

Volume Preface

This book on *Emerging Organic Contaminants in Sludges: Analysis, Fate and Biological Treatment* provides information on the current state of the art with regard to emerging organic contaminants (ECs) with specially focus on their occurrence in sludge. Much scientific work describes the presence of ECs in rivers, urban wastewater, industrial effluents, etc. Some of these ECs are characterized by their hydrophobicity although their tendency to accumulate in sludge is scarcely reported.

This book aims to review and compile the main developments and knowledge acquired in this field, and tries to remedy this lack of information. The book is structured in nine different chapters, covering the impact of ECs on biosolids applications, advanced chemical analytical methods, the occurrence and fate of ECs in sludge, and biological degradation techniques, with special focus on treatment by fungi. Finally, the last chapter discusses the main conclusions and possible future trends, these being the starting point to be taken into account in future studies in the field.

Due to the demand for sustainable technologies, bioremediation is regarded as one of the best method for pollutant degradation because of its cost, efficiency and environmental friendliness. Among all the microorganisms that can be used in bioremediation, fungi play an important role. The considerable research effort on fungi capacities demonstrates that their biochemical and physiological characteristics can be important for a wide range of biotechnological applications to be used for degrading organic contaminants. As a result of their great promise, this book includes four chapters on fungal degradation, starting with sludge treatments and going on to the degradation of three selected EC families, pharmaceuticals, UV filters and PBDEs, as case studies. These specific studies allow the analysis and development of two important aspects related to degradation processes – metabolite identification and toxicity.

The large number of figures, tables and case studies, together with the double disciplinary approach, environmental analysis and engineering, make *Emerging Organic Contaminants in Sludges: Analysis, Fate and Biological Treatment* a relevant and interesting book for a broad audience of scientific researchers such as environmental chemists, environmental engineers, biotechnologists, ecotoxicologists and professionals responsible for waste and water management. We hope that

the information in this book can also be useful to extend the results obtained for the selected families to new ECs.

Finally we would like to thank all the contributing authors of this book for their time and effort in preparing this comprehensive compilation of research papers.

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