



Microbial and Chemical Pollution: Assessments and Technologies in Improving Water Quality and Sustainable Use

Guest Editors:

Dr. Valeria Ochoa-Herrera

1. Escuela de Ingeniería, Ciencia y Tecnología, Universidad del Rosario, Bogotá 111221, Colombia
2. Colegio de Ciencias e Ingenierías, Universidad San Francisco de Quito, Quito 170157, Ecuador

Dr. Laurence Maurice

1. IRD, French National Research Institute for Sustainable Development, Marseille, France
2. OMP, GET "Geosciences Environment Toulouse" Laboratory, 31400 Toulouse, France

Deadline for manuscript submissions:

closed (15 June 2023)

Message from the Guest Editors

The contamination of natural water sources by microbial and chemical agents is one of the main health problems. Microbial and chemical contaminants can reach aquifers and surface waters throughout natural and anthropogenic activities. Natural causes for the presence of some microbial and chemical elements are primary rock erosion or soil weathering. Meanwhile, anthropogenic practices, such as agricultural runoffs and the discharges of chemicals and untreated domestic and industrial effluents coming from mining, petroleum, metallurgy, dairy activities among others, are the main sources of microbial and chemical pollutants in water bodies. The microbial load is typically assessed in water samples, whereas the presence of chemical pollutants depends on their physicochemical properties, they can easily be dissolved in water or be sorbed onto sediments in aquatic environments. Therefore, assessments to evaluate microbial and chemicals loads and the development of technologies and innovations to improve water quality are of high importance to assure water quality levels, resilience, and sustainability of water resources worldwide.





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Faculty of Engineering and
Applied Science, University of
Ontario Institute of Technology,
Oshawa, ON L1G 0C5, Canada

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MDPI, Grosspeteranlage 5
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