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 section focuses on the dynamics of contaminants in environmental compartments such as water, soil, sediment, organisms, dust and air and 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
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
Derek Muir, Aquatic Contaminants Research Division, Environment and Climate Change Canada, 867 Lakeshore Road, Burlington, L7S1A1, Ontario, Canada
Environmental chemistry; Biogeochemistry; Bioaccumulation; Persistent organic pollutants; Chemicals of emerging concern; Chemical inventories; Mercury; Polycyclic aromatic compounds; Arctic; Marine mammals; Fish

Associate Editors

Environmental Chemistry
Xinde Cao, Shanghai Jiao Tong University, Shanghai, China
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Jacob de Boer, Vrije Universiteit Amsterdam, Amsterdam, Netherlands
Non-dl-POPs, FRs, levels, trends, analytical methods, food chain accumulation, interlab studies, biomonitoring, fate, exposure, fish, shellfish toxins
Ralf Ebtinghaus, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany
PM2.5, air pollution, organic and inorganic contaminants, mercury, POPs, emerging contaminants, marine environment, polar environment, atmosphere
Petra Krystek, Vrije Universiteit Amsterdam, Amsterdam, Netherlands
trace elements, speciation, nanomaterials, environment, health, exposure, (hyphenated) analytical techniques, method development, validation

Klaus Kümmerer, 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

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

Derek Muir, Environment and Climate Change Canada, 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 Environmental Protection Agency, Berkeley, California, USA
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
Human health; Analytical methods; Di- and non-di-POPs

Toxicology and Risk Assessment

Tamara Galloway, University of Exeter, Exeter, England, UK
Nanopolymers and nanocomposites, microplastics as marine pollutants, ecotoxicology, adaptation, oil fracturing and drilling, human biomonitoring

Andreas Gies, German Environment Agency, Berlin, Germany
Bioassays, human biomonitoring, ecotoxicology, epidemiology, indoor air, oil fracturing and drilling

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

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

David Volz, University of California, Riverside, Riverside, California, USA
Fish toxicology; hepatotoxicity; cardiovascular toxicity; neurotoxicity; early life-stage toxicity; pesticides; high-volume chemicals; flame retardants; chemicals policy and regulation; human and ecological risk assessment; high-throughput screening; mechanistic toxicology;

Treatment and Remediation

Enric Brillas, Universitat de Barcelona, Barcelona, Spain
Non-dl-POPs, FRs, levels, trends, analytical methods, food chain accumulation, interlab studies, biomonitoring, fate, exposure, fish, shellfish toxins

Teresa J. Cutright, University of Akron, Akron
bioremediation, phytoremediation, environmental engineering

Jun Huang, Tsinghua University, Beijing, China
DAOP (advanced oxidation process), photolysis/photocatalysis, mechnochemical destruction (MCD), alternative to POPs, PPCPs removal

Hyunook Kim, University of Seoul, Dongdaemun-Gu, Seoul, The Republic of 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

**Shane Snyder**, University of Arizona, Tucson, Arizona, USA
Drinking water, hydraulic fracturing, produced water, water treatment processes (particularly advanced oxidation), use of cellular bioassays for characterizing complex mixtures of contaminants

**Yeomin Yoon**, University of South Carolina, Columbia, South Carolina, USA
Water treatment; Membrane filtration; Adsorption; Sonodegradation; Oxidation; Micropollutants; Nanotechnology

**Chang-Ping Yu**, National Taiwan University, Taipei, Taiwan
Environmental biotechnology, environmental microbiology, biodegradation, microbial electrochemical technology, biological wastewater treatment, bioremediation

**Xiangru Zhang**, Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong
Water treatment, drinking water, emerging compounds, disinfection byproducts

**Editorial Board**

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water quality

**Georg Becher**, University of Oslo, Oslo, Norway
Assessment of Human Exposure to Organic Pollutants and Toxicants

**Henk Bouwman**, North-West University, Potchefstroom, South Africa
dioxins, DDT, POPs

**Bella Chu**, Texas A&M University, College Station, Texas, USA
Biodegradation, Bioremediation, Endocrine-disrupting compounds, Emerging contaminants, Bioenergy and value-added products.

**Simone Corsolini**, Università degli Studi di Siena, Siena, Italy
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

**Shiming Ding**, Chinese Academy of Sciences (CAS), Nanjing, China
Bioavailability; Freshwater; Passive sampling; Metal; Nutrient; Water quality; Remediation; Geoengineering; Sediment; Soil

**Shinya Echigo**, Kyoto University, Kyoto, Japan
disinfection by-products, fate of micropollutants in the aquatic environment and water treatment processes, ozonation, advanced oxidation

**Mingliang Fang**, Nanyang Technological University, Singapore, Singapore
Metabolomics; Risk Assessment; Environmental Analytical Chemistry; Gut microbiome; Biomarkers; Exposome; Mixture Effect; Non-targeted identification

**Loretta Fernandez**, Northeastern University (NU), Boston, Massachusetts, USA
environmental organic chemistry, contaminated sediment, fate and transport modeling, persistent organic pollutants, passive sampling

**Heidelore Fiedler**, Orebro University, Orebro, Sweden
Persistent Organic Pollutants and Dioxins

**Yanzheng Gao**, Nanjing Agricultural University, Nanjing, China
Organic contaminant; Soil-plant system; Soil contamination and remediation; Rhizosphere; Root exudates; Soil environmental chemistry; Bioremediation; Plant contamination

**Sergio Garcia-Segura**, Arizona State University, Tempe, Arizona, USA
Water treatment; Persistent organic pollutants; Electrochemically driven processes; Electrochemical Advanced Oxidation Processes; Electrochemical oxidation Electro-Fenton; Photoelectrocatalysis; Electrochemical management of nitrogen cycle; Photocatalysis; Nanotechnology

Tom Harner, Environment Canada, Toronto, Ontario, Canada

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

Rachel Ann Hauser-Davis, Oswaldo Cruz Foundation (FIOCRUZ), Rio de Janeiro, Brazil

etoxicoanalysis, 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

Ron Hoogenboom, Wageningen Universiteit, Wageningen, Netherlands
dioxins, PCBs, transfer, bioassay, PFASs, analysis, risk assessment, exposure assessment

Gwenaël Imfeld, Université de Strasbourg, Strasbourg Cedex, France

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

Roland Kallenborn, Norwegian University of Life Sciences, Aas, Norway

Arctic, emerging contaminants

Nynke Kramer, Universiteit Utrecht, Utrecht, Netherlands

3R; In vitro toxicology; Distribution kinetics; Toxicokinetics; PBPK; Protein binding; QIVIVE; Chemical safety assessment; Toxicological risk assessment; Environmental chemistry

Pim Leonards, IVM/VU, Amsterdam, Netherlands

metabolomics, analytical chemistry, flame retardants, dust

Domen Lestan, University of Ljubljana, Ljubljana, Slovenia

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

Xingfang Li, University of Alberta, Edmonton, Alberta, Canada

Keywords: HPLC-MS, water disinfection byproducts, toxicity

Yongmei Li, Tongji University, Shanghai, China

NDMA and CEC Fate; wastewater treatment; phosphorus or carbon resource recovery

Heng Liang, Harbin Institute of Technology, Harbin, China

Membrane Technology

Grzegorz Lisak, Nanyang Technological University, Singapore, Singapore

Waste to energy; Waste to materials; Circular economy; Waste management; Soil remediation; Municipal solid wastes; Gasification; Pyrolysis; Application of waste derived materials; Waste upcycling and recycling

Jian Lu, Chinese Academy of Sciences (CAS), Yantai, China

Emerging contaminants; Endocrine -disrupting chemicals; Antibiotics and heavy metals; Antibiotic resistance genes; Microplastics; Biodegradation; Persistent organic pollutants; Fate and transport; Coastal and marine pollution; Aquaculture and pollution

Lena Ma, University of Florida, Gainesville, Florida, USA

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

Jean McLain, University of Arizona, Tucson, Arizona, USA

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

Xiang-Zhou Meng, Tongji University, Shanghai, China

persistent organic pollutants; wastewater; sewage sludge; soil; occurrence; fate; risk assessment

Hyo-Bang Moon, Hanyang University, Ansan, The Republic of Korea

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

Jochen Müller, University of Queensland, Brisbane, Queensland, Australia

emerging contaminants, dioxins

Junfeng Niu, Beijing Normal University, Beijing, China

environmental technology

Pongsak Noophan, Kasetsart University, Bangkok, Thailand

biological treatment processes

Yong Sik Ok, Korea University, Seoul, The Republic of Korea

Soil pollution; Soil remediation; Heavy metals in the environment; Waste management; Bioavailability of Emerging Contaminants; Bioenergy and value-added products; Biochar and soil organic matter; Phytoremediation.

Guillermo Quijano, Universidad Nacional Autónoma de México (UNAM), México

Biological treatment of gas pollutants; Biogas desulfurization; Biogas upgrading; greenhouse gases; Odors; Renewable energy from residues; Volatile organic compounds

Gerhard Rimkus, Intertek Food Services, Hamburg, Germany
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

**Paolo Roccaro**, Università degli Studi di Catania, Catania, Italy

environmental engineering; water treatment and reuse; emerging contaminants; disinfection by-products.

**Virender K Sharma**, Texas A&M University, College Station, Texas, USA

**Reyes Sierra-Alvarez**, University of Arizona, Tucson, USA

Biodegradation, biological treatment, bioremediation, microbial toxicity; engineered nanomaterials; nanotoxicity; metal-microbe interactions; wastewater treatment; metal bioremoval

**Werner Tirler**, Eco Research, Bolzano, Italy

air pollution, dioxins

**Daniel Tsang**, The Hong Kong Polytechnic University, Hong Kong, China

Green chemistry/engineering; Soil/sediment remediation; Engineered biochar; Waste valorization; Resource recovery; Wastewater/stormwater treatment; Catalytic conversion/degradation; Pollutant transport; Environmental pollution

**Stefan van Leeuwen**, Wageningen Universiteit, Wageningen, Netherlands

PFASs; BFRs; dioxins/PCBs; Fish; Exposure assessment; Human biomonitoring; Analytical techniques; Interlaboratory studies; Effect-directed analysis; Food safety

**Katrin Vorkamp**, National Environmental Research Institute, 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

**Qilin Wang**, University of Technology Sydney, Sydney, New South Wales, Australia

Biological wastewater treatment; Anaerobic digestion; Sludge treatment; Nutrient removal; Process modelling of biological wastewater treatment; Greenhouse gas production; Algae; Biochar; Bioenergy and value-added products; Aerobic digestion

**Jana Weiss**, Uppsala Universitet, Uppsala, Sweden

analytical chemistry, human exposure, non-target screening, effect-directed analysis

**Lingtian Xie**, South China Normal University, Guangzhou, China

Aquatic toxicology; Endocrine disrupting chemicals; Effects of PPCPs in aquatic organisms; Metal biodynamic modeling; Metal toxicity; Dietary exposure; Trophic transfer; Evolution of resistance; Antibiotic resistance; Biomarkers

**Yu (Frank) Yang**, University of Nevada at Reno, 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**, Environment Canada, Ottawa, Canada

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

**Minghui Zheng**, Chinese Academy of Sciences (CAS), Beijing, China

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

**Bingsheng Zhou**, Chinese Academy of Sciences (CAS), Wuhan, China

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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