

SARDINIA 2015 – 15th International Waste Management and Landfill Symposium

Santa Margherita di Pula (Cagliari), Italy, 5 - 9 October 2015

The fifteenth edition of the Sardinia Symposium, organized by the IWWG (International Waste Working Group, www.iwwg.eu), under the auspices of different international societies, including the IGS; was held in Forte Village, Santa Margherita di Pula (Cagliari), Italy, from October 5th to October 9th.

The event was attended by 732 participants (researchers, technicians, administrators and operators) from 63 different nations with the presentation of 537 scientific papers, selected according to quality by the Scientific Secretariat from 827 offers of papers from 63 different countries worldwide.

The conference included 89 oral sessions and 39 specialized workshops for a total of eight parallel tracks, two parallel events, discussion forums and roundtables, a continuously accessible poster area and a wide exhibition space for companies working in the field of waste management: at least 9 sessions were devoted to barrier and drainage systems or included presentations on geosynthetic engineering.

Several workshops were devoted to the presentation of innovative international projects. As usual, the conference provided for extensive discussion on the optimization of existing technologies and development of new ideas, placing particular emphasis on controversial issues such as waste of electrical and electronic equipment (defined as WEEE), anaerobic digestion management and landfill leachate management, material recovery, thermal treatment (incineration, pyrolysis, gasification), including monitoring environmental impact and health effects of emissions.

The symposium was introduced by the IWWG training courses: "Assessment of biological reactivity of wastes" organized by Erwin Binner (BOKU, AT); "WEEE management in Europe and beyond" jointly organized by Stefan Salhofer (BOKU, AT) together with Julia Hobohm (Hamburg University of Technology, DE); "Landfill aftercare" organized by Marco Ritzkowski (Hamburg University of Technology, DE); "Landfill leachate treatment" organized by Howard Robinson (Phoenix Engineering, UK).

The opening lecture of Sardinia 2015 Symposium was given by Prof. Liz Bachhuber (Bauhaus University - Germany), who addressed the connections between art and garbage; Prof. Werner Bidlingmaier (Bauhaus University - Germany, Winner of A life for Waste 2015) who discussed of the waste management hierarchy; Prof. Bilitewski (Dresden University of Technology - Germany, Winner of A life for Waste 2015), who highlighted the importance of environmental safety and sustainability and Prof. Pinjing He (Tonji University - China) who focused on Chinese

waste management challenges and opportunities.

Sessions dedicated to Anaerobic Digestions, Waste Management in Developing Countries and to WEEE were highly participated. Workshops on Waste and Art and on Education in Waste Management field got a huge success, indicating that new frontiers are gaining increasing interest among the stakeholders.

WEEE management was one of the issues addressed by the highest number of papers. Topics were related to: Collection & Management Strategies, Recent Developments in Recycling Technologies, Environmental Impact, Waste to Resource: Recovery and Re-use, Critical Metals in WEEE, Life Cycle Assessment, International Reports, Critics and Best Practice



Opening Session at Sardinia 2015

Guidelines.

Due to the great interest on electrical and electronic waste, Waste Management Journal (WM Journal), the official journal of the International Waste Working Group (IWWG), published by Elsevier, will publish a Special Issue on "*WEEE: Booming for Sustainable Recycling*" based on a set of selected papers from Sardinia 2015.

Following the high number of proposals received for presentation during the workshop on "EU proposals and projects", a full-day parallel event was set up: roundtable meetings to deepen the discussion on received ideas were organized and received great success. Roundtables were primarily conceived as a networking opportunity to develop ideas and find potential collaboration on specific issues. Facilitators were present to give information about

suitable calls, answered questions linked to call areas and provided details on legal and procedural conditions.

As an integration to the thick program of the symposium, the conference was enriched with a 2-day parallel event on "Waste Architecture / Rehabilitation of Landfills" coordinated by *ARCOPLAN*, with the scientific support of the Department of Industrial Engineering, University of Padova. The Workshop represented the first of a series of thematic seminars on environmental design and interventions related to the collection, disposal and management of waste. This first appointment focused mainly on the architectural, functional and landscape rehabilitation of old landfills.

The conference has been closed by a roundtable discussion on Waste Management in Mediterranean countries. Prof. Rainer Stegmann (Hamburg University of Technology - Germany) addressed the issues related to management in specific cities, in refugees camps and on islands of Mediterranean; Prof. Rosaria Chifari (Autonomous University of Barcelona - Spain) focused on the situation in Naples; Prof. Evangelos Gidarakos (Technical University of Crete - Greece) discussed on waste management in Greece, a country with 6,000 islands and islets; Prof. Muhammed Alamgir (Khulna University of Engineering & Technology - Bangladesh) reported the situation in Bangladesh.

Social events

The great success of this edition was due to the high scientific relevance of presented works, as well as the rich "menu" of social activities, most of which centered on Chinese culture. China, in fact, was the Guest Country of Sardinia 2015.

On Sunday 4th October, delegates were welcomed by an aesthetic Chinese cocktail, which offered the possibility meet old and new friends and colleagues in a relaxing atmosphere, surrounded by the lively Chinese colors and atmosphere.

The Ping Pong tournament scheduled on the first evening of symposium received a great success both from Chinese delegates and not.

Participants played together, without considering the level of expertise. There was a unique, real winner: amusement!

Probably the most unique experience for all participants was the possibility to listen the fascinating music played by the Landfill Harmonic Orchestra. Landfill Harmonic is a group of young musicians that live next to one of South America's largest landfills. This orchestra plays music from instruments made entirely out of garbage. Favio Chávez, the director of the Orchestra, together with 15 musicians, entertained the public with their amazing melody.

Another demonstration that waste is not only an issue!

The traditional football was extremely participated in this edition, with several teams composed by participants coming from different countries taking part in a mini-tournament. Players had a lot of fun, as well as supporters!

Following the huge success of the show in the 2009, 2011 and 2013 editions, another "Sardinia's Got Talent" was organized, during which delegates attending the Symposium as well as staff members came up on a real stage and showed their talents and felt like true artists - at



Landfill Harmonic Orchestra Concert at Sardinia 2015

least for one night!

As per tradition, to celebrate the closure of the conference week, all delegates were invited to a formal gala dinner in the elegant Sala Bianca at Forte Village. Participants had the possibility to taste typical Sardinian products as well as excellent Sardinian wines. During the Gala Dinner the "Life for Waste" Award was officially presented to Prof. Werner Bidlingmaier and Prof. Bernd Bilitewski, and best paper awards delivered to the winners of the different categories:

- Best Chinese Paper Award: "Estimation of volatile compounds emissions from the working face of large anaerobic landfills in China", by Y. Liu, H. Wang and D. Li (China).
- John Pacey Award - Award for the best paper on landfill gas management: "Regulating landfills using measured methane emissions: a UK perspective", by M. Bourn, R. Robinson and F. Innocenti (UK).
- Luigi Mendia Award - Award for the best paper on waste management policy: "Policy mix in deposit-refund systems", by D. Numata (Japan).
- Kriton Curi Award - Award for the best paper on developing country waste management issues "Environmental information system about the situation of urban solid waste within the Mexican municipalities", by G. Garcia, D. Castro-Frontana (Mexico).
- Giovanni Bozzini Award - Italian best paper Award: "Production of a new fertilizer from compost, organic farm residues and biochar", by A. Dall' Ara, S. Serranti, G. Bonifazi, L. Billi, A. Trella, C. G. Izquierdo (Italy).
- Alberto Rozzi Award - Award for the best paper on biological treatment: "Temporal variation in bacterial communities of full-scale thermophilic anaerobic digester treating food waste-recycling wastewater", by J. Lee, T. Koo, S.G. Shin, B. Hwang, S. Hwang (South Korea).
- Best Poster Award: "Comparison of unwillingness we feel to act recycle-friendly actions in PET bottle disposal and real action ratios", by Q. H. Jiang, S. Suzuki, F. Takahashi (Japan).

A special word of thanks at the end of this five-days conference should be addressed to Prof. Raffaello Cossu (University of Padova) and to his competent and enthusiastic team for their endless effort towards a real scientific and social success of the event.

Reported by

Daniele Cazzuffi (AGI-IGS President and IGS Past President) and by Roberto Raga (University of Padova and Scientific Secretary of Sardinia 2015)