



“Gheorghe Asachi” Technical University of Iasi, Romania



EDITORIAL

Material & Energy Recovery and Sustainable Development ECOMONDO 2016

20th International Trade Fair of Material & Energy Recovery and Sustainable Development

The papers collected in this Special Issue of *Environmental Engineering and Management Journal* were presented as lectures or posters at the scientific and technical conferences hosted by *Ecomondo 2016* held in Rimini, Italy, 8–11 November, 2016 (<http://en.ecomondo.com>).

Ecomondo is the second largest European exhibition in the field of *Green and Circular Economy*, with over than 105,000 delegates from 45 different nations and 1200 companies exhibiting their products and processes in a 103,000 square meters. It is hosting over than 100 conferences and workshops, ensuring a weighted and rewarding balance between sales dimension and technical-scientific dimension, with extensive room dedicated to research and innovation, education and training.

As with the previous editions, the aim of *Ecomondo 2016* was to explore recent industrial advances and opportunities in waste production reduction, waste collection, fractionation, recycling, exploitation; biomass and biowaste exploitation via integrated biorefinery scheme, with the production of

bioplastics, biobased chemicals and biofuels, including methane; industrial eco-design; renewable and critical resources; agri-food and forestry sustainable production and residue valorization; water resources monitoring and protection; wastewater treatment and valorization with nutrients recovery and marine resources protection; sustainable remediation of contaminated sites and marine ecosystems; indoor and outdoor air monitoring and clean up; the state of the art and perspectives of the environmental footprint and the Industrial Symbiosis; circular and smart Cities.

Ecomondo 2016 hosted over than 120 conferences, more than 800 oral communications and almost 120 papers. This special issue provides some of the key information presented and discussed in the frame of some of such conferences.

We believe that this collection of papers will be useful to people who could not participate in the *Ecomondo 2016* directly. It is primarily towards those individuals that it is directed, but it also aspires to provide permanent records in process of turning environmental problems and challenges into new opportunities for a green economy with a bright future.





Guest editors:

Prof. Fabio Fava

Alma Mater Studiorum - Università di Bologna
(University of Bologna), Bologna, Italy

Dr. Grazia Totaro

Alma Mater Studiorum - Università di Bologna
(University of Bologna), Bologna, Italy

Prof. Maria Gavrilescu

„Gheorghe Asachi” Technical University of Iasi, Romania



Fabio Fava, born in 1963, is Full Professor of “Industrial & Environmental Biotechnology” at the School of Engineering of University of Bologna since 2005. He has about 130 papers on medium/high IF peer-reviewed international journals of industrial and environmental biotechnology, sectors in which he coordinated the FP7 projects NAMASTE and BIOCLEAN and participated in other 7 FP7 collaborative projects. He is vice-chairman of the “Environmental Biotechnology” section of the European Federation of Biotechnology (EFB). He is the Representative of the Italian Ministry of Education, University and Research in the “Working Party on Biotechnology, Nanotechnology and Converging Technologies” at OECD (Organisation for Economic Co-operation and Development), Paris, in the “European Strategy for the Adriatic and Ionian Region” (EUSAIR) and in the “Western Mediterranean Initiative” (WEST MED). He is member of the “Expert Group on Biobased Products” (DG GROW, European Commission, EC) and is the Italian Representative in the a) H2020 Programming Committee “European Bioeconomy Challenges: Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research” (SC2, DG RTD, EC), b) “States Representatives Group” of the “Public Private Partnership BioBased Industry” (BBI JU)(DG RTD, EC) and c) BLUEMED Strategic Board (DG RTD and DG MARE, EC). Finally, he is the scientific coordinator of the International Exhibition on green and circular economy ECOMONDO held yearly in Rimini (Italy).



Grazia Totaro, born in 1976, has a degree in Chemistry (University of Ferrara), a Master’s Degree in Science, Technology & Management with a specialization in Environmental Chemistry (University of Ferrara) and a PhD in Materials Engineering (University of Bologna).

She worked at the R&D Centre of Basell Polyolefins in Ferrara for 2 years in the frame of a project addressed to the development of a novel methodology for qualitative and quantitative analysis of additives in polymers. She also worked at ARPA, Regional Agency for Environment in Ferrara, division Water Analysis. Then she started working at the school of Engineering of the University of Bologna for a Ph.D. in Materials Engineering (2007-2010). After that, she had a scholarship “Spinner 2013” in cooperation with Reagens spa (San Giorgio di Piano) on novel PVC nanocomposites. Now she is post doc fellow at the same school on new polymer-based nanocomposites from renewable sources and inorganic fillers. She also worked at the laboratoire de Chimie et Biochimie Pharmacologique et Toxicologique (Université René Descartes) in Paris in 2001 and was visiting professor at the Ecole Nationale Supérieure de Chimie (Université Blaise Pascal, Clermont Ferrand, FR) in 2012 and 2015. Dr. Totaro has about 25 scientific papers and several participations at conferences and scientific schools. She collaborates on Ecomondo from 2013.



Maria Gavrilescu (born in 1956) is Full Professor at the Department of Environmental Engineering and Management, Faculty of Chemical Engineering and Environmental Protection - *Gheorghe Asachi* Technical University of Iasi, Romania. Her research and teaching interests include: chemical and biological process engineering, biotechnology/ environmental biotechnology, environmental risk assessment and management/ industrial safety, integrated pollution prevention and control/ sustainable industrial production/ cleaner production and waste management, eco-innovation/ eco-design/ eco-technologies, environmental and sustainability evaluations. Professor Gavrilescu is PhD Supervisor in *Chemical Engineering* (since 2002) and *Environmental Engineering* (since 2009). She is author/co-author of more than 650 titles, including 46 books/chapters, 151 papers published in ISI ranked journals, ISI Proceedings and book chapters (13), other peer-reviewed journals and conference proceedings (over 140), 12 patents, keynotes, oral presentations, posters etc. Prof. Gavrilescu coordinated or worked as researcher in over 60 national and international research projects. Also, she is a founder of the *National Society of Environmental Science and Engineering*, being also member of: Editorial Advisory Board of *international journals*; *Romanian Society of Chemistry*; *European Federation of Biotechnology* (member of Experts Board of *Environmental Biotechnology* Section) etc. The scientific visibility is illustrated by over 2800 citations (H-index 25) (WOS and Scopus).