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Preface

Advances in science and technology have introduced many chemicals that have become an essential part of every aspect of daily life. But, unfortunately, on account of the ignorance of their potential health hazard or environmental impact at the beginning, a great deal of disasters happened. Moreover, as countries undergo modernization, fossil fuel combustions for energy supply emit more unwanted toxics, pesticides make up regional pollutions or even pollute groundwater, and industries discharge more chemical wastes that also eventually harm human health and the environment. In cope with the rapid sustainable development required for the national economy, one facet of environmental protections, in the sense of risk assessment and control of chemical toxics, should be of prime concerns.

In order to exchange the results of current studies on the relevant topics, e.g. the analysis, distribution, residues, environmental chemical or biochemical behavior and ecotoxicology of toxic organics, the Committee of Environmental Sciences under the Chinese Academy of Sciences (CAS) had organized a symposium on "Environmental Behavior and Ecotoxicology of Organic Pollutants" May 21–25, 1990, Beijing. More than 70 papers were presented by colleagues from 15 institutes under CAS. In this special issue, from them 16 papers, taking as representative compounds two new pesticides developed in China [1-(2-chlorobenzoyl)-3-(4-chlorophenyl) urea or CCU and Dimehypo] and energy-related environmental mutagens and carcinogens polycyclic aromatic hydrocarbons PAHs and substituted PAHs under a project jointly supported by the National Council of Sciences and Technologies and CAS have been collected. They are presented with the collaborative efforts of the Research Center for Eco-Environmental Sciences, Institute of Soil Sciences, Institute of Entomology (Shanghai) and The State Key Laboratory of Freshwater Ecology and Biotechnology, Institute of Hydrobiology (Wuhan) under CAS.

The first 10 papers of this issue are concentrated on the studies on environmental behaviors of CCU in terrestrial and aquatic systems, including distribution, residue, hydrolysis, photoreaction, metabolism and degradation by microorganism, modelling etc. which are briefly summarized in a review paper with the purposes of correlating these behaviors with the physicochemical parameters and doing some predictions. Suggestions are also proposed for the application and further study of the possible effect of degradation products. Dimehypo is another type of pesticide with high solubility in water, and both its environmental behaviors and possible contamination of groundwater are discussed. The latter part of this issue scatters more over the studies on environmental carcinogens, also presenting some methodologies to be improved or unified for other uses.

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