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Editorial

Advances and Challenges in Environmental Catalysis and Air Pollution Control

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Air quality is closely related to human health, and the control of air pollution through environmental catalysis has garnered increasing attention. This Special Issue features one review article and ten research papers, each addressing critical aspects of environmental catalysis and air pollution control. The review article highlights the application and future potential of stable isotope techniques in tracing the sources of atmospheric NOx and nitrate. Among the research contributions, three papers focus on the catalytic removal of volatile organic compounds (VOCs), including formaldehyde, toluene, and 1,2-dichloroethane. Two papers explore the catalytic oxidation of NO and passive NOx adsorption (PNA), while three others investigate CO oxidation, soot oxidation, and SO_2 adsorption. Additionally, the simultaneous removal of CO and toluene, as well as NOx and VOCs, is reported in detail.

Beyond traditional catalytic methods, this issue also delves into innovative approaches such as the integration of catalysis with plasma technology, and the combination of catalysis with ozone (O_3). These studies collectively address a wide range of catalysts and catalytic techniques, offering insights into their design, efficiency, and application in air pollution control.

This Special Issue aims to illuminate recent advancements and emerging challenges in the field of environmental catalysis and air pollution control. We hope that the findings presented here will inspire the development of more active, selective, and durable environmental catalysts. Furthermore, we anticipate that the integration of catalysis with other physical methods will significantly enhance the efficiency of air pollution control, paving the way for a cleaner and healthier environment.

Conflicts of Interest: The authors declare no conflicts of interest.

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