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.

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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.

Examples of data from the five spheres are given below:

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Subject areas may include, but are not limited to:

- Agriculture, forestry, land use and management
- Air pollution quality and human health
- Contaminant (bio)monitoring and assessment
- Ecosystem services and life cycle assessments
- Ecotoxicology and risk assessment
- Emerging fields including global change and contaminants
- Environmental management and policy
- Environmental remediation
- Environmental sources, processes and global cycling
- Groundwater hydrogeochemistry and modeling
- Human health risk assessment and management
- Nanomaterials in the environment
- Noise in the environment
- Persistent organic pollutants
- Plant science and toxicology
- Remote sensing
- Stress ecology in marine, freshwater and terrestrial ecosystems
• Trace metals and organics in biogeochemical cycles
• Waste and water treatment

The editors discourage submission of papers which describe results from routine surveys or monitoring programs, studies which are local in scope, laboratory experiments, hydroponic or pot studies measuring biochemical/physiological endpoints, food science studies, screening of new plant species for phytoremediation, testing known chemicals in another setting, and experimental studies lacking a testable hypothesis.

The abstract, highlights and conclusions of papers in this journal must contain clear and concise statements as to why the study was done and how readers will benefit from the results. Articles submitted for publication in *Science of the Total Environment* should establish connections among research findings with implications for environmental quality, ecological health, and/or human health.

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Water pollution and treatment, environmental biotechnology, resource recovery from wastes, bioelectrochemical systems, bioenergy, membrane technology, bioremediation, and desalination.

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Air pollution attributed effects and risks on chronic diseases; Underlying pathophysiological mechanisms; Health intervention strategies; Environmental epidemiology; Exposure assessment methodology

Pavlos Kassomenos, University of Ioannina, Ioannina, Greece

Ralf Ludwig, Ludwig-Maximilians-Universität München (LMU), München, Germany
Air pollution, air quality, indoor air pollution, exposure assessment, contaminated particulates, VOC, anthropogenic, characterization, automotive, apportionment, pollution transport, monitoring, analytical

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

Charlotte Poschenrieder, Universitat Autònoma de Barcelona (UAB), Bellaterra, Spain
Water environment and climate risk, diffuse pollution assessment

Elena Paoletti, National Research Council of Italy (CNR), Firenze, Italy
Plant ecophysiology Effects of pollutants (ozone, UV-B, metals, acidic deposition, and surfactants) and climate change (drought, frost) on forests and trees (gas exchange, water relations, cuticles, roots, ectomycorrhizas, growth and pollen)

Charlotte Poschenrieder, Universitat Autònoma de Barcelona (UAB), Bellaterra, Spain

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

Filip Tack, Universiteit Gent, Gent, Belgium
Heavy metals, trace element biogeochemistry, dredged materials, soil and sediment remediation, phytoremediation.

Kevin Thomas, University of Queensland, Queensland, Australia
Water treatment

Daniel A. Wunderlin, Universidad Nacional de Córdoba, Córdoba, Argentina

Author Information Pack 2 Apr 2018 www.elsevier.com/locate/scitotenv
Environmental implication and applications of nanomaterials; Sediment and water remediation; Contaminant (metals and organics) transformations in the environment; Reuse of materials in environmental applications

**Takashi Azuma**, Osaka University of Pharmaceutical Sciences, Osaka, Japan

**Roya Bahreini**, University of California at Riverside, Riverside, California, USA

Aerosols, air pollution

**Carlos Barata**, IDAEA-CSIC, Barcelona, Spain

Analytical chemistry, aquatic toxicology, environmental risk assessment, and 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 decontamination, Geochemical and Thermodynamic modelling and Groundwater pollution

**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, and electron microscopy applied to nanotechnology, electronics and automation, climate change adaptation and mitigation of greenhouse gases emissions.

**Harald Biester**, Technische Universität Braunschweig, Braunschweig, Germany

Geoecology, sediment cores, mercury, trace metals

**Julian Blasco**, Instituto de Ciencias Marinas de Andalucía (CSIC), Puerto Real (Cádiz), Spain

Paul Bradley, U.S. Geological Survey (USGS), Columbia, South Carolina, USA

**Cristina M. Branquinho**, Universidade de Lisboa, Lisbon, Portugal

Air quality, water quality, forests, ecological effects, bioavailability, bioindicators, PAHs, Dioxin, nutrients, copper, natural, anthropogenic, diffuse, apportionment, bioremediation, restoration, climate change, eutrophication, desertification, deforestation, monitoring, sequential extraction, remote sensing, moss biomonitoring, lichens, tree rings (dendrochronology), historical monitoring, Africa, Western Europe, Mediterranean region, South America

**Satinder Brar Kaur**, Institut National de la Recherche Scientifique (INRS), Québec, Quebec, Canada

Development of finished products (formulations) of wastewater and wastewater sludge based value-added bioproducts, such as enzymes, organic acids, platform chemicals, biocontrol agents, biopesticides, butanol and biohydrogen

**Birgit Braune**, Carleton University, Ottawa, Ontario, Canada

Arctic, marine ecosystems, birds, metals, organo-compounds, biomonitoring, biological effects.

**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**, University of Cassino, Cassino (FR), Italy

10.020: air pollution, 10.030: air quality, 10.040: indoor air pollution, 70.050: clean technologies, 80.050: incineration

**Joanna Burger**, Rutgers University, Piscataway, New Jersey, USA

Eco-toxicology, behaviour, monitoring and assessment, birds and reptiles

**Glòria Caminal**, Universitat Autònoma de Barcelona (UAB), Barcelona, Spain

Biochemical engineering and environmental engineering this last focused on biodegradation of pollutants by microorganisms or enzymes. Bioreactors, immobilization, kinetics, etc.

**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, Guangzhou, 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, toxicity

**Joaquín Cochero**, Universidad Nacional de La Plata, La Plata, Buenos Aires, Argentina

**Rui Coutinho**, Universidade Dos Açores, Ponta Delgada, Portugal

Hydrogeology, Volcanology, Natural Hazards, Water Resources Management, Environmental Geology.

**Xinyi (Lizzy) Cui**, Nanjing University, Nanjing, China

Organics, bioavailability

**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
Margaret Eng, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
Avian toxicology; wildlife toxicology; utilizing molecular and physiological tools in ecotoxicology; long-term effects of early developmental exposure; neurological and behavioral effects of contaminants; flame retardants, pesticides, dioxin-like compounds, methylmercury.

Jose Angel Fernández, Universidade 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

Jean-Francois Focant, Université de Liège, Liège (Sart-Tilman), Belgium
exposure assessment, dietary exposure, food contamination, Human Health Effects, POPs, VOC, PCBs, Dioxin, analytical, measurement methods

Jorge Gardea-Torresdey, 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, and applications of nanotechnology to clean water among others

Leobardo Manuel Gomez Olivan, New Mexico State University, Toluca, Mexico

Daren Gooddy, British Geological Survey, Oxfordshire, England, UK
Sediment transport, hydrology

John Gulliver, Imperial College London, London, 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. More broadly: 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.

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

Roy M. Harrison, University of Birmingham, Birmingham, UK
Air Pollution; Atmospheric Science; Environmental Health; Environmental Chemistry; Aerosol Science
Gerard Hoek, Utrecht University, Utrecht, Netherlands
exposure assessment, air pollution modeling, 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, Tempe, Arizona, USA
Environmental Applications and Implications of Nanomaterials; Water/Wastewater Quality and Treatment; Solid and Hazardous Waste; Management of Environmental Systems in Developing Countries.

Rong Ji, Nanjing University, Nanjing, China
Organics, terrestrial
Sunny Jiang, University of California, Irvine, California, USA
Pathogens, water treatment
Weiying Jiang, California Environmental Protection Agency, Sacramento, California, USA
Organics, pesticides, dust, analytics

Begoña Jiménez, Consejo Superior de Investigaciones Científicas (CSIC), Madrid, Spain

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

Mary Beth 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
ecological effects, bacteria, microorganisms, wastewater, nutrients, eutrophication

D. Kolpin, Iowa City, Iowa, USA

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

Prashant Kumar, University of Surrey, Guildford, Surrey, 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, National Institute for Environmental Studies, Fukushima, 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

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

Joakim Larsson, Göteborgs Universitet, Göteborg, Sweden
aquatic toxicology, pharmaceutical residues

Juying Li, Shenzhen University, Shenzhen, Guangdong, China
Organics, bioavailability, isotopes, analysis

Shibin Li, U.S. Environmental Protection Agency (EPA), Duluth, Minnesota, USA
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Daohui Lin, Zhejiang University, Hangzhou, China
Environmental behavior of pollutants; Environmental evaluation; Ecotoxicity.

Kunde Lin, Xiamen University, Xiamen City, Fujian 361102, China
Organics, biosynthesis, catalysis

Weiping Liu, Zhejiang University, Hangzhou, China
Organics, monitoring, human health, ecotoxicology

Xiaobo Liu, The University of Hong Kong, Hong Kong SAR, China
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Sheila Macfie, Western University, London, Ontario, Canada
Metal toxicity and tolerance in plants; Synchrotron radiation techniques; Rhizosphere chemistry

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

A. Markus, Deltares, Delft and University of Amsterdam, The Netherlands

Jonathan Martin, University of Alberta, Edmonton, Alberta, Canada
Analytical environmental chemistry, perfluorinated compounds, bioaccumulation, toxicology and environmental chemistry

Ioannis Matiatos, International Atomic Energy Agency (IAEA), Vienna, Austria
isotope hydrology, water resources management, hydrogeochemistry, groundwater modeling, applied statistical modeling, climate change impact and environmental monitoring

Janine McCartney, HHC Services Inc., Lester, Pennsylvania, USA

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, National Water Research Institute (NWRI), 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
Kazakis Nerantzis, Aristotle University of Thessaloniki, Thessaloniki, Greece
Groundwater modelling; Groundwater vulnerability; Hydrogeochemistry; Hydrogeophysics; Isotope hydrology; Water resources management; Floods; Climate change impacts on water resources

Howard S. Neufeld, Appalachian State University, Boone, North Carolina, USA
1. Over 25 years of research on the effects of ozone on plants 2. Research on the role of anthocyanins in vegetative tissues in plants 3. Climate change impacts on plants in the southern Appalachian mountains 4. My technical expertise resides in measuring plant gas exchange and plant water relations, using the Li-Cor 6400 gas exchange system, 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.

Huu Hao Ngo, University of Technology Sydney, Ultimo, 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 and greenhouse gas emission control and minimisation.

Hong-Gang Ni, Peking University, Shenzhen, China
His research interests focus on the environmental behavior and fate, human exposure and health risk of organic pollutants. My research interests focus on the environmental behavior and fate, human exposure and health risk of organic pollutants. My personal keywords: organic pollutants (persistent organic pollutants and environmental molecular markers); environmental model (process and impact); human exposure and health risk.

Fernando Pacheco Torgal, University of Minho, Guimarães, Portugal

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 and 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

Alexandre R. Péry, AgroParisTech, Paris, France
Toxicokinetic modelling; Toxicodynamic modelling; Ecotoxicology; Mixtures; Integrated risk assessment

Maria Pignata, Universidad Nacional de Cordoba (Argentina), Cordoba, Argentina
Human Health Effects: pesticides, endocrine disruptors, pharmaceutical residues, organics, analytical, surveys

Xavier Querol, Consejo Superior de Investigaciones Científicas (CSIC), Barcelona, Spain
Environmental geochemistry; Air quality; Atmospheric aerosols; Tropospheric ozone; Black carbon; Ultrafine particles; Metals; Organic pollutants; Inorganic gaseous pollutants, NO2, NO, NOx, SO2, SO3, CO, NH3; Source apportionment; Urban and regional pollution; Atmosphere and climate change; Air quality policy; Mobile, industrial, domestic and agricultural emissions of air pollutants; Leaching of industrial wastes; Impact of mining on environment; Recycling of industrial wastes; Coal use related pollution

Clemens Reimann, Norges geologiske undersøkelse - NGU, Trondheim, Norway
Geochemistry, Environmental Geochemistry, Biogeochemistry, Hydrogeochemistry, Regional Geochemistry, Geochemical mapping, Critical Zone Research, Soil chemistry

Eric Reiner, Ontario Ministry of the Environment, Toronto, Ontario, Canada
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Tiina Reponen, University of Cincinnati, Cincinnati, Ohio, USA
Indoor air pollution, exposure assessment, bacteria, microorganisms, biohazards, monitoring

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Spatial analysis of environmental variables and health; Heavy metals, phosphorus, organic carbon in soils/sediments; Precision Agriculture; Diffusive gradients in thin films (DGT)

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Organics, ecotoxicity, bioavailability, analysis

**Xiaowei Zhang**, Nanjing University, Nanjing, China
Toxicogenomics of chemicals, Ecogenomics of pollution, Ecotoxicology

**Yong Zhang**, Xiamen University, Xiamen City, Fujian 361102, China
PAHs, organic matter, marine environments
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INTRODUCTION
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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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