DESCRIPTION

Chemosphere is an international journal designed for the publication of original communications as well as review articles on chemicals in the environment. Chemosphere, as a multidisciplinary journal, offers maximum dissemination of investigations related to all aspects of the identification, quantification, behavior, fate, toxicology, treatment, and remediation of chemicals in the bio-, hydro-, litho- and atmosphere.

Chemosphere will publish:
- Original communications (research papers) describing important new discoveries or further developments in important fields of investigation
- Reviews, mainly of new developing areas
- Letters to the editor
- Short communications
- Technical notes (only in Technology section)
- Special, themed issues on relevant topics

All papers should demonstrate a high level of novelty, originality and uniqueness. The following sections and subject fields are included:

Environmental Chemistry

This section will publish manuscripts dealing with fundamental processes in the environment that are related to the analysis, behavior, fate, and alteration of organic and inorganic contaminants focused on the dynamics of contaminants in environmental compartments such as water, soil, sediment, particulate matter, organisms, dust and indoor/outdoor air. Only studies that are of significance to an international audience, include sites of particular global interest, or lend themselves to interpretation at the global level should be submitted.

Topics of specific interest include, but not limited to, are:
- All aspects of emerging contaminants, such as pharmaceuticals, pesticides, flame retardants, other industrial chemicals, persistent organic pollutants, endocrine disruptors, etc.
- All aspects of trace metals, organometals, metalloids (e.g., arsenic) and radionuclides
- Environmental fate studies including transport, biodegradation, bio-accumulation and/or deposition, atmospheric (photo)chemical processes, hydrolysis, adsorption/desorption
- Transformation and mineralisation of chemicals (e.g., by bio- and photo degradation, redox processes and hydrolysis)
• Novel environmental analytical methods including case studies
• Environmental modelling and quantitative structure-activity relationships to study fate and environmental dynamics
• Monitoring studies presenting new strategies, report of novel contaminants, findings or interpretations of interest for an international readership.
• Passive sampling
• Non-target and suspect screening (e.g. effect-directed analysis)
• Natural marine toxins

The following studies are not considered for publication: studies on (micro)organisms (unless chemicals are clearly involved), monitoring studies based on standard methodology, and/or only of regional importance, studies dealing only with nutrients in agricultural ecosystems, pesticide application studies, plant physiology studies, studies on improvement of crops and purely analytical methodology studies. As regards papers on air pollution, we focus on contaminants in air, particulate matter studies and also consider papers on NO\textsubscript{X}, SO\textsubscript{X} or ozone.

**Toxicology and Risk Assessment**

The section on Environmental Toxicology and Risk Assessment covers all aspects of toxicology, i.e., the science of adverse effects of chemicals on living organisms including humans, and the scientific risk assessment.

Topics of specific interest include, but not limited to, are:
• Adverse effects of chemicals in environmental, aquatic and terrestrial, organisms
• Similar studies in experimental organisms (under laboratory conditions)
• Epidemiological studies on effects of chemicals in humans
• Biochemical studies related to mechanisms of adverse effects
• Toxicokinetics and metabolic studies on chemicals related to adverse effects
• Development and validation of testing methods based on living organisms or biological materials
• Nanopolymers, nanocomposites, and microplastics in the environment
• Adaptation
• Human biomonitoring
• Elucidation of mechanisms of toxic effects
• DNA and protein adducts
• In vitro assays and omics techniques
• Phytotoxicity

Not considered are, e.g., studies that report only concentrations of chemicals in the environment, living organisms, food or other materials etc. and studies on biochemical effects of chemicals non-relevant to toxicology.

**Treatment and Remediation**

This section deals with papers about technologies that manage and/or reduce environmental contaminants, including reuse and recycling processes. The technology must be beyond a basic laboratory study or have obvious implications for current or potential treatment or remediation technologies and, for example, for any advanced oxidation process, the intermediates and/or the extent of mineralization of the targeted compound(s) and wastes must be quantified.

Topics of specific interest include, but not limited to, are:
• Advanced water and wastewater treatment processes and sludge management
• Produced water
• Drinking water
• Incineration
• Remediation including bio/phytoremediation employing new strategies
• Hydraulic fracturing
• Use of biochar amended soil to bind (e.g., herbicides)
• Nanotechnology
• Advanced oxidation processes
• Photolysis/photocatalysis and electrochemical and photo-assisted electrochemical methods
• Sonolysis/sonocatalysis
• Mechanochemical destruction (MCD)
• Natural treatment systems (riverbank filtration and aquifer recharge/recovery)
• Characterization of natural and effluent organic matter
• Technologies for recycle/reuse (e.g., of microbial fuel cell techniques)
• Gasification/pyrolysis for biomass-to-energy and energy recovery from waste streams

Not considered are studies that focus on the synthesis of new materials to be used in waste water purification or remediation. Studies focusing on the removal of single contaminants are often less interesting for publication.

AUDIENCE

Environmental scientists, chemical engineers, biologists, toxicologists.

IMPACT FACTOR

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Environmental chemistry; Biogeochemistry; Bioaccumulation; Persistent organic pollutants; Chemicals of emerging concern; Chemical inventories; Mercury; Polycyclic aromatic compounds; Arctic; Marine mammals; Fish

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Soil remediation, contaminant removal from water, flue gas, metal speciation, metals in soil, bioavailability and human health, arsenic, phosphate, development, application of solid waste-derived environmentally functional materials, biochar, recycling, groundwater

Ralf Ebinghaus, Helmholtz Centre Geesthacht Centre for Materials and Coastal Research, Geesthacht, Germany
Atmosphere, particles, mercury, emerging contaminants, PFAS, ,

Milena Horvat, Jozef Stefan Institute, Ljubljana, Slovenia
Radionuclides, essential and potentially toxic elements metals, speciation, mercury, environment and health, biogeochemistry, marine environment, metrology contaminated sites, food contaminants, ,

Magali Houde, Montreal, Canada
Aquatic ecotoxicology, organic pollutants, toxicogenomics, biological effects, zooplankton and fish, bioaccumulation, impacts of waste water treatment plant effluent, emerging flame retardants, polyfluoroalkyl substances, marine mammals

Petra Krystek, VU Amsterdam, Amsterdam, Netherlands
Trace elements, speciation, nanomaterials, environment, health, exposure, (hyphenated) analytical techniques, method development, validation

Klaus Kümmerer, Leuphana University of Lüneburg Institute for Sustainable and Environmental Chemistry, Lüneburg, Germany
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Martine Leermakers, VUB University, Brussel, Belgium
Trace metals, organometals, metalloids, radionuclides, analytical techniques, geochemical cycling, metals and human health, gel diffusion techniques ,for in situ trace metal speciation DGT (diffusive gradients in thin films) and DET (diffusive equilibrium in thin films), mining

Lena Ma, Zhejiang University College of Environment and Resources Studies, Hangzhou, China
Biogeochemistry of trace metals in soils, wastes, and plants; Soil contamination and remediation; Metal bioavailability and bioaccessibility; Metal exposure and human health; Plant metal uptake and transport

Keith Maruya
Emerging contaminants, persistent organic pollutants, mass spectrometry, passive sampling, bioanalytical screening, contaminated sediments, bioaccumulation, trophic transfer

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Biochar; organic contaminants; heavy metals; polycyclic aromatic hydrocarbons; nanoparticles; sewage sludge; ecotoxicology; remediation

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Levels, trends, dl-POPs, BFRs, analytical methods, bioaccumulation, biomonitoring, exposure assessment, emission, production, generation

Toxicology and Risk Assessment

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Biological removal of organic compounds, nutrient removal, analysis and degradation of trace organics, odorants from water/wastewater

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Removal and recovery of phosphorus; biological nitrogen removal; anaerobic fermentation of biosolids; fate and attenuation of emerging organic contaminants

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