**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 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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Co-Editors-in-Chief
Jacob de Boer, Free University of Amsterdam Department of Environment and Health, De Boelelaan 1085, 1081 HV, Amsterdam, Netherlands
Non-dl-POPs, FRs, levels, trends, analytical methods, food chain accumulation, interlab studies, biomonitoring, fate, exposure, fish, shellfish toxins
Tamara Galloway, University of Exeter, EX4 4QJ, Exeter, United Kingdom
Nanopolymers and nanocomposites, microplastics as marine pollutants, ecotoxicology, adaptation, oil fracking and drilling, human biomonitoring
Yeomin Yoon, University of South Carolina, Columbia, South Carolina, 29208-0001, United States
Water treatment, Membrane filtration, Adsorption, Sonodegradation, Oxidation, Micropollutants, Nanotechnology

Special Issues Editor
Derek Muir, Environment and Climate Change Canada, Aquatic Contaminants Research Division, 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
Jacob de Boer, Free University of Amsterdam Department of Environment and Health, Amsterdam, Netherlands
Non-dl-POPs, FRs, levels, trends, analytical methods, food chain accumulation, interlab studies, biomonitoring, fate, exposure, fish, shellfish toxins
Xinde Cao, Shanghai Jiao Tong University - Fahua Campus, Shanghai, China
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
Ralf Ebinghaus, Helmholtz Centre Geesthacht Centre for Materials and Coastal Research, Geesthacht, Germany
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 Kümmner, 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;
Metal bioavailability and bioaccessibility; Metal exposure and human health; Plant metal uptake and
transport

Keith Maruya
Emerging contaminants, persistent organic pollutants, mass spectrometry, passive sampling,
bioanalytical screening

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 biomonitoring for primarily persistent organic pollutants; Development of human
biomonitoring methods; Identification of human exposure routes and assessment of adverse human
health effects through epidemiologic studies.

David Volz, University of California Riverside Department of Environmental Sciences, Riverside, California,
United States
Developmental toxicology, Alternatives to regulatory toxicity testing, Chemicals policy and regulation,
Flame retardant exposure and toxicity

Toxicology and Risk Assessment

Andreas Gies, Umweltbundesamt Aussenstelle Berlin-Grunewald, Berlin, Germany
Bioassays, human biomonitoring, ecotoxicology, epidemiology, indoor air, oil fracking and drilling

Jian-Ying Hu, Peking University College of Urban and Environmental Sciences, Bejing, China
Bioassays, human biomonitoring, effects of EDCs on reproduction and development, health risk
assessment, ecological risk assessment, Biomagnification in aqueous food-web, epidemiology, and
drinking water quality.

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

Willie Peijnenburg, Leiden University Institute of Environmental Sciences, 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

Treatment and Remediation

Enric Brillas, University of Barcelona, Barcelona, Spain
Anodic oxidation; Electrochemical advanced oxidation processes; Electro-Fenton; 
Photoelectrocatalysis; Photoelectro-Fenton

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

Jun Huang, Tsinghua University, Beijing, China
Advanced oxidation processes (AOPs), advanced reduction process (ARPs), photochemistry, mechanochemistry, per- and polyfluoroalkyl substances (PFAS)

Hyunook Kim, University of Seoul Department of Environmental Engineering, Seoul, Korea, Republic of
Biological removal of organic compounds, nutrient removal, analysis and degradation of trace organics, odorsants from water/wastewater

Yongmei Li, Tongji University, Shanghai, China
Removal and recovery of phosphorus; biological nitrogen removal; anaerobic fermentation of biosolids; fate and attenuation of emerging organic contaminants

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

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

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

Junfeng Niu, Dongguan University of Technology, Dongguan, China
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

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

Xiangru Zhang, Treatment and Remediation, Chemosphere, Hong Kong University of Science and Technology Department of Civil and Environmental Engineering, Hong Kong, Hong Kong
Water treatment, drinking water, emerging compounds, disinfection byproducts

Editorial Board

Mari Asami, National Institute of Public Health Department of Environmental Health, Saitama, Japan
Drinking water, water quality standard, water treatment, chemical analysis, environmental risk management

Maria Augustyniak, University of Silesia, Katowice, Poland
Development and reproduction under anthropogenic stress, Metals, pesticides, nanoparticles – toxicity/risk assessment, Oxidative stress and DNA damage, Ecotoxicology, Phenotypic plasticity, acclimation/adaptation in the light of environmental pollution

Georg Becher, University of Oslo Department of Chemistry, Oslo, Norway
Research Interests: Assessment of Human Exposure to Organic Pollutants and Toxicants

Tom Bond, University of Surrey Department of Civil and Environmental Engineering
Disinfection byproducts, Microplastics, Water treatment, Wastewater treatment, Drinking water disinfection

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

Sicco Brandsma, Vrije Universiteit Amsterdam, Faculty of Science, Netherlands
Giovanni Cagnetta, Tsinghua University School of Environment, Beijing, China
Mechanochemical treatment of waste; green synthesis of materials; adsorption; emerging contaminants

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

Simonezza Corsolini, University of 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, Nanjing Institute of Geography and Limnology Chinese Academy of Sciences, 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

Lorett Fernandez, Northeastern University, Boston, Massachusetts, United States
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

Peng Gao, Stanford University Department of Genetics, Stanford, California, United States
Environmental chemistry and toxicology, Analytical chemistry, Environmental health sciences, Exposome, Gene-environment interaction

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

Sergi Garcia-Segura, Arizona State University, Tempe, Arizona, United States

Jiarui Han, Hong Kong University of Science and Technology Department of Civil and Environmental Engineering, Hong Kong, Hong Kong
Water treatment, Disinfection byproducts, Emerging micropollutants, Toxicity risk assessment

Tom Harner, Environment and Climate Change Canada, Downsview, Ontario, Canada
Persistent Organic Pollutants and their environmental fate, transport and passive sampling methods

Muhammad Zaffar Hashmi, COMSATS University Islamabad, Islamabad, Pakistan
Biodegradation, biotransformation, PCBs, arsenic, metals, antibiotic resistance, antibiotics, soil

Rachel Ann Hauser-Davis, Oswaldo Cruz Foundation, Rio de Janeiro, Brazil
ecotoxicology, bioassays, proteomics, metallomics, metal contamination, biomarkers, metallothionein, oxidative stress, analytical techniques, POPs, enzymes, PAH, biomonitring, bioaccumulation, HPLC-ICP-MS, ICP-MS, protein and DNA electrophoresis, fish, mussels, marine mammals, in vitro assays

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

Guanghui Hua, South Dakota State University, Department of Civil and Environmental Engineering, Brookings, United States
Water treatment, Natural Organic Matter, Disinfection Byproducts, Stormwater Treatment, Nutrient Removal

Gwenaël Imfeld, University of Strasbourg, Strasbourg, France
Environmental biogeochemistry, pollutant transformation, microbial ecology, agricultural catchment hydrology, stable isotope analysis

Roland Kallenborn, Norwegian University of Life Sciences, Ås, Norway
Arctic, emerging contaminants

Sarit Kaserzon, University of Queensland, Brisbane, Queensland, Australia
Passive sampling, dust, UV filters, personal care products, biomarkers, natural halogens, BFRs, PFAS

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

Stefan van Leeuwen, Wageningen University, Wageningen, Netherlands
PFASs; BFRs; dioxins/PCBs; Fish; Exposure assessment; Human biomonitoring; Analytical techniques; Interlaboratory studies; Effect-directed analysis; Food safety

Pim Leonards, Utrecht University, Utrecht, 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

Hong-Bo Li, Nanjing University, Nanjing, China
Bioavailability, PAHs, arsenic, metals in soil dust, food, human health risk, mitigation strategies

Xingfang Li, University of Alberta Division of Analytical and Environmental Toxicology, Edmonton, Alberta, Canada
Keywords: HPLC-MS, water disinfection byproducts, toxicology

Heng Liang, Harbin Institute of Technology, School of Environment, Harbin, China
Membrane-based water treatment process, Membrane fouling, Drinking water treatment, Water reuse, Advanced oxidation

Jian Lu, Yantai Institute of Coastal Zone Research, 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

**Zhi Luo**, Huazhong Agriculture University, Wuhan, China
Keywords: Fish, lipid metabolism, exposure to metals, signal transduction

**Jean McLain**, University of Arizona, Tucson, Arizona, United States
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

**William Mitch**, Stanford University Department of Civil and Environmental Engineering, Stanford, California, United States
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.

**Hyo-Bang Moon**, Hanyang University Department of Marine Science and Convergence Engineering, Ansan, Korea, Republic of
Persistent organic pollutant; Emerging contaminant; Bioaccumulation; Human biomonitoring; Non-target analysis

**Jochen Müller**, University of Queensland, Brisbane, Queensland, Australia
emerging contaminants, dioxins

**Hai Tran Nguyen**, DuyTan University Institute of Fundamental Science and Application, Da Nang, Viet Nam
Adsorption; nanomaterial; water treatment; water pollution; waste management

**Pongsak Noophan**, Kasetsart University, Bangkok, Thailand
biological treatment processes

**Yong Sik Ok**, Korea University, Korea Biochar Research Center, Chuncheon, Korea, Republic of
Biochar, Resilience, Soil remediation, Biomass, Bioenergy

**Guillermo Quijano**, National Autonomous University of Mexico Research Laboratory of Advanced Water Treatment Processes, Querétaro, Mexico
Anoxic processes, Biogas, Desulfurization, Gas pollutants, Microalgae-bacteria systems.

**Gerhard Rimkus**, Intertek Caleb Brett Germany GmbH, 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**, University of Catania, Catania, Italy
Technologies for applications to water; Water monitoring and modelling; Environmental analysis and assessment; Waste management and valorization

**Rosaria Sciarrillo**, University of Sannio, Benevento, Italy
Thyroid, neurotox, nonylphenol effects, western blotting, phytoremediation, marine sediment, reptiles

**Virender K Sharma**, Texas A&M University College Station, College Station, Texas, United States
Advanced Oxidation Processes; Ferrate; Engineered and Natural Nanoparticles; Disinfection Byproducts; Remediation

**Liguo Shen**, Zhejiang Normal University, Jinhua, China
Membranes, bioreactors, antifouling, dyes, nanofiltration

**Reyes Sierra-Alvarez**, University of Arizona, Tucson, Arizona, United States
Biodegradation, biological treatment, bioremediation, microbial toxicity; engineered nanomaterials; nanotoxicity; metal-microbe interactions; wastewater treatment; metal bioremoval

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

**Athanasios S. Stasinakis**, University of the Aegean Department of Environment, Mytilini, Greece
Wastewater treatment and reuse; Sludge management; Emerging contaminants; Aquatic pollution; Biodegradation; Ecotoxicity; Risk assessment

**Werner Tirler**, Eco Research Srl, Bolzano, Italy
air pollution, dioxins

**Ngoc Han Tran**, National University of Singapore, Singapore
Environmental analytical chemistry, Emerging contaminants, Transformation of emerging contaminants, High-resolution mass spectrometry for targeted and non-target analyses, Occurrence and fate of emerging contaminants

**Daniel Tsang**, The Hong Kong Polytechnic University Department of Civil and Environmental Engineering, Hong Kong, Hong Kong

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

Hongtao Wang, Tongji University, Shanghai, China
Water chemistry, water and wastewater treatment, sludge management, heavy metal

Qilin Wang, University of Technology Sydney Faculty of Engineering and Information Technology, 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

Zhi Wang, Institute of Geodesy and Geophysics Chinese Academy of Sciences, Wuhan, China
Freshwater wetland/lake pollution; Emerging contaminants; Antibiotics and antibiotic resistance genes; Toxic algae bloom and microcystins; Heavy metals; Ecotoxicology; Joint toxicity; Phytoremediation; Pollutant removal.

Zongsu Wei, Aarhus University Centre for Water Technology, Aarhus, Denmark
Advanced oxidation, photocatalysis, emerging contaminants, aquatic chemistry, water and wastewater treatments

Endocrine disrupting compounds (EDC), Human exposure, Thyroidogenicity, mixtures, Effect-directed analysis (EDA)

Ping Xiang, Southwest Forestry University, Kunming, China
Indoor pollution and human health; Mechanistic toxicology of emerging contaminants; Environmental pollution and food safty; Cellular and molecular toxicology; Bioavailability and intestinal cell absorption

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 Reno, Reno, Nevada, United States
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 Emergencies Science and Technology Division, 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

Xin Yu, Xiamen University, Xiamen, China
Treatment of drinking water, wastewater, formation and control of biofilms in distribution systems

Hongliang Zhang, Fudan University, Shanghai, China
Air Pollution, Source Apportionment, Numerical Modeling, Climate Change, Landuse Changes

Minghui Zheng, Research Centre for Eco-Environmental Sciences Chinese Academy of Sciences, Beijing, China
Persistent Organic Pollutants, Dioxins, Incineration, POPs Emission, POPs Monitoring

Bingsheng Zhou, Institute of Hydrobiology Chinese Academy of Sciences, Wuhan, China
Fish toxicity; in vitro assay; environmental risk assessment; emerging environmental pollutants; nanoparticles and toxicology
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