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

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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

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

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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-di-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, mechanochemical 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
An aerobic 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, an aerobic 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, Hong Kong
Water treatment, drinking water, emerging compounds, disinfection byproducts

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Water quality

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

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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.

Simonetta 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, gas chromatography, 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

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

Heidelore Fiedler, Örebro University, Örebro, 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; Photocatalysis; 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
ecotoxicology, 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
Gwenaëll 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, Utrecht University, 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, toxicology
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
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, Griffith University, Nathan, Queensland, Australia
analytical chemistry, human exposure, non-target screening, effect-directed analysis

Jana Weiss, Uppsala Universitet, Uppsala, Sweden
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 toxicity; Developmental and reproductive toxicology; Neurotoxicology; Oxidative stress; Molecular response and adverse outcome; Endocrine disruptors; Emerging pollutants; Nanoparticles and toxicity
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