Seminars 2023

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UNIVERSITÀ DEGLI STUDI DI BRESCIA

Cycle of Seminars

Day		Topic
Wednesday, 14 June 2023	*11:00-13:00 Aula Seminari Dip. DICATAM*	Artificial neural network as an appropriate method in solid waste management field
Friday, 16 June 2023	*10:00-13:00 Aula Seminari Dip. DICATAM*	Technologies to treat WEEE and recover precious metals and rare earth elements
Monday, 26 June 2023	*11:00-13:00 Aula Seminari Dip. DICATAM*	Food waste characteristics and importance of its proper management in line with circular economy principles
Wednesday, 28 June 2023	*10:00-13:00 Aula Seminari Dip. DICATAM*	Waste management in transition countries – case study of Serbia

CeTAmb – UniBS – Via Branze 43, Brescia

Brief presentation of the seminars

Artificial neural network as an appropriate method in solid waste management field

The classical methods in order to determine the existence and strength of the relation between variables include regression and state space methods. Modern methods include expert systems, fuzzy systems, evolutionary programming, artificial neural networks (ANN) and various combinations of these tools. In waste management, among the many existing tools, the ANN has received much attention because it can be effectively applied in the domain of prediction, clustering, classification, etc., and because of its clear model, easy implementation and good performance. Within this lesson, a general description and application of ANN will be evaluated with presentation of example, i.e. model for forecasting the amounts of packaging and biodegradable municipal waste.

Technologies to treat WEEE and recover precious metals and rare earth elements

Waste electrical and electronic equipment (WEEE) represent one of the fastest growing waste streams in the world. In addition to containing potentially hazardous substances, it also contains valuable secondary raw materials which can be recovered by adequate recycling and recovery treatment. Through this lesson, an overview of the most relevant e-waste categories and products in terms of critical metals (CMs) and rare earth metals (REMs) presence, a description of currently applied pre-treatment methods and the fate of the observed group of metals during the pre-processing phase, as well as general recommendations in order to avoid losses of CMs and REMs within the WEEE treatment chain, will be addressed.

Food waste characteristics and importance of its proper management in line with circular economy principles

Food waste has been marked as one of the most important waste streams in sustainable waste management systems. Its improper management can have a great potential negative effect on the environment and human health. Apart from food waste in households, significant amounts of this waste flow are generated from the commercial and hospitality sector sources, including restaurants. Within this lesson, methodology to quantify the amount and composition of generated food waste from restaurants, as well as possibilities for its prevention and treatment options in line with circular economy principles will be elaborated.

Waste management in transition countries – case study of Serbia

Although MSW management represents a growing problem in countries all over the world due to increased production and consumption, definitely the emphasis must be put on developing and transition countries where represent a significant problem. The main method for disposal treatment of municipal solid waste in these countries is unsanitary landfilling and open dumping due to the low costs of and low level of technology/knowledge. Further investment depends on the degree of economic development, but also the ability of relevant institutions and decision-makers to recognize the importance of investment in the field of waste management. This lesson discusses the main problems which determine the patterns in transition countries, on a case in Serbia, and analyze the current state of municipal waste management and its implications to identify gaps that need to be exceeded, for establishing a basis for future sustainable waste management systems.

Brief presentation of Dr. Bojan Batinić

Bojan Batinić (1981) is Associate Professor at the University of Novi Sad (Serbia) - Faculty of Technical Sciences - Department of environmental engineering. His field of research is designing and development of waste management systems. His key research areas are related to waste amount and composition analysis, modelling and projection of future waste characteristics, possibilities for utilization of different waste materials, waste collection, transportation and transfer analysis, design and development of waste management systems in line with EU Directives, local and regional waste management planning, Environmental Risk Assessment, etc. He is author and co-author of over 50 scientific papers related to topic of solid waste management, published in SCI Journals and International conferences. In previous professional work he was engaged in more than 30 national and international projects in the field of environmental protection and waste management.