

American Chemical Society
Division of Environmental Chemistry
Call for Papers

ACS Fall 2022 – Sustainability in a Changing World
Chicago, Illinois – August 21-25, 2022

Dear Colleagues,

On behalf of the ACS Division of Environmental Chemistry, it is my pleasure to invite you to share your recent research and results in the Division of Environmental Chemistry at the American Chemical Society National Meeting in Chicago, Illinois. ENVR has joined with the ACS Committee on Environmental Improvement (CEI) to host thematic programming for this meeting. ACS Fall 2022 will include in-person, virtual, and hybrid technical programming.

Abstract Submission Deadline: **March 29, 2022**. Please submit abstracts to the Division of Environmental Chemistry at <http://MAPS.ACS.org>. Abstracts will be accepted for oral and poster presentation in each symposium unless otherwise noted. Symposium details are available at <https://callforabstracts.acs.org/acsfall2022>.

Sincerely,
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ACS National Meeting Thematic Symposia: Sustainability in a Changing World

Electrochemical Materials & Interfaces for Environmental & Sustainability Challenges

Organizers: Taeyoung Kim, Xiao Su, Chris Arges

This symposium focuses on how materials and interfaces in electrochemical systems enable efficient separation, recovery, remediation, detection, and conversion to mitigate traditional and emerging environmental problems for a more sustainable future. Both fundamental and practical studies from experiments, simulations, and theory investigating these topics are encouraged.

Environmental Justice: Achieving Global Equity through Green and Sustainable Chemistry

Organizers: Jane Wissinger, Edward Brush, Jillian Goldfarb

Why does Environmental Justice belong at an ACS National Meeting? Starting with that provocative question, the goal of this unique symposium is to bring together all sectors of the chemistry enterprise to listen, learn, and reflect on achieving global equity through chemistry. The issues related to environmental justice are connected to key sustainability challenges, as well as many of the UN Sustainable Development Goals. We will hear from national and regional leaders as we define Environmental Justice and identify legacy and emerging issues. This will set the stage for contributed talks from all sectors of the chemistry enterprise to hear how chemists and chemical engineers can contribute solutions through green and sustainable chemistry in education, academic and industrial research, and policy, including interdisciplinary and

international collaboration. This symposium will serve as a path forward for the chemistry enterprise, and inspire participants to advocate and take action.

Holistic Management Approach to Emerging Micropollutants in the Environment & Biological Systems

Organizers: Hyunook Kim

The symposium's specific aims are to: 1) look at recent developments in mitigation strategies for micropollutants in the environment; 2) provide novel results that could aid in the assessment and monitoring of the potential toxicity of micropollutants; 3) look into the interactions of micropollutants in abiotic and biotic systems and investigate how physicochemical and biological processes affect micropollutants that are released into the environment; 4) identify the transformation and transport pathways of micropollutants in the environment, in animals, in humans, and in cells, which will help in determining the ultimate impact of micropollutants on health and the environment; and 5) offer a forum to discuss sustainable remediation applications for micropollutants.

Novel Separations & Reactive Processes for Sustainable Water Treatment

Organizers: Jessica Ray, William Tarpeh

Novel materials and physicochemical processes for water treatment. We aim to gather research papers across diverse disciplines including environmental engineering, chemical engineering and materials science to encourage discussion and technology transfer and dissemination. Research describing incorporation of new materials or processes in existing water treatment infrastructure, or life-cycle assessments of proposed technologies are also welcome.

Platinum Group Metal-based Sustainable Catalysts for Emission Control & Efficient CH₄ Conversion

Organizers: Pranaw Kunal

Platinum group metals (PGMs) are at the core of most catalytic processes ranging from the synthesis of fine chemicals to large scale production of commodity substrates and products. The transportation sector is the major consumer of PGMs. As trends move toward electrifying transportation, changes are expected in PGM synthesis, use and recycling/sustainability. This trend and resulting marketing factors drive the need for exploring sustainable approaches to using these metals efficiently, including PGM dilution and substitution during synthesis. Not only synthetic aspects of such materials need to be understood but also sustainable chemistries such as efficient conversion/activation of CH₄ in addition to existing emission control challenges associated with C- and N-oxide abatement must be increasingly addressed, especially as methane is a rising concern. This symposium invites contributions on any of these topics from researchers across academia, national laboratories, and industrial sectors for facilitating a well-rounded discussion of the field. Work can be both experimental and theoretical in nature.

Recent Advances in PFAS Research & Environmental Sustainability

Organizers: Manoj Shukla, Manoj Kolel-Vetil, Nancy Kelley-Loughnane, Mallikarjuna Nadagouda

Abstracts are welcomed on PFAS remediation, incineration, chemical degradation, biological degradation, catalytic degradation, isolation, detection and removal, Fluorine-free PFAS alternative compounds.

Toward Resilient Ecosystems & Water-Food Security for Sustainable Development

Organizers: Meshal Abusllah, Waleed Zubari, Bader Al Enizi, Waad Ali, Talal Al Awadhi

Honorary and Invited Symposia

Advances Made by Early to Mid-Career Researchers in Environmental Science & Engineering (Invited)

Organizers: Dion Dionysiou, Virender Sharma

The symposium will recognize the contributions to environmental science and engineering by the researchers. The symposium will include mostly invited oral and poster sessions.

C. Ellen Gonter Graduate Student Award Symposium (Invited abstracts only)

Organizer: Kevin O'Shea

This annual Division of Environmental Chemistry award is presented to graduate students at university who submit the highest quality research papers for consideration by the awards committee.

Engineered, Natural, & Incidental Nanomaterials & their Impacts on the Environmental System: Symposium In Honor of Michael Hochella

Organizers: Virender Sharma, Dionysios Dionysiou, Peter Vikesland, Quan Wang

Environmental Film Showcase on Sustainability

Organizers: Sherine Obare, James Cobb, Amir C. Ross-Obare

Cooperative cosponsor: CEI

This showcase champions talented filmmakers who are aware of the full transformative power of their work. We encourage filmmakers to collaborate with the chemistry community and with other experts involved in environmental science, engineering, society to produce films that offer a captivating story, are entertaining, meaningful, create awareness, and connect viewers to emotions, while presenting issues containing balanced perspectives and credible sources. The symposium will showcase the top 5 film winners recommended by a CEI/ENVR selection committee.

Greener Strategies in Environmental Sustainability In Honor of John Crittenden

Organizers: Daisuke Minakata, Virender Sharma, Xiaohong Guan

This symposium is held in honor of John Crittenden's long term accomplishments in sustainability and physical chemical treatment processes for the engineered water infrastructure systems. The symposium intends to focus on the historical advancement in various physical chemical water treatment processes and recent advancement in urban development of sustainability and resiliency. Physical chemical treatment processes include but not limit to adsorption, ion exchange, air stripping, advanced oxidation, membrane. Sustainable urban development and resiliency include but not limit to urban ecology, resilient infrastructure systems analysis, and sustainable community research.

Sustainable Water & Sediment Management: Symposium in Honor of Danny Reible

Organizers: Xingmao Ma, Greg Thoma, David Lampert

Interdisciplinary Approaches to Environmental Challenges

Environmental Chemistry & Polymer Science: Convergence at the Interface

Organizers: Ning Dai, Boya Xiong, Collin Ward

This symposium is a convergence of environmental chemistry, polymer science, and related fields. Topics include the interfacial transformation of polymeric chemicals and materials in natural and engineered systems, mechanisms of polymer transformation, predictive models on polymer behavior, environmental-friendly polymer designs, and new analytical tools for studying polymers in complex systems.

Environmental Health & Toxicology: The Challenge of Complex Environmental Mixtures

Organizers: Carsten Prasse, Christie Sayes

Understanding how chemical exposures impact our health is critical for the development of mitigation strategies. This requires the development of analytical techniques to measure exposures to complex mixtures and assess the resulting effects on a molecular level and via different pathways. The focus of this symposium is to encourage submissions that present novel research and development activities designed to improve the understanding of how chemicals impact environmental health.

Intersection of Toxicology & Chemistry: Addressing Toxicity & Environmental Impacts Through Molecular Design

Organizers: Amy Cannon

Virtual Graduate Students Symposium in Asia-Pacific Region on Current Environmental Issues

Organizers: Chun Zhao, pureson@163.com
Chunxiao Zheng, czheng@acs-i.org

This virtual symposium is initiated and co-organized by Southwestern China Chapter. The graduate students in Asia-Pacific region are welcome to showcase their most recent research on Environmental Chemistry and gain experience as oral speakers at an international setting. We will try to arrange all the presentations during day time in the region. The symposium will cover all aspects of Environmental Chemistry and in particular will focus on Water and Waste Water Treatment, Advanced Oxidation Processes, Emerging Contaminants and Environmental Nanotechnology.

Advancing Water Treatment Technologies

Advanced Oxidation/Reduction Processes for Water & Wastewater Treatment: Progress & Challenges

Organizers: Jingyun Fang, Dion Dionysiou, Stanislaw Wacławek

Applications of Wastewater-Based Epidemiology for Public Health

Organizers: Sangeet Adhikari, Rahul Kumar, Erin Driver, Gordon Getzinger, Bikram Subedi

Disinfection & Oxidation Byproducts in Water Treatment

Organizers: Xin Yang, Xing-Fang Li, Susan Richardson, Carsten Prasse

This symposium will present recent technological advances and research on removal of emerging contaminants, analytical and toxicological characterization of BPs, novel approaches to assess human health risks associated with the exposure to complex mixtures of BPs, as well as novel strategies to identify previously unknown BPs.

Porous Framework Materials for the Removal of Emerging Contaminants from Aqueous Environments

Organizers: Mario Wriedt, Timur Islamoglu

This symposium centers around the design, synthesis, optimization, and theory of porous framework materials for the adsorption and degradation of emerging contaminants from aqueous environments.

Sensors & Biosensors for Widespread Environmental Monitoring

Organizers: Paul Schorr, Maria Romero-Gonzalez, Vishnu Rajasekharan, Tao Li, Margaret McCall

This symposium focuses on advances in widespread deployable environmental sensors to detect conventional, priority, and emerging chemicals and pathogens for specific potable water and wastewater, as well as water for power generation, industrial, pharmaceutical, and agricultural uses. We also invite presentations on sensors for air and soils and on techniques to predict and monitor environmental impacts of extreme weather events on natural and manmade systems. Symposium goals since inception in 2016 are to provide a place for researchers to network, to find sponsors, and to deploy sensors. One goal is to develop the technical and institutional capacity to track the flux of chemicals between and within media.

Sensors for Water Quality Monitoring in Resource Limited Environments

Organizers: Michael Wiederoder, Eric Brack, Todd Alexander

The symposium will highlight innovative sensor technologies to improve water quality testing in resource limited environments. Presentations will highlight novel research and development for the detection of chemical and biological contaminants in a resource limited environments.

Chemical, Physical and Biological Processes in the Environment

Developed & Emerging PFAS Treatment Technologies for Per- & Polyfluoroalkyl Substances (PFAS)

Organizers: Purshotam Juriasingani, Michael Bentel, Brian Chaplin

This symposium will focus on emerging destruction technologies for per- and polyfluoroalkyl substances. Strategies of interest include, but are not limited to chemical (e.g., electrochemical, photochemical, incineration), catalysis (e.g., photo-, electro-, photoelectro-, thermal-), plasma and microbial studies and technologies. Broader topics including other remediation strategies, such physical separation (e.g., activated carbon, membrane filtration), and development of PFAS sensors and analytical techniques will be included based on submitted abstracts. Research at any stage of development, including bench or lab scale to pilot scale, will be presented. Research addressing PFAS as a family, and not limited to single PFAS compounds (e.g., perfluorooctanoic acid [PFOA], perfluorooctane sulfonic acid [PFOS], hexafluoropropylene dimer acid [GenX]) is of particular interest to the broader scientific community and will be the focus.

Software Tools & Methodologies to Evaluate the Hazard & Properties of Chemical Alternatives

Organizers: Todd Martin, Charles Lowe, Antony Williams

The increasing rate of production and release of new chemicals into commerce requires improved access to experimental and predicted toxicity and property data, the ability to rapidly assess chemical alternatives for hazard, and the ability to prioritize chemicals for testing. This symposium covers topics including tools to estimate toxicity and properties, tools for rapidly evaluating hazard and/or risk, and automated workflows for developing curated data sets and QSAR models.

General Environmental Chemistry

Current Perspectives in General Environmental Chemistry

Organizers: Virender Sharma, Christie Sayes

This symposium includes the latest advances, current trends, and innovative advances related to environmental chemistry today. The occurrence of new chemicals, next-generation products, and advanced processes used in industrial and environmental applications has grown tremendously over the last decade. Current perspectives from other fields of study including environmental toxicology, risk, health, engineering, management, sustainability, and policy are also welcomed to contribute. Specific case studies will be presented, and recommendations will be discussed to enable cross-disciplinary interactions between chemists and other environmental scientists.

General Environmental Chemistry Poster Session

Organizers: Virender Sharma, Christie Sayes

This symposium is open to all papers or posters on environmental chemistry or engineering that may be beyond the focus of the specific topics addressed in other ENVR symposia.