Special Issue

Heterogeneous Processes of Mineral Particles with Atmospheric Trace Gases

Message from the Guest Editors

Atmospheric aerosols of mineralogical origin, i.e., desert dust, volcanic dust and volcanic ash, are among the most abundant particles in the atmosphere. The scope of this Special Issue is broad and welcomes lab, field and modeling studies related to the impact of mineral dust, volcanic dust or volcanic ash particles on the chemistry of the atmosphere, the air-quality and climate. In particular, this Special Issue welcomes comprehensive research studies or review papers related to:

- The uptake/reaction of (i) radical species, (ii) volatile trace gases and (iii) semi/low volatile species (e.g., SOA) on the surface of dusts/ash particles;
- The photoenhanced or photocatalytic degradation of trace gases on the surface of dust/ash particles and proxies;
- The hygroscopic properties and ice nucleation activity of dust/ash particles and proxies;
- Dust events and their impact evaluation on the atmospheric budget of trace gases and air quality;
- The impact of volcanic ash on the atmospheric budget of trace gases and air quality;
- The impact of inorganic/organic ageing on the hygroscopic and optical properties of mineral dust/ash particles (highly recommended).

Guest Editors

Dr. Manolis N. Romanias

IMT Lille Douai, Univ. Lille, SAGE, 59000 Lille, France

Dr. Qingxin Ma

Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

Dr. Vassileios C. Papadimitriou

Laboratory of Photochemistry and Kinetics, Department of Chemistry, University of Crete, University Campus, Heraklion, Crete, Greece

Deadline for manuscript submissions

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Minerals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
minerals@mdpi.com

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About the Journal

Message from the Editor-in-Chief

Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

Editor-in-Chief

Prof. Dr. Leonid Dubrovinsky
Bayerisches Geoinstitut, University Bayreuth, D-95440 Bayreuth, Germany

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.2 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).

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