

Description of “Interfaces Against Pollution” (IAP) special issue in *Applied Geochemistry*

The scope of this special IAP issue to be published in *Applied Geochemistry* follows the established tradition of the IAP conference series (www.iapconferences.org) in providing a forum for researchers working on the development of **a mechanistic understanding of the behaviour and fate of pollutants in environmental and engineered systems**. The next IAP conference will take place in Antwerpen (Belgium) on 18-21 September 2022 and will follow IAP2021 held in Wuhan. The focus of this special issue is on interfacial processes of environmental relevance and more specifically on the importance of (bio)colloids and (bio)interfaces on pollutant ecodynamics, both from fundamental and solution-oriented perspectives. Contributions that pay particular attention to the combination of chemical and biological perspectives will be highly welcome. Pollutants of interest encompass metal species, organic compounds, as well as engineered nanoparticles or nanoplastics. The scope includes work at the nano-, meso- and macro-scopic scales, from transient processes to equilibrium. Applied research relevant for e.g. environmental protection and remediation of polluted sites, is also welcome. Submitted contributions are expected to address at least one of the following topics from an experimental and/or modelling perspective:

- Fundamental studies on (bio)colloids and (bio)interfaces, including the nature of colloidal interactions, the stability of dispersions and their reactivity towards pollutants of various nature (e.g. metals, nanoparticles, micro/nanoplastics, organic pollutants).
- Fundamental research on the equilibrium and dynamic features of pollutant interactions with natural and engineered (bio)colloids and (bio)interfaces.
- Establishing mechanistic understanding of the nature and timescale of processes governing the relationships between the chemical and biological reactivity of pollutants.
- New insights into established techniques and development of novel methods for characterisation of (bio)interfaces and analysis of (bio)interfacial processes that influence pollutant fate and behaviour in exposure media and/or biota.
- Field studies on natural and agricultural systems that provide new knowledge and/or exploit the reactivity of pollutants and nutrients with (bio)interfaces and (bio)colloids.
- Solution-oriented research that exploits the reactivity of (bio)interfaces and (bio)colloids to design innovative strategies for soil and sediment (bio)remediation and wastewater treatment.
- Design and preparation of eco-friendly materials for gas purification, soil remediation, and wastewater treatments.
- Roles of (micro)organisms and biofilms in the immobilization, degradation, catalysis, transport and transformation of pollutants in environment, applications in bio-remediation.
- Interfacial mineralogical processes: effects on fate, behavior, and (bio)availability of nutrients and contaminants in natural and agricultural ecosystems.
- Environment implications of COVID-19 (e.g., transmission of COVID-19 through environment, treatment of medical waste, etc.)