EDITORIAL

Special Issue "Emerging approaches in environmental toxicology and pollutant analysis"

Sang Don Kim · Tae-Yong Jeong

It is great pleasure that we present this special issue "Emerging Approaches in Environmental Toxicology and Pollutant Analysis." This collection of papers brings recent research applying innovative methodologies that provide valuable insights into understanding and addressing the challenges posed by environmental toxicology and pollutant analysis.

The objective of this special issue was to investigate applications of emerging approaches in environmental toxicology and pollutant analysis, with a focus on recent advancements in environmental omics and non-targeted mass analysis. The growing concern over the impact of pollutants on the environment and human health has led to the development of alternative or complementary methods to traditional bioassays. In this context, the implementation of new technologies and methodologies has become instrumental in providing a comprehensive understanding of the fate and response of micropollutants. The selected papers encompass a wide range of topics, from lab-scale bioassays to regional field studies. These studies represent a diverse array of research that delves into the intricate relationships between pollutant exposures and biological responses and ecosystem health, filling the significant knowledge gaps and revealing both the methodological challenges and opportunities in the applied studies.

Yoo et al. and Karvandri et al. applied biomolecular methodologies to reveal adverse outcomes from environmental organisms under pollutants exposures. The studies respectively suggest utilities of the approaches for mixture toxicity study and in-situ study. Lee et al. and Park et al. utilized mass spectrometry-based measurement for understanding the fate or biotransformation of organic pollutants. The studies proved the targeted pollutants and metabolites are detected at concentrations having potential ecotoxicological concerns from surface waters and wastewater treatment system. Some studies investigated pollutant exposures and the imposed ecological risk in the targeted region, at the same time. Proshad et al. measured heavy metals from sediments and assessed posed ecological risk. Yang et al. quantified impact of pollutants on nematode community in soil environment. Wang et al. analyzed source of polyaromatic hydrocarbons with field measurements and risk assessment. We extend our heartfelt gratitude to all the authors who contributed their exceptional research to this special issue. Their dedication to advancing the field of environmental toxicology and pollutant analysis is evident in the high-quality research they have presented.

As editors, we believe that the articles featured in this special issue will contribute significantly to the

S. D. Kim
Gwangju Institute of Science and Technology, Gwangju, South Korea

T.-Y. Jeong (✉)
Hankuk University of Foreign Studies, Yong-in, South Korea
e-mail: tyj@hufs.ac.kr

accumulation of valuable knowledge and meaningful discussions in the realms of environmental toxicology and pollutant analysis. We hope that this collection inspires further exploration and fosters collaborative efforts to address the pressing challenges posed by application of the new study approaches to environmental toxicology and pollutant analysis. We sincerely thank the reviewers for their diligent evaluation and invaluable contributions in ensuring the scientific rigor and excellence of the published works.

Sincerely,
Dr. Sang Don Kim and Dr. Tae-Yong Jeong.