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 (including Persistent Organic Pollutants and Dioxins)

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 sections 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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Drinking water, hydraulic fracturing, produced water, water treatment processes (particularly advanced oxidation), use of cellular bioassays for characterizing complex mixtures of contaminants

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PM2.5, air pollution, organic and inorganic contaminants, mercury, POPs, emerging contaminants, marine environment, polar environment, atmosphere
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trace elements, speciation, nanomaterials, environment, health, exposure, (hyphenated) analytical techniques, method development, validation
Klaus Kümmerer, Leuphana Universität Lüneburg, Lüneburg, Germany
Sources and fate of organic chemicals in the aquatic environment including waste water, especially pharmaceuticals, pesticides, QSARs, chemoinformatics, green chemistry, sustainable chemistry, sustainable pharmacy

**Martine Leermakers**, Vrije Universiteit Brussel (VUB), Bruxelles, 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

**Keith Maruya**, Southern California Coastal Water Research Project, Costa Mesa, California, USA
Sources, fate, effects of emerging contaminants, natural organohalogens, aquatic ecosystems, bioanalytical tools, passive samplers, POPs, HOCs, contaminated sediments, recycled water

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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

**Andreas Sjödin**, Centers for Disease Control and Prevention (CDC), Atlanta, Georgia, USA
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**Yeomin Yoon**, University of South Carolina, Columbia, South Carolina, USA
Water treatment; Membrane filtration; Adsorption; Sonodegradation; Oxidation; Micropollutants; Nanotechnology

**Toxicology and Risk Assessment**

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Nanopolymers and nanocomposites, microplastics as marine pollutants, ecotoxicology, adaptation, oil fracking and drilling, human biomonitoring

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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, USA
Effect of EDCs on fish populations, estrogenicity of WWTP discharge, gene expression, toxicity effects on a population, invasive toxic algaeDNA and protein adducts, impact of coal, mineral, gas and oil extraction, pharmaceuticals, water quality criteria

**Frederic Leusch**, Griffith University, Southport, Queensland, Australia
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**Treatment and Remediation**

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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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Bioremediation, phytoremediation, environmental engineering

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DAOP (advanced oxidation process), photolysis/photocatalysis, mechanochemical destruction (MCD), alternative to POPs, PPCPs removal

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**Hyunook Kim**, University of Seoul, Dongdaemun-Gu, Seoul, South Korea
Biological removal of organic compounds, nutrient removal, analysis and degradation of trace organics, odorants from water/wastewater

**Tsair–Fuh Lin**, National Cheng Kung University, Tainan, Taiwan
Identification, treatment, and process modeling relevant to cyanobacteria, taste and odor compounds and cyanotoxins present in reservoirs and water treatment plants; monitoring and treatment of arsenic and chlorinated hydrocarbons in ground water

**Yu Liu**, Nanyang Technological University, Singapore, Singapore
Anaerobic degradation, nutrient recovery

**William Mitch**, Stanford University, Stanford, California, USA
Environmental organic chemistry, disinfection byproduct formation mechanisms, nitrosamines, other research interests include the formation of nitrosamines formed by the reaction of NOx with amines used to capture CO2 from power plants, the effect of halides on the natural (i.e., sunlight) or engineered (i.e., advanced oxidation) photodegradation of contaminants, and the reductive transformation of contaminants sorbed to black carbons.

**Adalberto Noyola**, National Autonomous University of Mexico, Mexico City, Mexico
Biological wastewater treatment, anaerobic process for wastewater and sludge treatment, biological nitrogen removal, biofiltration of odorous gases, control of GHG emissions from wastewater treatment facilities

**Willie Peijnenburg**, Universiteit Leiden, Leiden, Netherlands
Risk assessment; Ecological risk assessment; Environmental fate and effect assessment; Nanoparticles; Bioavailability; Metals; Organics; Quantitative structure-activity relationships (QSARs); Transformation of chemical substances; Biodegradation; Abiotic transformations

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Legacy and emergent POPs, environmental monitoring, bioaccumulation, distribution in abiotic and biotic compartments, POPs in polar ecosystem, POPs in tropical ecosystem, toxicity risk assessment, gaschromatography, ecology, penguins and seabirds, marine trophic webs, turtles, sharks, Ecotoxicology

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POPs, Arctic, indoor air, dust

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Disinfection by-products, fate of micropollutants in the aquatic environment and water treatment processes, ozonation, advanced oxidation

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environmental organic chemistry, contaminated sediment, fate and transport modeling, persistent organic pollutants, passive sampling

**Heidelore Fiedler**, Örebro, Sweden

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Persistent Organic Pollutants and their environmental fate, transport and passive sampling methods

**Rachel Ann Hauser-Davis**, Rio de Janeiro, Brazil

ekctotoxicology, bioassays, proteomics, metallomics, metal contamination, biomarkers, metallothionein, oxidative stress, analytical techniques, POPs, enzymes, PAH, biomonitoring, bioaccumulation, HPLC-ICP-MS, ICP-MS, protein and DNA electrophoresis, fish, mussels, marine mammals, in vitro assays

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toxicology, SPME fibers, mode of action, in vitro tests

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dioxins, PCBs, transfer, bioassay, PFASs, analysis, risk assessment, exposure assessment

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wetland biogeochemistry; microbial ecology; pollutant transfer; biodegradation; pesticides

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Arctic, emerging contaminants

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metals in sediment

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fate, effects of chemicals, metals, sediment toxicity, nano

**Marja Lamoree**, Amsterdam, Netherlands

Analytical method development Exposure assessment Effect-Directed Analysis Suspect screening High throughput screening Non-target analysis Contaminant identification Human biomonitoring Water quality

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metabolomics, analytical chemistry, flame retardants, dust

**Domen Lestan**, Ljubljana, Slovenia

Soil washing, phytoextraction, immobilisation of toxic elements, metals in soil, soils bioavailability and bioaccessibility, soil functioning, soil ecosystem services

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Keywords: HPLC-MS, water disinfection byproducts, toxicology

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Membrane Technology

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dioxins in humans

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Soil pollutants and health, environmental transport and fate of pollutants, risk assessment and public health, waste treatment and disposal

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Antibiotic resistance; Water quality; Indicator bacteria; Contaminant source tracking; Recycled wastewater

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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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biological treatment processes

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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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Biochemistry; Toxicology

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air pollution, dioxins

Daniel Tsang, Hong Kong, China
soil/sediment remediation, environmental chemistry, pollutant transport, wastewater treatment/reclamation, resource recovery

Katrin Vorkamp, 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

Jana Weiss, Uppsala, Sweden
analytical chemistry, human exposure, non-target screening, effect-directed analysis

Yu (Frank) Yang, Reno, Nevada, USA
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.

Zeyu Yang, Ottawa, Canada
sorption, desorption, degradation, transport, fate natur. matter

Minghui Zheng, Beijing, China
Persistent Organic Pollutants, Dioxins, Incineration, POPs Emission, POPs Monitoring
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