Institute of Thessaloniki. The conference was the 6th from a successful series of CEMEPE/SECOTOX conferences where scientists from all around the world exchange ideas and knowledge on all aspects of environmental management and share experience and expertise towards common and viable solutions.

The manuscripts included in the present Special Issue are based on the ones initially presented at the CEMEPE2017/SECOTOX conference; however, they have been extended (by at least 50%) and they have undergone the rigorous peer-review process of the journal until acceptance. The topics that the papers included in the current issue focus on are briefly presented below:

True to the ecotoxicological origins of SECOTOX, the research of Kachenton et al. focuses on the toxicity of titanium nanoparticles to the model organism *Artemia salina*, revealing interesting histopathological findings. Furthermore, the review of Ziegler gives valuable insights on the strengths and limitations of using duckweeds for determination of ecotoxicological hazard and risk for freshwater environments. Polluted aquatic reservoirs were also central in the research of Dong et al., who investigated metal profiles in a highly

industrialised coastline in Taiwan revealing that the harbour sediments posed a very high ecological risk, while coastal wastewaters in Eastern Mediterranean Sea were the principal research field in Tugrul et al. study; the authors examined the applicability of current tools for determination of trophic status and reached important conclusions on their classification which is pivotal for their subsequent management. Water management plans for rivers and lakes were critically assessed by Skoulikaris and Zafirakou, using four transboundary river basins in Southern Europe as the case study, highlighting the need for shared and reliable data between neighbouring countries. Environmental pollution may be addressed through the design and application of modern waste treatment facilities; as such the odour nuisance from a municipal solid waste landfill in Italy was effectively forecasted by Di Nardo et al., simplifying the need for precautionary measures. Furthermore, the sustainability of other large infrastructures, such as water treatment facilities in Turkey, were evaluated in detail in the study of Saad et al., utilizing the life-cycle assessment approach. Organic waste and the amelioration of its management were investigated in the study of Loizia et al., which showed encouraging results through co-digesting of food waste and other wastes in existing anaerobic treatment plants. However, very little in application of circular economy schemes can be achieved without active stakeholder participation; the study of Lazaridou et al. eloquently quantifies this requisite, through investigation of Greek farmers' willingness to undertake the environmental costs arising from their activity. Finally, in the research field of new technologies for efficient environmental protection, a greener solvent was successfully tested for the preparation of polymeric membranes in the study of Marino et al., while the improvement of a carbon black composite material used for toluene decontamination was efficiently created through the modifications described in Dong et al. Last but not least, a novel herbal biocide from *Tinospora crispa* was tested against mosquito larvae, in the study of Jiraungkoorskul proving that solutions in persisting problems may be closer than we think and may indeed be found in the natural environment.

Dr. Dino Musmarra is a full professor of Chemical Plants at the Department of Engineering of the Polytechnic and Basic Science School of the University of Campania "Luigi Vanvitelli," Aversa, Italy. He graduated cum laude in Chemical Engineering in 1984 from Università di Napoli "Federico II" (Naples, Italy) and received his PhD in Chemical Engineering in 1989 from University of Naples "Federico II" (Naples, Italy). His research activity includes various fields, among which the most recent are protection of groundwaters by permeable adsorptive barriers; wastewater treatment by AOP, innovative renewable fuel technologies, microalgal biomass growth, and biotransformation for valuable by-product production and extraction. During his 30-year research career, he has served as principal investigator in 16 projects, funded with more than €4M. He has published more than 150 papers in international peer-reviewed journals and more than 200 papers in international conferences. His papers have been cited more than 2700 times in journal publications (H-index = 34).

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