**DESCRIPTION**

_Chemosphere_ is an international journal designed for the publication of original communications and review articles. As a multidisciplinary journal, Chemosphere offers broad and impactful dissemination of investigations related to all aspects of environmental science and engineering.

Chemosphere will publish:

- Original communications (research papers) describing important new discoveries or further developments in important fields of investigation related to the environment and human health
- Reviews, mainly of new developing areas of environmental science
- Discussion papers
- Letters to the editor
- Short communications
- 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 behavior, fate and alteration of organic and inorganic contaminants of environmental concern. This section focuses on the dynamics of contaminants in environmental compartments such as water, soil, sediment, organisms, dust and air their interactions with the biosphere. This section also includes all scientific aspects of persistent organic pollutants (POPs), including exposure studies in the environment and people, toxicology, epidemiologic investigations, risk assessment and processes that generate or attenuate these pollutants. Only studies that are of significance to an international audience, including case studies of particular global interest, or lend themselves to interpretation at the global level should be submitted. Papers on climate change are not considered.

Specific topics of interest include:

- Emerging contaminants, such as pharmaceuticals, pesticides, flame retardants, other industrial chemicals, POPs, endocrine disruptors, etc.
- Trace metals, organometals, metalloids 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
• Soil and water chemistry focused on interaction, degradation and speciation aspects of environmental contaminants
• Novel environmental analytical methods including case studies
• Development and application of 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 general interest for an international readership.
• Non-target and suspect screening (e.g. effect-directed analysis)
• Marine toxins

**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 and toxic substances on living organisms including humans, and the scientific assessment of the risk that such adverse effects may occur.

Specific topics of interest include:
• Adverse effects of chemicals in environmental, aquatic and terrestrial, organisms
• 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
• Effects of nanoparticles, nanocomposites and microplastics in the environment
• Endocrine disruption
• High-throughput screening
• Mechanistic toxicology
• Fish toxicology
• DNA and protein adducts
• In vitro assays and omics techniques
• Phytotoxicity

**Treatment and Remediation**

This section focuses on 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. As an example, manuscripts focusing on fundamental (bio)adsorption studies or metal extraction by plant species should be submitted to a more suitable journal. The results of studies of a routine nature should not be submitted for review. For example, for oxidation processes, the intermediates and/or the extent of mineralization of the targeted compound(s) and wastes must be quantified in addition to target compound attenuation.

Specific topics that are encouraged for publication include:
• Advanced water and wastewater treatment processes and sludge management
• Remediation (including phytoremediation) employing novel strategies, findings, or interpretations
• Hazardous waste ? industrial chemicals
• Hydraulic fracturing and produced water
• Electrochemical methods for water and solids treatment
• Nanotechnology
• Advanced oxidation processes
• Photolysis and photocatalysis
• Natural treatment systems (riverbank filtration, aquifer recharge and recovery)
• Characterization and fate of natural and effluent organic matter

**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 competitive for publication in Chemosphere.
AUDIENCE

Environmental scientists, chemical engineers, biologists, toxicologists.

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Non-dl-POPs, FRs, levels, trends, analytical methods, food chain accumulation, interlab studies, biomonitoring, fate, exposure, fish, shellfish toxins
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Drinking water, hydraulic fracturing, produced water, water treatment processes (particularly advanced oxidation), use of cellular bioassays for characterizing complex mixtures of contaminants

Special Issues Editor
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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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PM2.5, air pollution, organic and inorganic contaminants, mercury, POPs, emerging contaminants, marine environment, polar environment, atmosphere
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
Sustainable Chemistry; Green Chemistry; Green and Sustainable Pharmacy; Resources; Benign by Design; Environmental Chemistry; Time and sustainability

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; Phytoremediation; Chemical stabilization; Metal speciation; Metal bioavailability and bioaccessibility; Metal exposure and human health; Plant metal uptake and transport; Microbial transformation of metals; Metal availability and food safety

Keith Maruya
Sources, fate, effects of emerging contaminants, natural organohalogenes, aquatic ecosystems, bioanalytical tools, passive samplers, POPs, HOCS, contaminated sediments, recycled water

Derek Muir, Environment and Climate Change Canada, Aquatic Contaminants Research Division, Burlington, Ontario, Canada
Environmental chemistry; Biogeochemistry; Bioaccumulation; Persistent organic pollutants; Chemicals of emerging concern; Chemical inventories; Mercury; Polycyclic aromatic compounds; Arctic; Marine mammals; Fish

Patryk Oleszczuk, Maria Curie-Sklodowska University, Lublin, Poland
Biochar; organic contaminants; heavy metals; polycyclic aromatic hydrocarbons; nanoparticles; sewage sludge; ecotoxicology; remediation

Myrto Petreas, California Department of Toxic Substances Control Berkeley Laboratory, Berkeley, California, United States
Levels, trends, dl-POPs, BFRs, analytical methods, bioaccumulation, biomonitoring, exposure assessment, emission, production, generation

Andreas Sjödin, Centers for Disease Control and Prevention, Atlanta, Georgia, United States
Human health; Analytical methods; Di- and non-di-POPs

Toxicology and Risk Assessment

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Bioassays, human biomonitoring, ecotoxicology, epidemiology, indoor air, oil fracking and drilling

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James Lazorchak, National Exposure Research Laboratory, Cincinnati, Ohio, United States
Effect of EDCs on fish populations; Estrogenicity of WWTP discharge; G expression; Toxicity effects on a population; Invasive toxic algae; DNA and protein adducts; Impact of coal; Mineral, gas and oil extraction; Pharmaceuticals; Water quality criteria

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Treatment and Remediation

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**Yu Liu**, Nanyang Technological University, Singapore, Singapore
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Bioavailability; Freshwater; Passive sampling; Metal; Nutrient; Water quality; Remediation; Geoengineering; Sediment; Soil

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Nutrition, toxicology, lipids, metabolism of metals in fish, aquatic environment
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persistent organic pollutants; wastewater; sewage sludge; soil; occurrence; fate; risk assessment

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Persistent organic pollutant (POPs), Emerging contaminants, Environmental fate, Human exposure

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Biochar, Resilience, Soil remediation, Biomass, Bioenergy

**Guillermo Quijano**, National Autonomous University of Mexico Research Laboratory of Advanced Water Treatment Processes, Querétaro, Mexico
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Synthetic fragrances and personal care products in the environment; Bioaccumulation and metabolism in biota like fish, seals, birds etc.; Bioaccumulation in human tissue/breast milk; Analysis of contaminants in biota and food samples; Residues and contaminants in food, EU food legislation

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Green chemistry/engineering; Soil/sediment remediation; Engineered biochar; Waste valorization; Resource recovery; Wastewater/stormwater treatment; Catalytic conversion/degradation; Pollutant transport; Environmental pollution | Sustainable urban development, urban wastes, contaminated land and water, waste management (food, wood, plastic agro, sludge), green remediation, wastewater treatment.
Katrin Vorkamp, Aarhus University Danish Centre for Environment and Energy, Roskilde, Denmark
Fate of organic pollutants in the environment; Persistent organic pollutants in the Arctic; New contaminants (e.g. brominated flame retardants); Analytical methods in complex matrices

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Nano particles, natural organic matter removal, water and wastewater treatment, gray water

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the biogeochemical cycles of carbon/nitrogen, the reductive degradation of emergent organohalide, fate and transport of engineering nano-materials in agricultural ecosystem and recover of energy/nutrient from wastewater.

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Organic contaminants; Oil fingerprinting; Fate and behavior of oil and organic contaminants; Analytical method development; Bioavailability assessment of organic contaminants; Passive sampling technologies; Polycyclic aromatic hydrocarbons; Petroleum biomarkers; Naphthenic acids Chromatography

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Treatment of drinking water, wastewater, formation and control of biofilms in distribution systems

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PM2.5, ozone, health effects air pollution, source apportionnement, aerosols

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Persistent Organic Pollutants, Dioxins, Incineration, POPs Emission, POPs Monitoring

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Fish; In vitro toxicology; Developmental and reproductive toxicology; Neurotoxicology; Oxidative stress; Molecular response and adverse outcome; Endocrine disruptors; Emerging pollutants; Nanoparticles and toxicity
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