



**“Gheorghe Asachi” Technical University of Iasi, Romania**



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## **EDITORIAL**

### **Material & Energy Recovery and Sustainable Development ECOMONDO 2015**

#### ***19th International Trade Fair of Material & Energy Recovery and Sustainable Development***

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The contributions in the form of Full papers collected in this Special Issue of *Environmental Engineering and Management Journal* were selected from lectures and posters of the scientific and technical conferences hosted by *Ecomondo 2015* held in Rimini, Italy, 3–6 November, 2015 (<http://en.ecomondo.com>).

*Ecomondo* is the most recognized platform for the Mediterranean basin, in terms of materials exploitation and recycling for the large industry of the future, which will be part of *Green and Circular Economy*, ensuring a weighted and rewarding balance between sales dimension and technical-scientific dimension, with extensive room dedicated to research and innovation.

As with the previous editions, the aim of *Ecomondo 2015* 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, bioplastics, biobased products and biomethane; green and sustainable chemistry; 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.

A special emphasis was given to European Eco- Innovation in the broad field of green and circular economy. Some of the initiatives were dedicated to the promotion of industrial symbiosis and networking i.e.

the creation of partnerships between industries working in the complementary sectors or different countries and to the presentation of the most prominent international and EU RTD and industrial projects.

The areas of particular interest addressed within *Ecomondo 2015* are:

- waste characterization, management, recycling and exploitation (*Waste*)
- monitoring, management and treatment/ exploitation of industrial and civil wastewaters (*Blue Gold*)
- the sustainable and biomass-based chemical industry, with a special focus on the Joint Technology Initiative Bio Based Industry (JTI BBI) and biomethane production (*Biobased Industry*)
- monitoring and treatment of air pollution (*Air*)
- the environmental footprint (*Eco-Innovation*)

*Ecomondo 2015* hosted over than 100 conferences, more than 500 oral communications and almost 90 papers. This special issue provides some of the key information presented and discussed in the frame of some of such conferences. Over 103,000 delegates from 40 different nations were participating in the event.

We believe that this collection of papers will be useful to people who could not able to participate 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.

**ECOMONDO**  
THE GREEN TECHNOLOGIES EXPO

03<sup>RD</sup>.06<sup>TH</sup> NOVEMBER 2015 RIMINI-ITALY  
19<sup>TH</sup> INTERNATIONAL TRADE FAIR OF MATERIAL & ENERGY RECOVERY AND SUSTAINABLE DEVELOPMENT



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**Fabio Fava**, born in 1963, is Full Professor of “Industrial & Environmental Biotechnology” at the School of Engineering of University of Bologna since 2005.

He coordinated the FP7 projects (collaborative projects) NAMASTE (on the integrated exploitation of citrus and cereal processing byproducts with the production of food ingredients and new food products) and BIOCLEAN (aiming at the development of biotechnological processes and strategies for the bioremediation and the tailored depolymerization of major oil-deriving plastics). He also coordinates/coordinated the Unit of the University of Bologna participating/participated in the FP7 projects (collaborative projects) ECOBIOCAP and ROUTES (on the production of microbial polymers from different organic waste and food processing effluents), MINOTAURUS and WATER4CROPS (on the intensified bioremediation of contaminated waste- and groundwater and the integrated valorization and decontamination of wastewater coming from the food processing industry and biorefinery), and ULIXES and KILL SPILL (on the development of strategies for intensifying the in situ bioremediation of marine sediments contaminated by (chlorinated)hydrocarbons and the isolation and industrial exploitation of microbes from such contaminated matrices). He also participated in the FP7 BIORICE addressed to produce added value bioactive ingredients (semi-purified digestates and small molecular weight peptides) starting from protein by-products contained in the processing water of the rice starch production stream. 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). Further, he joined the “High Level Group on Key Enabling Technologies” and he is member of the “Expert Group on biobased products”, both at the DG-GROW of European Commission (Brussels). Further, he is member of the Scientific Committee of the Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE-JPI). Finally, he is the Italian Representative at the European Commission (Brussels) in the Horizon2020 Programme Committee of Societal Challenge 2: European Bioeconomy Challenges: Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and inland water research” (DG RTD) and in the BLUEMED initiative (Chair of the Strategic Board) (DG RTD and DG MARE), and in the “State Representative Group” (as vice Chair) of the Public Private Partnership “Biobased Industry” (BBI JU) (Brussels).



**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, about modification, characterization and applications of technopolymers (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 20 scientific papers and several participations at conferences and scientific schools. She collaborates on Ecomondo from 2013.



**Maria Gavrilescu** (born in 1956) is professor at the Department of Environmental Engineering and Management–Faculty of Chemical Engineering and Environmental Protection of the „Gheorghe Asachi” Technical University of Iasi, Romania, where she teaches courses in Chemical and Biological Process Engineering, Process Synthesis and Analysis, Sustainable Industrial Production, Environmental Risk Assessment and Management. She supervises doctoral programs in the field of Environmental Engineering.

Prof. Gavrilescu has authored more than 350 publications as books and articles in the fields of chemical and environmental engineering, pharmaceutical and environmental biotechnology, pollution prevention and cleaner production, risk assessment and management. Prof. Gavrilescu has also managed or participated in 18 national and 7 international research projects and 25 research projects with industrial companies. The scientific visibility is illustrated by over 2000 citations (WOS h-index 24, Scopus h-index 24).

The professional memberships includes the followings: 2012-Founder of the *Romanian Society of Environmental Science and Engineering*; Member of: the Editorial Advisory Board of six international journals; Romanian Society of Chemistry; European Federation of Biotechnology-member of *Experts Board* of the Environmental Biotechnology Section.

Prof. Gavrilescu is the Editor-in-Chief of the *Environmental Engineering and Management Journal* edited by the *Gheorghe Asachi* Technical University of Iasi, Romania; Editor-in-Chief of *Procedia-Environmental Science, Engineering and Management*, edited by the *National Society of Environmental Science and Engineering*, Romania; Series Editor of *Annals of the Academy of Romanian Scientists – Series of Chemistry Sciences*.