

Special Issue

Decoding Plastic Behavior in the Environment through Analytical Characterization: Current Advances and Perspectives

Message from the Guest Editors

This Special Issue aims to showcase the latest analytical advances in X-ray Photoelectron Spectroscopy (XPS), Fourier-transform infrared spectroscopy (FTIR), Raman spectroscopy, Scanning Electron Microscopy with Energy-Dispersive X-ray analysis (SEM-EDX), and Pyrolysis–Gas Chromatography–Mass Spectrometry (Py-GC-MS) employed to (i) elucidate surface chemical modifications during plastic aging, (ii) compare spectroscopic and imaging methodologies for the qualitative and quantitative assessment of the formation and pollutant loading of MNPs, (iii) explore the ecological consequences from molecular to community scales, and (iv) propose sustainable approaches to the monitoring and removal of microplastics from the environment. Contributions that integrate chemical, physical, and ecological perspectives on MNPs' interaction with the natural surroundings will enrich the existing literature by providing new insights into the monitoring, risk assessment, and mitigation of plastic pollution.

Guest Editors

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