SCIENCE OF THE TOTAL ENVIRONMENT
An International Journal for Scientific Research into the Environment and its Relationship with Humankind

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DESCRIPTION

Science of the Total Environment is an international multi-disciplinary journal for publication of original research on the total environment, which includes the atmosphere, hydrosphere, biosphere, lithosphere, and anthroposphere.

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AUDIENCE

Environmental Scientists, Environmental Toxicologists, Ecologists, Chemical/Environmental Engineers, Environmental Health Scientists and Epidemiologists, Risk Scientists, Environmental Science Managers and Administrators.

IMPACT FACTOR

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ABSTRACTING AND INDEXING

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Elsevier BIOBASE
Meteorological and Geoastrophysical Abstracts
Scopus
EDITORIAL BOARD

Co-Editors in Chief:
Damià Barceló, Consejo Superior de Investigaciones Científicas (CSIC), Barcelona, Spain
Environmental analysis; Water and soil quality; Organic mass spectrometry; Emerging organic contaminants; Nanomaterials; Biosensors for: Analysis, Fate and Risk of Emerging Pollutants such as Pharmaceuticals and Nanomaterials in the Environment Water Pollution Control and Protection Bridging analytical chemistry with ecotoxicology- toxicity identification; Evaluation techniques used: GC and LC tandem MS, biosensors, sample preparation, automated on-line techniques for water analysis environmental samples (water, including marine waters, sediments soils, biota samples)
Jay Gan, University of California, Riverside, Riverside, California, USA
Organic Contaminants; Pesticides; Emerging Contaminants; Adsorption; Transformation; Mitigation; Water Quality; Aquatic Toxicology; Remediation; Water Reuse

Special Issues Editor
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Plant health; Plant ecophysiology; Forests; Climate stressors; Air pollution impacts on terrestrial ecosystems; BVOC; Ground-level ozone

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Metals; Pharmaceuticals; Nanoparticles; Pollution; Ecotoxicology; Risk assessment; Seawater; Sediment
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Soil pollution control and remediation; Traditional and novel functional materials and environmental applications (biochar, graphene, biosorbent, and organoclay); Sorption and reactions of organic and inorganic contaminants with natural and synthesised media; Novel membrane and pollutant abatement
Jianmin Chen, Fudan University, Shanghai, China
Gaseous and particulate air monitoring and chemistry (particularly urban); Secondary aerosol; Haze formation and fog chemistry; Human toxicity of atmospheric particulates; Aerosols and climate impacts
Frederic Coulon, Cranfield University, Cranfield, Bedfordshire, England, UK
Remediation, hazardous waste, water and wastewater treatment ; Risk assessment and remediation; Bioaerosols; Hydrocarbons; Environmental microbiology; Antarctic science
Adrian Covaci, University of Antwerp, Wilrijk, Belgium
Human exposure; Exposure assessment; Human health effects; Biomarkers; Food safety; Biomonitoring; Indoor pollution; Emerging contaminants; Legacy contaminants; Wastewater epidemiology
Xinbin Feng, Chinese Academy of Sciences (CAS), Guiyang, China
Mercury biogeochemical cycling in the environment and its health impact; Mercury stable isotope geochemistry and remediation of mercury contaminated lands; Cd, Pb, As and Sb biogeochemical cycling in the environment
José Virgilio Matos Figueira Cruz, University of the Azores, Ponta Delgada, Portugal
Groundwater geology; Groundwater geochemistry; Surface water chemistry; Water quality; Water pollution; Water management; Water planning
Pingqing Fu, Tianjin University, Tianjin, China
Organic aerosols; Atmospheric chemistry; Isotopes of atmospheric aerosols; Fog water; Ice-core organics; Dissolved organic matter; Biomarkers
Ashantha Goonetilleke, Queensland University of Technology, Brisbane, Queensland, Australia
Water quality; Water pollution; Water reuse; Water treatment; Stormwater pollutant processes; Integrated Water Resources Management; Water infrastructure resilience; climate change adaptation
Mae Sexauer Gustin, University of Nevada at Reno, Reno, Nevada, USA
Biogeochemical cycling of mercury, metals, and isotopes; Air pollution
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Water pollution and treatment; Environmental biotechnology; Resource recovery from wastes; Bioelectrochemical systems; Bioenergy; Membrane technology; Bioremediation; Desalination
Patricia A. Holden, University of California, Santa Barbara, California, USA
Water quality; Environmental microbiology; Fecal pollution, Biodegradation and bioremediation; Soil pollution and soil processes; Nanomaterials; Wastewater treatment; Biogeochemistry; Emerging contaminants; Hydrocarbons; Metals
Henner Hollert, RWTH Aachen University (RWTH), Aachen, Germany
Bioanalytical environmental toxicology; Aquatic toxicology; Triad (Weight of evidence) approaches; Effect directed analysis; Sediments; In-situ investigations and monitoring; In-vitro bioassays; Waste- and ground water investigations (advanced wastewater treatment); Ecology

**Deyi Hou**, Tsinghua University, Beijing, China
Sustainability assessment; Life cycle assessment; Environmental footprint analysis; Risk management; Contaminated soil and groundwater remediation; Heavy metal contamination; Biochar production and application; Green synthesis of environmental functional materials; Fate and transport of volatile organic compounds in porous media

**Ching-Hua Huang**, Georgia Institute of Technology, Atlanta, Georgia, USA
Environmental chemistry; Water quality; Physicochemical treatment processes; Drinking water quality; Wastewater reuse; Contaminants of emerging concern; Reaction kinetics and mechanism

**Wei Huang**, Peking University, Beijing, China
Exposure assessment; Environmental epidemiology; Health intervention

**G. Darrel Jenerette**, University of California, Riverside, Riverside, California, USA
Land use/land cover; Carbon and nitrogen cycling; Ecohydrology; Drylands; Urbanization; Spatial analysis; Remote sensing

**Pavlos Kassomenos**, University of Ioannina, Ioannina, Greece
Air pollution; Meteorology; Environmental health; Climate change; Particulates; Ozone; Bioaerosols; Dust transportation; Vehicle emissions; Noise

**Ewa Korzeniewska**, University of Warmia and Mazury, Olszyn, Poland
Air pollution quality and human health; Contaminant (bio)monitoring and assessment; Ecotoxicology and risk assessment; Environmental management and policy; Human health risk assessment and management; Waste and water treatment; Antibiotic resistance; Biogas production

**Ralf Ludwig**, Ludwig-Maximilians-Universität München (LMU), Munich, Germany
Hydrology; Water resources management; Climate change; Land use change; Extreme events; Modeling; Remote sensing

**Lidia Morawska**, Queensland University of Technology, Brisbane, Queensland, Australia
Air pollution; Air quality; Indoor air pollution; Exposure assessment; Contaminated particulates; VOC; anthropogenic; Characterization; Automotive; Apportionment; Pollution transport; Monitoring: Analytical

**Huu Hao Ngo**, University of Technology Sydney, Sydney, New South Wales, Australia
Water and wastewater treatment and reuse technologies; Alternative water resources; Water management and impact assessment; Solid waste management; Specific green technologies; Water – waste – energy nexus; Greenhouse gas emission control and minimisation

**Jose Julio Ortega-Calvo**, Consejo Superior de Investigaciones Científicas (CSIC), Sevilla, Spain
Biodegradation and biotransformation of organic pollutants in soils and sediments; Bioremediation; Environmental microbiology; Bioavailability and persistence; Risk assessment

**Wei Ouyang**, Beijing Normal University, Beijing, China
Water environment and climate risk; Watershed environment management; Non-point source modeling and control; Diffuse pollution assessment

**Elena Paoletti**, National Research Council of Italy (CNR), Firenze, Italy
Plant health; Plant ecophysiology; Forests; Climate stressors; Air pollution impacts on terrestrial ecosystems; BVOC; Ground-level ozone

**Paulo Alexandre da Silva Pereira**, Mykolo Romerio universitetas (MRU), Vilnius, Lithuania
Soil degradation, Soil erosion, Soil processes, Forest Fires, Spatial Analysis, Mapping, Geostatistics, Ecosystem Services

**Yolanda Picó**, Universitat de València, Valencia, Spain
Media / Habitats: drinking water, water quality, water pollution, rivers, lakes, sediments, watersheds, soils, exposure assessment, human health effects, biomarkers, bioindicators, dietary exposure, food contamination, food safety; Human Health Effects: pesticides, endocrine disruptors, pharmaceutical residues, organics, analytical, surveys

**Charlotte Poschenrieder**, Universitat Autònoma de Barcelona (UAB), Bellaterra, Spain
Plant-Environment Interactions; Plant-Soil Relationships; Salinity; Plant-Microbe Interactions; Plant Toxicology; Crop Production; Plant Natural Adaptation

**Sergi Sabater**, Universitat de Girona, Girona, Spain
River and stream ecology; Biofilm ecology and ecotoxicology; Mediterranean; Water scarcity; Ecosystem functioning; Biodiversity; Conservation of rivers

**Scott C. Sheridan**, Kent State University, Kent, Ohio, USA
Human biometeorology, climate change, synoptic climatology, extreme temperature events

**Filip M.G. Tack**, Universiteit Gent, Gent, Belgium
Heavy metals; Trace element biogeochemistry; Dredged materials; Soil and sediment remediation; Phytoremediation
Kevin Thomas, University of Queensland, Woolloongabba, Queensland, Australia
Contaminants of emerging concern; Non-target analysis; High resolution Mass Spectrometry; Microplastics; Biomonitoring

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 | Sustainable urban development, urban wastes, contaminated land and water, waste management (food, wood, plastic agro, sludge), green remediation, wastewater treatment.

Paola Verlicchi, Università di Ferrara, Ferrara, Italy
Water treatment; Wastewater treatments; Reuse of reclaimed water; Occurrence and removal of pharmaceuticals from (waste)water; Hospital effluent management and treatment; Petrochemical wastewater treatment; Environmental risk assessment

Daniel A. Wunderlin, Universidad Nacional de Cordoba (Argentina), Córdoba, Argentina
Tracing pollutants from their source to foods; Food Integrity, including the evaluation of bioactive compounds in foods; Studying links between food production and environmental pollution

Shuzhen Zhang, Chinese Academy of Sciences (CAS), Beijing, China
soil contamination; Sorption/desorption of organic contaminants; Bioaccumulation and transformation of organic contaminants in the terrestrial environment; Applications of synchrotron-based spectroscopy techniques in environmental chemistry, NOM analysis and effects on contaminant behaviors

Editorial Board

Jésus R. Aboal Viñas, Universidade de Santiago de Compostela, Santiago de Compostella, Spain
Biomonitoring; Moss biomonitoring; Raptor biomonitoring; Algae biomonitoring; PAHs contamination; Heavy metal contamination; Cellular localization of metals; Hydrological fluxes of forest canopies

Souhail R. Al-Abed, U.S. Environmental Protection Agency (EPA), Cincinnati, Ohio, USA
Environmental implication and applications of nanomaterials; Sediment and water remediation; Contaminant (metals and organics) transformations in the environment; Reuse of materials in environmental applications

Alexandros G. Asimakopoulos, Norwegian University of Science & Technology NTNU, Trondheim, Norway
Takashi Azuma, Osaka University of Pharmaceutical Sciences, Osaka, Japan
Pharmaceuticals and personal care products; Hospital effluent; Water environment; Sewage treatment plant; Occurrence and environmental fate; Water treatment system; Water management; Environmental science; Environmental hygiene; Public health

Roya Bahreini, University of California, Riverside, Riverside, California, USA
Aerosol sources; Formation processes; Composition and microphysical properties; Direct and indirect effects on climate

Carlos Barata, IDAEA-CSIC, Barcelona, Spain
Analytical chemistry; Aquatic toxicology; Environmental risk assessment; Toxicogenomics

Roberto Bargagli, Università degli Studi di Siena, Siena, Italy
environmental biogeochemistry, active and passive biomonitoring of persistent contaminants in terrestrial and aquatic ecosystems

Georgios Bartzas, National Technical University of Athens (NTUA), Athens, Greece
Expertise in Waste management; Environmental monitoring and Risk assessment; Life cycle analysis; Soil and Groundwater decontamination; Geochemical/Thermodynamic modelling; Environmental economics

Ivan Bergier, EMBRAPA Brazil, Corumbá, Brazil
Expertise in sustainable development, particularly in the following areas: environmental services, ecology and biogeochemistry of ecosystems and agroecosystems; Bioenergy; Biofuels; Biochar; Remote sensing; Electron microscopy; Applied to nanotechnology, electronics and automation; Climate change adaptation; Mitigation of greenhouse gases emissions

Harald Biester, Technische Universität Braunschweig, Braunschweig, Germany
Biogeochemical cycling of mercury and trace elements; Biogeochemistry of peatlands

Jayanta Kumar Biswas, University of Kalyani, Kalyani, India
Environmental pollution; Water and soil contamination; Biomonitoring; Toxic metal(loid)s; Ecotoxicology; Bioremediation; Environmental microbiology; Ecological engineering; Ecotechnology; Nanobiotechnology; Wastewater treatment

Paul Bradley, U.S. Geological Survey (USGS), Columbia, South Carolina, USA
Drinking Water Exposure; Water Quality; Environmental and Public Health; Contaminants of emerging concern; Pharmaceuticals; Water Reuse; Remediation; Environmental microbiology; Urban and Aquatic Ecology
Satinder Brar Kaur, Institut National de la Recherche Scientifique (INRS), Québec, Quebec, Canada
Wastewater; Wastewater sludge; Treatment; Emerging contaminants; Antibiotics; Fermentation; Value-added bioproducts, such as enzymes, organic acids, platform chemicals, biocontrol agents, biopesticides, butanol and biohydrogen

Bryan W. Brooks, Baylor University, Waco, Texas, USA
Water Quality, Environmental and Aquatic Eco- Toxicology, Risk and Hazard Assessment, Comparative Pharmacology and Toxicology, Environmental Public Health, Harmful Algal Blooms, Green and Sustainable Chemistry, Urban and Aquatic Ecology, Water Reuse.

Giorgio Buonanno, Università degli Studi di Cassino e del Lazio Meridionale, Cassino (FR), Italy
10.020: Air pollution; 10.030: Air quality; 10.040: Indoor air pollution; 70.040: Clean technologies; 80.050: Incineration

Joanna Burger, Rutgers University, Piscataway, New Jersey, USA
Eco-toxicology; Behaviour; Monitoring and assessment; Birds and reptiles

Glòria Caminal Saperas, Consejo Superior de Investigaciones Científicas (CSIC), Barcelona, Spain
Biochemical engineering; Environmental engineering (focused on biodegradation of pollutants by microorganisms or enzymes); Bioreactors; Immobilization; Kinetics

Art Chappelka, Auburn University, Auburn, Alabama, USA
Air pollution and global climate effects to terrestrial ecosystems; Native plant community responses (shifts in diversity) to air pollutants and global climate change; Plant-stress-air pollution/global climate change interactions; Urban ecology and ecosystem services

Da Chen, Jinan University, Gangzhou, China
Environmental chemistry; Analytical chemistry; Ecotoxicology; Persistent organic pollutants; Flame retardants; Pesticides; Mass spectrometry; Gas/liquid chromatography.

Wei Chen, Nankai University, Jinnan District, Tianjin, China
Nanoparticles; Nanomaterials; Adsorption; Reactivity; Transport; Remediation; Groundwater; Soil; Organic contaminants

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Biofilm; Stream ecology; Biomonitoring; Urban streams; Citizen science

Xinyi (Lizzy) Cui, Nanjing University, Nanjing, China
Organics; Bioavailability

Rui da Silva Coutinho, Universidade Dos Açores, Ponta Delgada, Portugal
Hydrogeology, Volcanology, Natural Hazards, Water Resources Management, Environmental Geology.

Guido Del Moro, National Research Council of Italy (CNR), Bari, Italy
novel processes for wastewater treatment, aerobic granular biomass technologies, integration of chemical oxidation and biological processes for industrial wastewater, advanced oxidation processes, electro-degradation processes, wastewater treatment modelling

José L. Domingo, Universitat Rovira i Virgili, Reus, Catalonia, Spain
Environmental health; Risk assessment; Persistent organic pollutants; Metals; Food contaminants; Toxicology

Zhaozhong Feng, Chinese Academy of Sciences (CAS), Beijing, China
Air pollutant; BVOCs; Crop growth; Forest health; N deposition; N use and allocation; Ozone pollution; Photosynthesis and C cycle; Water use efficiency; Urban environment and forestry

Jose Angel Fernández, Universidad de Santiago de Compostela, Santiago de Compostela, Spain
Air pollution; Air quality; Water pollution; Rivers; Ecological effects; Bioavailability; Bioindicators; Aquatic toxicology; Heavy metals; Biomagnification; Bioaccumulation; Surveys; Moss; Biomonitoring; Western Europe

Bo Gao, China Inst. of Water Resources and Hydropower (IWHR), Beijing, China
Geochemistry of trace metals in environment; Water and sediment transport; Large-scale watershed management

Ruben Aldaco Garcia, Universidad de Cantabria, Santander, Spain
Life Cycle Assessment; Circular Economy; Water-Energy-Food Nexus; Bioeconomy; Industrial Ecology.

Alejandro García-Gil, Instituto Geológico y Minero de España (IGME), Zaragoza, Spain
Urban hydrogeology; Groundwater quality; Shallow geothermal exploitation impacts on water resources; Groundwater management; hydrogeochemistry; River-groundwater interaction; Groundwater flow and reactive transport numerical modelling; Groundwater microbiology; Emerging organic contaminants

Jorge Gardea-Torresdely, University of Texas at El Paso, El Paso, Texas, USA
Applications of spectroscopy techniques in environmental chemistry; Phytoremediation; Novel methods for the bioproduction of nanoparticles; Development of analytical methods to detect nanomaterials; Study of the fate of nanoparticles in the environment; Applications of nanotechnology to clean water
Leobardo Manuel Gómez Oliván, Universidad Autónoma del Estado de México, Toluca, Mexico
Aquatic toxicology; Fish toxicity; Emerging contaminants; Metals; Genotoxicity; Citotoxicity; Embryotoxicity; Teratogenesis; Oxidative stress; Biomarkers

Daren Gooddy, British Geological Survey, Oxfordshire, England, UK
Groundwater; Biogeochemical cycles; Residence time indicators

Andrew Gray, University of California, Riverside, Riverside, California, USA
Sediment transport; Hydrology; Water quality; Plastic pollution; Watershed sediment dynamics; Sedimentology; Paleoenvironmental analysis

John Gulliver, University of Leicester, Leicester, England, UK
Noise and air pollution exposure assessment; Air pollution monitoring; Dispersion modelling; Land use regression modelling; Geographical information systems; Geo-statistical techniques (Kriging etc.); Spatial analysis of environmental and health data; Geographical studies of environment and health; Health risk assessments

Ying Guo, New York State Department of Health (NYSDOH), Albany, New York, USA
My research interests: (1) biomonitoring organic chemicals in human body, such as phthalates, PAHs, organophosphate pesticide and environmental phenols; (2) monitoring organic pollutants in environment, e.g., persistent organic pollutants; (3) Analytical method development for novel organic contaminants in various environmental matrix. Recently, I am working on Exposome to women with fertility problems.

Gary Hardiman, Queens University of Belfast, Belfast, UK
Computational biology; Epigenetics; Endocrine disruption; Systems biology; Biomarkers of exposure and human health risk assessment; Diagnostic tool development

Neil S. Harris, University of Alberta, Edmonton, Alberta, Canada
Expertise: cadmium, micronutrients, membrane transporters, trace metal uptake and translocation in plants

Gerard Hoek, Universiteit Utrecht, Utrecht, Netherlands
Exposure assessment; Air pollution modelling; Environmental epidemiology

Peter Hooda, Kingston University, Kingston upon Thames, England, UK
Biogeochemical Cycling of Nutrients and Environmental Contaminants; Catchment Water Quality; Land Degradation; Climate Change Impacts on Soil Processes; Emerging Contaminants

Kiril Hristovski, Arizona State University, Mesa, Arizona, USA
Nanomaterials; Water/Wastewater Quality and Treatment; Solid and Hazardous Waste; Developing Countries

Hafiz M. N. Iqbal, Instituto Tecnológico y de Estudios Superiores de Monterrey, Monterrey NL Mexico, Mexico
Environmental Engineering; Bioengineering; Biomedical Engineering; Bioremediation; Emerging contaminants; Wastewater treatment; Biomaterials; Bio-catalysis; Enzymes; Enzyme-based pollutant degradation; Immobilization; Toxic heavy elements; Liquid and solid waste management; Valorization of agro-industrial wastes and by-products

Rong Ji, Nanjing University, Nanjing, China
Organics; Terrestrial; Biodegradation; Environmental process; Radiotracer

Sunny Jiang, University of California, Irvine, California, USA
Pathogens; Water treatment; Membrane fouling; Microbial water quality; Risk assessments; Water reuse, Virus, bacteria

Weiying Jiang, California Environmental Protection Agency, Sacramento, California, USA
Organics; Pesticides; Dust; Analytics

Wei Jiang, Shandong University, Qingdao, China
Environmental risk of nanomaterials; Nano-bio interaction; Cell membrane damage; Cytotoxicity; Nanoparticle transport

Begoña Jiménez, Consejo Superior de Investigaciones Científicas (CSIC), Madrid, Spain
Persistent Organic Pollutants (POPs); Dioxins; PCBs; Fate of POPs; Contaminants of emerging concern; Organic pollutants in aquatic and terrestrial ecosystems; Bioindicators; Marine mammals; Air Pollution; Environmental chemistry; Monitoring

Sarah Jovan, Pacific Northwest Forest Inventory and Analysis (PNW-FIA), Portland, Oregon, USA
My greatest expertise is in using lichen community composition for monitoring and quantifying nitrogen pollutants. But I also work with lichen/moss tissue assays (for N, S, metals, PAHs), landscape-scale community-based gradient modeling more generally, and biomass modeling for ground-dwelling non-vascular communities in boreal and tundra systems.

Anna Jurado, Technische Universität Dresden, Dresden, Germany
Aquifer recharge quantification; Emerging organic contaminants; Greenhouse gases; Groundwater quality; Groundwater management; Urban groundwater; River-groundwater interaction; Managed aquifer recharge; Numerical modelling; Quantitative hydrogeology

Athanasios Katsogiannis, European Commission, Ispra (VA), Italy
Development and optimisation of analytical chemistry techniques and sampling methodologies to the source understanding; Occurrence and fate of organic contaminants in all environmental compartments, including indoor air, atmospheric air, soil, water and/or wastewater

Nerantzis Kazakis, Aristotle University of Thessaloniki, Thessaloniki, Greece
Groundwater modelling; Groundwater vulnerability; Hydrogeochemistry; Hydrogeophysics; Isotope hydrology; Water resources management; Floods; Climate change impacts on water resources; Managed Aquifer Recharge

M.B. Kirkham, Kansas State University, Manhattan, Kansas, USA
Soil-plant-water relations; Drought stress; Elevated carbon dioxide; Uptake of heavy metals by plants

Charles Knapp, University of Strathclyde, Glasgow, Scotland, UK
Microbial ecology; Bacteria; Microorganisms; Wastewater; Surface water; Nutrients; Eutrophication; Antibiotic resistance; Antimicrobial resistance; Molecular ecology

Dana Kolpin, U.S. Geological Survey (USGS), Iowa City, Iowa, USA
Endocrine disruptors; Pharmaceutical residues; Non-point; Pollution transport; Chemical transport

Prashant Kumar, University of Surrey, Surrey, England, UK
Air quality and health; Airborne ultrafine and nanoparticles; Exposure assessment; Low-cost pollution sensing; Exhaust and non-exhaust emissions; Air pollution control; Grey-grey infrastructure interactions; Indoor air quality; Dispersion modelling; Urban nexus; Future cities/megacities

Keisuke Kuroda, Toyama Prefectural University, Imizu, Japan
Subsurface geochemistry and mitigation technologies of contaminants of emerging concern (CECs)

James Lam, The Education University of Hong Kong, Tai Po, New Territories, Hong Kong
POPs; Emerging contaminants; Risk assessment

Dimitra Lambropoulou, Aristotle University of Thessaloniki, Thessaloniki, Greece
Emerging Contaminants, Organic Pollutants, Transformation Products, Environmental fate, Sample preparation and analysis, Advanced mass spectrometry techniques, Environmental monitoring and risk assessment, water quality, Treatment processes for water and wastewaters

Juying Li, Shenzhen University, Shenzhen, Guangdong, China
Organics; Bioavailability; Isotopes; Analysis; Degradation; Soil-plant system; Transformation; Toxicity

Shibin Li, Syngenta Crop Protection, Greensboro, North Carolina, USA
Environmental toxicology; Regulatory toxicology; Ecotoxicology; Exposure science; Risk assessment; Product safety

Daohui Lin, Zhejiang University, Hangzhou, China
Nanomaterials; Ecotoxicity; Nanotoxicity; Bioavailability; Colloidal behavior; Sorption

Kunde Lin, Xiamen University, Xiamen City, Fujian 361102, China
Organic contaminants; Active sampler

Xiaobo Liu, The University of Hong Kong, Hong Kong SAR, China
Microbial biofilms; Biocatalysis for biosynthesis; Biodegradation of cultural heritages; Microbial electrochemistry; Extracellular electron transfer; Bacterial syntrophy; Environmental microbiology; Fermentation engineering; Biofuel & biomass; Food microbiology and processing; Microbial ecology

Rasha Maal-Bared, EPCOR Water Services, Edmonton, Alberta, Canada
Applied and environmental microbiology; Freshwater microbiology; Drinking water and wastewater; Microorganisms; Pathogens; Biofilms; Antibiotic resistance; Water quality; Food safety; Monitoring

Sheila Macfie, Western University, London, Ontario, Canada
Metal toxicity in plants; Metal localization in plants; Rhizosphere chemistry

Sonia Manzo, ENEA, Portici, Italy
Ecotoxicology; Nanomaterials; Aquatic environment; Seawater; Microalgae; Seaurchin; Risk assessment

Adriaan Albert Markus, Deltares, Delft, Netherlands
Water quality modelling; Numerical modelling and programming in various languages (notably Fortran, in relation to numerical modelling); Transport and fate of nanoparticles and microplastics in the aquatic environment

Ioannis Matiatos, International Atomic Energy Agency (IAEA), Vienna, Austria
Isotope hydrology; Water resources management; Hydrogeochemistry; Groundwater modeling; Applied statistical modeling; Climate change impact; Environmental monitoring; Water quality

Janine McCartney, HHC Services Inc., Lester, Pennsylvania, USA
Chemical Exposures: Toxic tort, Biomarkers, Industrial Hygiene, Employee chemical exposures and community chemical exposures, Safety Engineering; Arc Flash Analyses and Accidents; Electrical Safety; Falls; Equipment & Machinery; Human Factors; Accident Investigation/ Reconstruction; OSHA; Guarding; Construction; Industrial & Premises Accidents; Oil & Gas Extraction; Pipeline Safety and Refinery Safety; Lead and Electrocution
Thomas Meinelt, Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany
Alternative treatments in aquaculture; Impact (and interaction) of humic substances on environment and animals.

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

Jacek Namieśnik, Technical University of Gdansk, Gdansk, Poland
Environmental analytics and monitoring; Food analysis; QA/QC systems; Green analytical chemistry; Envirometrics

Howard S. Neufeld, Appalachian State University, Boone, North Carolina, USA
The effects of ozone on plants; The role of anthocyanins in vegetative tissues in plants; Climate change impacts on plants in the southern Appalachian mountains; Measuring plant gas exchange and plant water relations, using the Li-Cor 6400 and 6800 gas exchange systems, a Sperry hydraulic conductivity apparatus and Scholander pressure chamber, as well as a variety of other instrumentation (including leaf fluorescence meter) to monitor plant responses to environmental stresses

Hong-Gang Ni, Peking University, Shenzhen, China
Organic pollutants (persistent organic pollutants and environmental molecular markers); Environmental model (process and impact); Human exposure and health risk.

Avelino Núñez-Delgado, Universidade de Santiago de Compostela, Lugo, Spain
Diffuse pollution; Emerging pollutants; Sorption and desorption; Waste recycling; Water treatment systems

David O’Connor, Tsinghua University, Beijing, China
Eco-efficient construction and building materials; Construction and demolition wastes; Geopolymers; Waste recycling; Durability; Mechanical properties; Alkali-activated cement-based binders; Concrete nanotechnology

Anastasia K. Paschalidou, Democritus University of Thrace, Orestiada, Greece
Air pollution meteorology; Urban meteorology; Dust transportation; Climate change; Environmental health; Environmental epidemiology; Biometeorology; Synoptic climatology; Dispersion Modeling; Air Quality Indices

Momir Paunovic, University of Belgrade, Beograd, Serbia
Hydrobiology; Aquatic macroinvertebrates; Freshwater mollusks; Invasive aquatic species; Feeding of benthivorous fish; Functional analyses of aquatic ecosystems; Relation of aquatic biota and environmental variables; Bio-monitoring in freshwater; Genotoxicological investigations on aquatic organisms; Microbiology of freshwaters

Alexandra Pavlidou, Hellenic Centre for Marine Research, Mavro Lithari, Anavyssos, Greece
Eutrophication and eutrophication indexes according to WFD and MSFD; Biogeochemical cycles and nutrient dynamics in marine environments (coastal and open sea)

Jian Peng, Peking University, Beijing, China
Toxicokinetic modelling; Toxicodynamic modelling; Ecotoxicology; Mixtures; Integrated risk assessment

Tiina Reponen, University of Cincinnati, Cincinnati, Ohio, USA
Indoor air pollution; Exposure assessment; Bacteria; Fungi; Microorganisms; Microbiome; Biohazards; Monitoring

Anacleto Rizzo, IRIDRA, Florence, Italy
Constructed Wetland; Nature-Based Solution for Wastewater Treatment; Sustainable Water Management; Sustainable Sanitation Modelling; Sustainable Urban Drainage Systems; Water Sensitive Urban Design; Low Impact Development; Green Infrastructure; Ecosystem Service

Teresa Rocha-Santos, Universidade de Aveiro, Aveiro, Portugal
Micro(nano)plastic; Plastic; Microfibres; Organic contaminants; Marine monitoring; Environmental monitoring; Wastewater treatment; Biodegradation of microplastics; Sensors; Biosensors

David Roser, UNSW Australia, Sydney, New South Wales, Australia
Pesticides, soil, water, organic amendments; Adsorption, desorption, degradation, mobility; Soil and water contamination by pesticides and emerging pollutants; Behaviour of pesticides in soils; Influence of organic amendments
**Nan Sang**, Shanxi University, Taiyuan, Shanxi, China
Environmental exposure and health risk of chemicals; Biological effect and toxic mechanism of environmental chemicals

**Ralf Bernhard Schäfer**, Universität Koblenz-Landau, Landau, Germany
Water quality; Rivers; Ecological effects; Chemicals; Aquatic toxicology; Invertebrates; Microorganisms; Modelling; Statistics

**Jianwen She**, California Department of Public Health, Richmond, California, USA
Environmental analysis; Persistent organic chemical analysis; Biomonitoring; Source apportionment; Non target analysis; Endocrine disruptors; Mass spectrometry

**Wei Shi**, Nanjing University, Nanjing, China
Environmental fate of emerging organic pollutants; Effect directed analysis based on instrumental analysis and bioassays

**Andreas Skouloudis**
**Athanasios S. Stasinakis**, University of the Aegean, Mytilene, Greece
wastewater treatment and reuse; Sludge management; Emerging contaminants; Aquatic pollution; Biodegradation; Ecotoxicity; Risk assessment

Groundwater pollution; Agrochemicals; Emerging contaminants in groundwater; Industrial contaminants in groundwater; Shale gas exploitation

**Qian Sui**, East China University of Science and Technology, Shanghai, China
Pharmaceuticals and personal care products; Micro-plastics; Emerging contaminants; Analytical methods; Environmental behaviors; Source apportionment; Advanced oxidation processes; Treatment processes

**Piotr Szefer**, Medical University of Gdańsk, Gdańsk, Poland
Biomagnification of major and minor elements along the sequential trophic levels of the marine biosphere; Bioavailability of metallic pollutants to benthic organisms as potential biomarkers in relation to the adjacent sediments and sea water; Analytical and chemometric assessment of food quality

**Phong Thai**, University of Queensland, Woolloongabba, Queensland, Australia
Wastewater analysis; Sewer-based epidemiology; Air quality monitoring; Air pollution epidemiology; Environmental monitoring

**Maria Concetta Tomei**, Consiglio Nazionale delle Ricerche (CNR), Rome, Italy
Processes and Technologies for Urban and Industrial Wastewater Treatment; Modelling and Control of Biological Processes, Removal of Xenobiotic Compounds, Two-Phase Partitioning Bioreactors (TPPBs); Sludge Treatment; Soil Bioremediation

**Ashley Townsend**, University of Tasmania, Hobart, Tasmania, Australia
Environmental analysis; Geochemistry; Oceanography; Marine and Antarctic science; Materials science; Human health areas

**Richard Van Curen**, University of California, Davis, Davis, California, USA
Aerosol Science, atmospheric pollution, climate science, atmospheric modeling

**Fang Wang**, Chinese Academy of Sciences (CAS), Nanjing, China
Soil pollution and remediation; Persistent organic pollutants; Polycyclic aromatic compounds; Antibiotics; Antibiotic resistance; Phthalate ester; Emerging Contaminants; Biochar; Bioavailability; Biodegradation and biotransformation of organic pollutants; Biofilms; Signaling molecules; Analytical method; Environmental monitoring

**Wei (Vivienne) Wang**, Zhejiang University, Hangzhou, China
Radio-isotopic tracing and photographing; Pesticides; Organic pollutants; Bioavailability; Degradation; Metabolism: chemical analysis

**Xiaoping Wang**, Chinese Academy of Sciences (CAS), Beijing, China
Global cycling of POPs; Mechanism of long range atmospheric transport; POPs accumulation in polar region; Risk assessment of POPs, Brown carbon; Emerging contaminants; Tibet Plateau

**Shaun Watmough**, Trent University, Peterborough, Ontario, Canada
Ecosystem biogeochemistry; ecological impact of trace metals; ecosystem acidification; air pollution impacts on ecosystems

**Jianming Xue**, New Zealand Forest Research Institute Ltd. (Scion), Christchurch, New Zealand
Biowaste and wastewater reuse; Emerging contaminants in biowaste and soil; Fate and transport of contaminants in terrestrial ecosystems; Antibiotic pollution and remediation; Biochar for environmental management; Plant uptake and translocation of contaminants; Plant-soil-microbe interactions; Phytoremediation of contaminated soils and water; Biowaste management and climate change

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Persistent organic pollutants; Brominated and phosphate flame retardants; Heavy metal pollution; Aerosols; South Asia; PM2.5; Solid waste; E-waste; Himalayas

**Kun Yang**, Zhejiang University, Hangzhou, China
Organics, adsorption, organic matter

**Samantha Ying**, University of California, Riverside, Riverside, California, USA
Trace elements; Soil; Biogeochemistry; Redox processes; X-ray spectroscopy

**Jing You**, Jinan University, Guangzhou, China
Organics; Ecotoxicology; Bioavailability; Sediment; Pesticides

**Teng Zeng**, Syracuse University, Syracuse, New York, USA
Occurrence and fate of organic micro-pollutants; Formation and control of disinfection by-products

**Chaosheng Zhang**, National University of Ireland, Galway, Ireland
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**Xiaowei Zhang**, Nanjing University, Nanjing, China
Toxicogenomics of chemicals, Ecogenomics of pollution, Ecotoxicology

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PAHs; Organic matter; Marine environments
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INTRODUCTION
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Science of the Total Environment is an international journal for publication of original research on the total environment, which includes the atmosphere, hydrosphere, biosphere, lithosphere, and anthroposphere.

totalenvironment.gif-Total Environment

The total environment is characterized where these five spheres overlap. Studies that focus on at least two or three of these will be given primary consideration. Papers reporting results from only one sphere will not be considered. Field studies are given priority over laboratory studies. The total environment is studied when data are collected and described from these five spheres. By definition total environment studies must be multidisciplinary.

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