

**Relationship between carbonaceous materials and persistent organic pollutants
(POPs) in the sediments of the Danshui River and adjacent areas, Taiwan**

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Abstract

Persistent organic pollutants, POPs (e.g., polychlorinated biphenyls and pesticides) can seriously and deleteriously affect environmental quality and human health. To better understand the role of carbonaceous materials in the transport and distributions of POPs in terrestrial and near-shore environments, concentrations of PCBs, pesticides and carbonaceous materials (including total organic carbon, black carbon and total carbohydrates), were determined in surface sediments of the Danshui River and nearby coastal areas, Taiwan. Preliminary results showed that total concentrations of PCBs in the sediments ranged from not detectable to 83.9 ng/g, dry weight, with the maximum value detected near the discharge point of the marine outfall from the Pali Sewage Treatment Plant. These results suggest that the sewage treatment plant did not effectively remove PCBs as they still exist in the estuarine and near-shore environment of the Danshui River. Organic carbon and black carbon concentrations correlated well with those of total PCBs and pesticides in the sediments, suggesting that both organic carbon and black carbon significantly affect the distribution of trace organic pollutants through either post-depositional adsorption, or by co-transport of similar source materials. The detailed data will be presented at the meeting.