ABSTRACT BOOK

SETAC EUROPE 34TH ANNUAL MEETING

5–9 MAY 2024 | SEVILLE, SPAIN

SCIENCE-BASED SOLUTIONS IN TIMES OF CRISIS: INTEGRATING SCIENCE AND POLICY FOR ENVIRONMENTAL CHALLENGES.

Abstract Book

SETAC Europe 34th Annual Meeting

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This book compiles the abstracts from the 34th annual meeting of the Society of Environmental Toxicology and Chemistry – Europe (SETAC Europe), conducted from 5–9 May 2024 in Seville, Spain.

The abstracts are reproduced as submitted by the author and accepted by the scientific committee. They appear in order of abstract code and alphabetical order per presentation type. The poster spotlight abstracts are included in the list of poster abstracts. The presenting author of each abstract is highlighted in bold.

The information in this abstract book reflects the status of the abstracts as was on 29 April 2024.

About SETAC

In the 1970s, no forum existed for interdisciplinary communication among environmental scientists, biologists, chemists, toxicologists, managers, engineers or others interested in environmental issues. The Society of Environmental Toxicology and Chemistry (SETAC) was founded in North America in 1979 to fill the void and quickly saw dynamic growth in the Society's membership, meeting attendance and publications.

A unique strength of SETAC is its commitment to balance the scientific interests of government, academia and business. The Society by-laws mandate equal representation from these three sectors for officers of the World Council and Geographic Unit Boards of Directors and Councils, and in the composition of committees and other society activities. The proportion of members from each of the three sectors has remained nearly equal over the years.

The Society is concerned about global environmental issues. Its members are committed to Environmental Quality Through Science®, timely and effective communication of research, and interactions among professionals so that enhanced knowledge and increased personal exchanges occur. Therefore, SETAC publishes two globally esteemed scientific journals and convenes annual meetings around the world, showcasing cutting-edge science in poster and platform presentations. Because of its multidisciplinary approach, the scope of the science of SETAC is broader in concept and application than that of many other societies.

SETAC's growth is reflected in the founding of Geographic Units around the world. SETAC Europe was established in 1989 as an independent organisation, followed by SETAC Asia-Pacific in 1997 and SETAC Latin America in 1999. In 2002, the four existing organisations joined together under the governance of the SETAC World Council. SETAC Africa is the most recent Geographic Unit, which was adopted in 2012. As evidence of international acceptance of the SETAC model and of the great interest at the local level, regional chapters and branches have emerged in a number of countries.

SETAC publishes two journals, *Environmental Toxicology and Chemistry* (ET&C) and *Integrated Environmental Assessment and Management* (IEAM). ET&C is dedicated to furthering scientific knowledge and disseminating information on environmental toxicology and chemistry, including the application of these sciences to risk assessment. Integrated Environmental Assessment and Management focuses on the application of science in environmental decision-making, regulation and management, including aspects of policy and law, and the development of scientifically sound approaches to environmental problem solving. Together, these journals provide a forum for professionals in academia, business, government and other segments of society involved in the use, protection and management of the environment for the enhancement of ecological health and human welfare.

SETAC books provide timely in-depth reviews and critical appraisals on scientific subjects relevant to understanding a wide range of contemporary topics pertaining to the environment. These include any aspect of environmental chemistry, toxicology, risk assessment, risk management or environmental policy.

SETAC has two administrative offices, in Pensacola, Florida, USA, established in 1992, and in Brussels, Belgium, established in 1993.

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3.18.P-Mo298 Comparison of nanofiltration and reverse osmosis membrane in the removal of pharmaceuticals from water

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Presence of pharmaceuticals in water can have negative impact on human health, as well as the aquatic environment. Since pharmaceuticals are continuously introduced to water systems and conventional water treatments are not efficient enough in their removal, additional processes for their removal from water are required. Membrane separation processes, such as nanofiltration and reverse osmosis, could be efficient in the removal of pharmaceuticals from aquatic environment. The aim of this study was to compare the efficiency of nanofiltration and reverse osmosis membrane in the removal of four pharmaceuticals, acetaminophen, salbutamol, carbamazepine and bezafibrate, using dead end filtraton equipment. Two comercially available polyamide membranes, nanofiltration membrane with molecular weight cut off 150-300 Da and reverse osmosis membrane with molecular weight cut off 100 Da, were used for the removal of pharmaceuticals from a model solution. Efficiency of nanofiltration membrane in the removal of acetaminophen, salbutamol, carbamazepine and bezafibrate was 51.59%, 84.95%, 92,79% and 91.05%, respectively. However, higher removal efficiencies were observed with reverse osmosis membrane, with values of 92.71%, 86.29%, 96.53% and 94.99% for acetaminophen, salbutamol, carbamazepine and bezafibrate, respectively. Lower rejection rates of selected pharmaceuticals with nanofiltration membrane are due to the higher molecular weight cut off of the membrane. The greatest difference in rejection rates between nanofiltration and reverse osmosis membrane was observed for acetaminophen, due to the lowest molecular weight (151.16 Da). Salbutamol, carbamazepine and bezafibrate have higher molecular weights and therefore, the differences in the removal efficiencies between nanofiltration and reverse osmosis membrane were lower. In conclusion, reverse osmosis membrane was more efficient in the removal of selected pharmaceutical, however, nanofiltration membrane also had high removal efficiencies for pharmaceuticals with higher molecular weights.