

IUPAC at the forefront of Chemistry and the Environment: the role of Division VI



https://iupac.org/body/600/

The Division Today



Division VI members for the biennium 2022-2023 are from **20 different countries** and **5 continents**.



10 from Europe,
6 from Asia,
6 from Americas,
2 from Africa,
2 from Australia.



Gender distribution:
14 males and 12 females. The Division Executive Committee is composed for 3/4 of females.



Projects

Currently, Division VI has **18 active projects** developed within the Division and is **collaborating in 8 projects** promoted by other Divisions or Committees. **7 new projects** have been approved in this biennium.

IUPAC Division VI

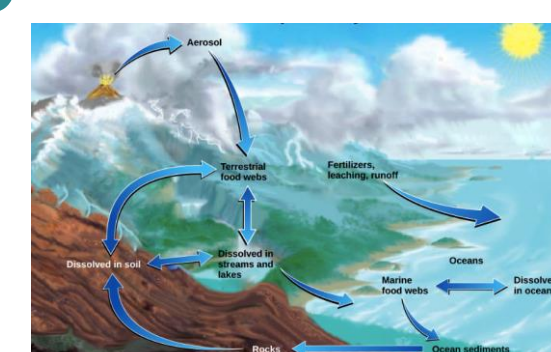
provides unbiased and timely authoritative reviews on the **behavior of chemical compounds in food and the environment**.

Advisory Committee on Crop Protection Chemistry



- **30 scientists from all over the world**
- Provides **unbiased and authoritative views** regarding environmental and human health aspects of crop protection chemistry
- Primary areas of emphasis include **definitions, methodologies, and regulations**.
- Outreach activities help **move IUPAC project outcomes** outside the small circle of specialists and **into the broader scientific and regulatory arena**, with a strong emphasis on technology transfer to developing countries.

Subcommittee on Chemical and Biophysical Processes in the Environment



- **30 scientists** from over 15 countries
- Presents with **topics** regarding the
 - distribution and environmental fate of chemicals (e.g., inorganic and organic compounds, nanomaterials),
 - chemical and biophysical processes in environmental compartments (e.g., air, soil and aquatic ecosystems),
 - interactions with organisms (e.g., bioavailability).

Observers Group



Established after the 2021 General Assembly to maintain engagement, facilitate continued learning, and provide a network for all observers of the Division



ACTIVITIES

Goal: Provide scientific expertise to address critical world needs

Conferences



The quadrennial **IUPAC International Congress of Crop Protection Chemistry** serves to highlight state-of-the-art scientific advances and regulatory approaches.

Division VI has contributed to the organization of the **"APCE-CECE-ITP-IUPAC" Congress in Cambodia** where two special symposia have been coordinated: "The Environment, Health and Food Safety Impact of Microplastics" and "Per- and Polyfluoroalkyl Substances (PFAS) in the Environment"

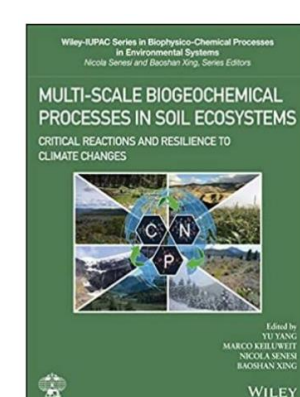


Division VI, in collaboration with **EuChemS Division on Chemistry and the Environment**, has organized two Symposia at the **18th International Conference on Chemistry and the Environment**

"Advances in remediation technologies for the reclamation of soil and sediments contaminated by organic and inorganic pollutants" and "Humic substances (HS) and natural organic matter (NOM) dynamics and environmental impact".

Publications

Book on "Multi-Scale Biogeochemical Processes in Soil Ecosystems - Critical Reactions and Resilience to Climate Changes", 2022, **Wiley - IUPAC Series on Biophysico-Chemical Processes in Environmental Systems** (project 2016-047-1-600)



Translation into Russian of the **Emergency Response Guidebook 2020**, February 2023 (project 2020-020-2-600). PDF file freely available online on IUPAC website: <https://iupac.org/erg2020-rus/>

Within project 2021-008-1-600, Division VI has organized **four Symposia at the 48th IUPAC World Chemistry Congress** under the Theme "Chemistry for Sustainability": "Emerging Technologies and Conservation Practices for Sustainable Agriculture and Public Health", "The Environmental Impact of Fires", "Sustainable Polymers", "A Healthy Intake: Environmental Pollutants in Air, Water, Food and their Removal" - Coorganized with CIC. A summary of this activity has been published in **Chemistry International** (2022) by Purchase et al. "Environmental Chemistry and Sustainability"



The Advisory Committee on Crop Protection Chemistry publishes twice a year a virtual newsletter entitled "**CropChem News**". The last issue has been released in February 2023 (<https://iupac.org/iupac-cropchem-news-issue-3-february-2023/>).

Goal: Improve the vitality, effectiveness and efficiency of our Union

Re-strengthen active participation within the Division after the years of the pandemic

We organized an **in-person Division Annual Meeting** and a number of activities in Siem Reap (Cambodia) in November 2022, including project task group discussions and workshops.



Division VI Observer Group

Division YO's Group has been recently created and is operative. It will assist new Observers recruited for the next biennium and beyond to collaborate with the Division.

Observers have been actively involved in Division projects also with Co-Chair roles, and different initiatives with their involvement are being organized.

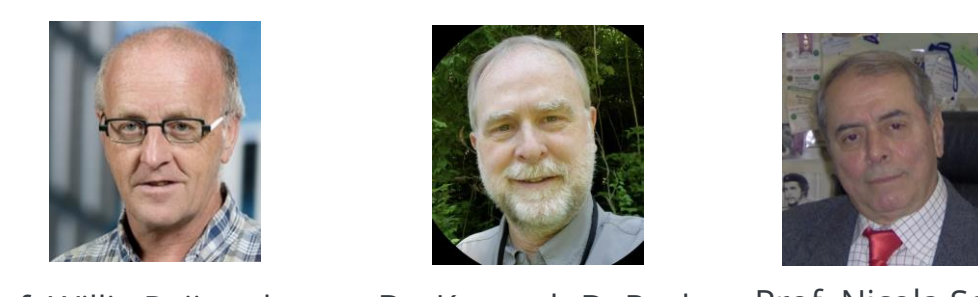
ChemVoices Webinar

IUPAC at the forefront between Chemistry and the Environment



Moderated by Dr. Elia Congiani, National Research Council, Italy. **JOIN US ON:** April 26 @ 9:30 am (ET). **REGISTER TODAY:** https://bit.ly/IUPAC_Div_VI

New Emeritus fellows



Division VI has appointed three **new Emeritus Fellows** in this biennium.

This important recognition will also contribute to keep them engaged within the Division. Some of them have been involved in the **Division Gold Book project** where their contribution and experience can be very important.

More on projects: successful stories

Nano-enabled Agrochemicals: Ecological and Human Health Risk Considerations

- 3 projects across 11 years which resulted in:
 - 5 workshops, 4 highly-cited publications
 - Ecological risk assessment framework
 - Human health risk assessment framework



The Environmental and Health Challenges of E-Waste and Its Management: An Emerging 21st Century Global Concern

- Critical review and analysis of literature to provide recommendations that are scientifically robust and globally informed
 - Organized symposia and panel presentations, delivered talks at international meetings
 - Produced an IUPAC technical report



Enhancing Capabilities for the Mitigation of Chemical Risk: the Dissemination of the Emergency Response Guidebook in Russian-Speaking Countries

- Led by Division VI in partnership with Div. VII, CCE, and OPCW
 - Translated guidebook made available in January 2023
- Launch events in Kyrgyzstan and Kazakhstan
 - More than 130 participants
 - 800 paper copies distributed



Expand and retain Member and volunteer base with an emphasis on diversity and inclusion

The volunteer base is expanded by engaging scientists across disciplines in subcommittee meetings, project activities, and the Division YO Group. Members and volunteers are also retained through these activities along with recognition through the Emeritus Fellow program.

Improve quality and frequency of communication with stakeholders

Division VI takes a leading role in the collaboration between IUPAC and the Organisation for the Prohibition of Chemical Weapons (OPCW). Workshops and focus sessions have been co-organized by OPCW and Division members while a Division Associate Member (AM) has been nominated to the Scientific Advisory Board.

Enhance interdivisional interaction and collaboration

With an inherently interdisciplinary and transversal focus, the Division continually pursues collaboration with other IUPAC Divisions and Committees. In this biennium, 8 projects have been approved that leverage expertise from across the organization.

Emphasize multidisciplinary projects addressing critical global issues

Multidisciplinary is at the basis of environmental chemistry. Project task groups are usually composed of experts from different disciplines and with different expertise (i.e., government agencies, regulators, academia, industry). Particular attention is addressed to those critical global issues highlighted by the IPCC, SDGs, and UNEP.

Support chemistry education, particularly in developing countries

On Nov. 2022, the Division VI annual meeting was held during the Interdisciplinary Conference of Chemical Analysis, APCE-CECE-ITP-IUPAC, in Southeast Asia-Cambodia. Results were presented for five ongoing projects and an IUPAC Overview session was provided. A full day was also dedicated to meeting students and staff at Angkor University in Siem Reap.