



Editorial

Pharmaceutical and personal care products (PPCPs) treatment and sensing by 2D carbon nanomaterials; challenges and perspectives



Pharmaceutical and personal care products (PPCPs) are two major classes of water and soil pollutants that can increase the risk of cancer. The release of pharmaceutical and PPCPs pollutants into water poses many risks to human health and is harmful to aquatic life. Attention to water quality, the identification of water pollutants, and monitoring of their concentrations in water and soil resources is required to limit impacts human and ecosystem health.

Researchers are, therefore, searching for ways to eliminate them from sources of water and soil. Owing to excellent chemical stability, high surface area, and electrical sensitivity, 2D carbon nanomaterials are preferably applied. The key benefits of 2D carbon-based nanomaterials for application as adsorbents or catalysts for water treatment are high surface area and simple adjustment. The high electrical conductivity of graphene, on the other hand, has provided a strong capacity to use them in the manufacture of sensors for pharmaceutical and food contaminants.

This special issue, stressing the above problems, accepted 111 research and review papers on topics such as new analytical strategies amplified with 2D carbon nanomaterials for sensing pharmaceutical and food pollutants in water and soils sources, application of soft computing tools to model the best condition in sensing and managing pharmaceutical and food pollutants by 2D carbon nanomaterials, removal strategies for improving soils and water sources by 2D carbon nanomaterials, and advanced oxidation processes for removal of pharmaceutical and food pollutants using 2D carbon nanomaterials. Papers with good quality included "Advances in preparation, mechanism and applications of various carbon materials in environmental applications: A review" (Baraneedharan et al., 2022); "Relationship between graphene and pedosphere: A scientometric analysis" (Jin et al., 2022), "A novel platform based on CoMn₂O₄-rGO/1-ethyl-3-methylimidazolium chloride modified carbon paste electrode for voltammetric detection of pethidine in the presence morphine and olanzapine" (Shahinfard et al., 2022); "A bibliometric analysis of graphene in acetaminophen detection: Current status, development, and future directions" (Xiang et al., 2022) and "New highly efficient 2D/1D HAp/g-C₃N₄ photocatalyst thin film insight into crystal orientation and C-vacancy effects" (Zargazi et al., 2022) were published in this special issue.

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Hassan Karimi-Maleh*

School of Resources and Environment, University of Electronic Science and Technology of China, P.O. Box 611731, Xiyuan Ave, Chengdu, PR China
Department of Chemical Engineering and Energy, Quchan University of Technology, Quchan, 9477177870, Iran

Yasin Orooji

College of Geography and Environmental Sciences, Zhejiang Normal University, Jinhua, 321004, PR China

Mehmet Lutfi Yola

Hasan Kalyoncu University, Faculty of Health Sciences, Department of Nutrition and Dietetics, Gaziantep, Turkey

* Corresponding author. School of Resources and Environment, University of Electronic Science and Technology of China, P.O. Box 611731, Xiyuan Ave, Chengdu, PR China.
E-mail address: hassan@uestc.edu.cn (H. Karimi-Maleh).