Special Issue on "Chemistry in the Environment"

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Editorial

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Chemistry does not only take place in the laboratory of the synthetic chemist, but throughout the environment. There, chemical processes are key in determining environmental quality and health and fuel essential biogeochemical cycles. Environmental chemists and ecotoxicologists seek to understand the chemical principles that underlie these processes and to thus contribute to mitigating the chemical-associated impact of human activities in the environment. Switzerland is home to a vivid environmental chemistry and ecotoxicology community, with a strong international outreach. Swiss researchers regularly figure amongst the most highly cited researchers and receive best paper awards from the top international journals in the field of environment and ecology. Yet, while we all know each other, we feel that we could profit from a more intense exchange within Switzerland and between academic and industrial research. This will not only cut down on our travel-related CO_2 emissions, but also further fuel solution-oriented research in Switzerland, which will benefit our economy and society alike. We therefore welcome with great joy the initiative of the Swiss Chemical Society to embrace the topic and to have supported the founding of a new SCS Section on 'Chemistry and the Environment' in 2019.[1]

With this issue of CHIMIA, we celebrate the foundation of SCE and do so by showcasing the thematic breadth of Swiss environmental chemistry research, along with its wide geographic and institutional coverage, including contributions from private industry, applied research institutes and research universities. We are also happy to report that 40% female authors contributed to the issue, speaking to the strong representation of women in our field. More specifically, the twelve contributions published in this Special Issue illustrate that Swiss research in the field of environmental chemistry and ecotoxicology spans

from *research aimed at fundamental process understanding* (*e.g.* mechanisms of oxidation by non-heme ferrous iron (di)oxygenases,[2] Fenton-type viral inactivation,[3] interaction between phytoplankton and engineered nanoparticles[4] or the cloud condensation nuclei ability of secondary organic aerosols[5]), *across monitoring activities* to discover novel pollutants[6] or monitor the success of international treaties such as the Montreal protocol,[7] *to practice-oriented research* aimed at improving regulatory practice and waste management (*e.g.* development of improved testing procedures for the risk assessment of medicinal and plant protection products,[8,9] *in vitro* tests,[10] and wastewater management technologies[11])

from *man-made chemicals* such as plant protection products,[9,12] fragrances[10] and antibiotics[8] to *natural toxins* produced by plants and cyanobacteria;[6,13]

from the *aquatic environment* (*e.g.* wastewater,[11] lakes & rivers[6,13]) to the *terrestrial environment*[9] and *atmosphere;*[5,7]

and from studying the *fate of contaminants* in natural and technical systems,[2,3,12] to studying their *effects* on biomacromolecules,[13] and non-target organisms.[4,8–10]

We hope that you will enjoy reading the contributions as much as we enjoyed compiling them, and that you will become an active and engaged member of our new section!

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