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
• Photoysis 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
Shane Snyder, University of Arizona, 1133 E. James E. Rogers Way, Harshbarger 108, Tucson, Arizona, 85721-0011, USA
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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Environmental Chemistry

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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

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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 Kümmерer, Leuphana Universität Lüneburg, Lüneburg, Germany
Sustainable Chemistry; Green Chemistry; Green and Sustainable Pharmacy; Resources; Benign by Design; Environmental Chemistry; Time and sustainability

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

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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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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

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Human health; Analytical methods; Di- and non-di-POPs

Toxicology and Risk Assessment

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

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Jian-Ying Hu, Peking University, Beijing, China

James Lazorchak, National Exposure Research Laboratory, Cincinnati, Ohio, USA
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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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
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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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Assessment of Human Exposure to Organic Pollutants and Toxicants

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Persistent Organic Pollutants and Dioxins

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