

KEYNOTE



LECTURES



Food
for
Brain

ONE HOUR LECTURE...

ONE SPECIALIST...

ONE HOT TOPIC...

More information:

- Prof. E. Gidarakos egidarakos@tuc.gr
- IWWG website www.iwwg.eu

Lecture #1st 2024



13:00 CET



TO SUSTAIN AN ACCEPTABLE QUALITY OF LIFE WILL REQUIRE CONTINUED GENERATION OF MSW

The management of municipal solid waste (MSW) in an environmentally sustainable and cost-effective manner is the grand challenge of our time. Yet, it has not received the attention and support that is commensurate with its impact on environmental and human health. There are numerous charitable organizations, institutions, non-governmental and government agencies focused on solving some of the biggest problems facing humanity. For example, the U.S. Energy Information Agency has quantified that nearly 18% of the world's population does not have access to secure, clean energy^[1], the United Nations has identified that nearly 11% of the world's population does not have access to clean water and the World Hunger organization has determined that approximately 11% of the global population does not have sufficient food^[2]. These percentages translate into an average of 910 million people which is larger than the entire population of the United States and the European Union combined. However, that is only 13% of the entire world population that lives with MSW disposal issues because the entire world has a waste generating capacity that must be managed. Yet there is remarkably little effort compared to other challenges that are funded. The issue of waste management is normally left to regional and municipal agencies to develop an infrastructure focusing on collection. Once collected the vast majority (~85%) is sent to a landfill or open dump^[3].

[1] Sieminski, A., International energy outlook. Energy Information Administration (EIA), 2014.

[2] Parfitt, J., M. Barthel, and S. Macnaughton, Food waste within food supply chains: quantification and potential for change to 2050. Philosophical Transactions of the Royal Society B: Biological Sciences, 2010. 365(1554): p. 3065-3081.

[3] Hoornweg, D. and P. Bhada-Tata, What a waste: a global review of solid waste management. Urban development series knowledge papers, 2012. 15: p. 1-98.



Prof. Marco J. Castaldi

The City College (CCNY) of City University of New York (CUNY)
USA

Marco Castaldi was born in New York City and received his B.S. ChE (Magna cum Laude) from Manhattan College. His Ph.D. is in Chemical Engineering from UCLA and he has minors in Advanced Theoretical Physics and Astrophysics. Professor Castaldi has approximately 100 peer-reviewed research articles, 60 peer-reviewed conference papers, 3 book chapters and 11 patents and 2 pending in the fields of catalysis, combustion and gasification. Some of his research findings have been covered by The New York Times, The Observer, CNN, and other trade publications. Prior to his academic career Professor Castaldi worked industry for 8 years as Manager of Fuel Processor Component Development for Precision Combustion Inc overseeing projects. Castaldi is a recipient of the Fulbright Global Scholar Award the Distinguished Faculty Teaching Award. He is a fellow of the American Society of Mechanical Engineers (ASME) and the American Institute of Chemical Engineers (AIChE) the National Academy of Engineering, Frontiers of Engineering Education. He is a Chair of the ASME Materials and Energy Recovery Division, past Chair of the American Institute of Chemical Engineers (AIChE) Research and New Technology Council of AIChE and the North American Catalysis Society's New York Metropolitan Section. Castaldi is an internationally recognized expert and consultant in the areas of waste-to-energy, air emissions, combustion, and catalysis. His group is recognized by ASME as the foremost research group on chemical kinetics of converting wastes to energy. He is also Director of the Earth Engineering Center (WTERT-USA) at City College, a leading waste-to-energy research center focused on advancing processes particularly in the high-efficiency recovery of energy from waste materials using catalysis, with the aim of developing novel solutions to some of the world's most pressing problems. Castaldi received his B.S. ChE (magna cum laude) from Manhattan College and an M.S. and Ph.D. in Chemical Engineering from UCLA where he also minored in Advanced Theoretical Physics and Astrophysics.