

Special Issue

Atmospheric Chemistry of Halogenated Volatile Organic Compounds (VOCs) and Related Biofuel Uses

Message from the Guest Editors

The Special Issue “Atmospheric Chemistry of Halogenated Volatile Organic Compounds (VOCs) and Related Biofuel Uses” brings together recent research on the role, sources, and atmospheric fate of these VOCs in the context of the energy transition. Halogenated VOCs, both naturally occurring and anthropogenic, are involved in photochemical processes that affect air quality and the atmospheric radiative balance, including the formation of tropospheric ozone and the destruction of stratospheric ozone. The expanding use of biofuels introduces new VOC emission profiles, which may include oxygenated and halogenated compounds derived from additives, incomplete combustion processes, or interactions with contacting materials. This issue addresses the analytical characterization of emissions, kinetics, tropospheric chemical mechanisms, structure activity relationship (SARs), modeling of their reactivity and transport, assessment of climate and health impacts, and mitigation strategies. Taken together, the articles highlight the need for an integrated understanding of the atmospheric chemistry of these emerging pollutants to guide sustainable energy and environmental policies.

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About the Journal

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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