A wide range of new environmental contaminants has been identified, for which the toxicity to the environment and humans and the regulatory measures are yet to be fully understood and developed. These hazardous substances are referred to as emerging contaminants or emerging contaminants of concern. These include a broad list of chemical compounds, particulate matters and microorganisms in water, air and soil environments. Examples of emerging contaminants are micro and nanoparticles (e.g., microplastic), fluorosurfactant (e.g., PFOS), pharmaceutical compounds (e.g., antibiotics, hormones, antiflammatory, antidiabetic, and antiepileptic drugs), cyanotoxins, healthcare products and flame retardants. The session aims to provide a forum for researchers to present and discuss the geo-environmental aspects of emerging contaminants, including identification methods, site investigations, engineering solutions for tackling and remediation techniques, and assessing the transport and fate of emerging contaminants. This session will focus on emerging contaminants in soil, sediments and groundwater.