

January 9<sup>th</sup>, 2018

Dear members and friends,

The MatER Study Center, sister organization of the Global WTER Council, wishes you a Happy and Successful 2018.

2017 has been for sure a rich year, full of novelties and original content in the history of our study center since its beginning in 2011. This could be represented most of all from two key events: the 3<sup>rd</sup> edition of the MatER Meeting and the lunch of the new MatER website, completely refurbished as in the graphic as in the overall structure.

On May 22<sup>nd</sup> - 23<sup>rd</sup> the MatER Meeting 2017 took place at the Piacenza Campus of the Politecnico di Milano over "**Innovation & Trends in Waste Management**".

This biannual conference arises from the fundamental goal of MatER that is providing a thorough, objective representation of technologies and policies for **material and energy recovery from waste**, covering the regulatory, strategic and technical-scientific aspects of sustainable waste management. The event has been organized with the scientific support of DICA (Department of Civil and Environmental Engineering) and Energy Department of the Politecnico di Milano.

For the first time the collection of the works has been managed entirely through a call-for-abstracts and their evaluation has been undertaken by a scientific committee according to their quality, innovation and relevance of the subject, together with the need to preserve a balance of topics within the sessions.

We decided to implement for the first time a registration form to manage all the applications totally on-line, developing also a dedicated website for the event using the platform *EasyChair* that we have been using to collect at the same time the works of the authors.

The detailed program, together with the short abstract descriptions, can still be consulted at [the dedicated page of the event](#).

Some works have been illustrated during the oral sessions and the rest have been presented in 4 poster sessions, distributed among the 2 days.

The focus of the 4 oral sessions have been:

- 1. Strategies and perceptions on waste management;*
- 2. Closing the loop: potential and critical issues;*
- 3. Processes and technologies for energy recovery;*
- 4. Processes and technologies for material recovery.*

Furthermore, during the afternoon of May 22<sup>nd</sup> we introduced a special panel session concerning the economic regulation of waste management, which is becoming a relevant topic especially in Italy. After an overview concerning the regulation of waste management tariffs, a round table with institutional guests of the AGCM (Italian

Competition Authority), the AEEGSI (Italian Regulatory Authority for Electricity Gas and Water), UTILITALIA, ATERSIR Emilia Romagna, HERAMBIENTE and CONAI have been set up. At the end of the round table, we had the pleasure and the honor to host the **Italian Minister of the Environment**, Gian Luca Galletti, who gave the closing speech of the economic session.

The conference offered a broad overview on the waste management situation in Italy with the possibility to compare it as well with some other countries. The speakers outlined the main technological, environmental and economical challenges that are going to be faced to improve the sustainability of the waste management system and some proposal on how to tackle them.

Finally, another novelty of the 3<sup>rd</sup> edition has been the introduction of the technical visit of a waste treatment facility, hosted this year on May 24<sup>th</sup> at the WtE plant of Piacenza of IREN Ambiente.

Here are in summary some of the **#MatER17**'s numbers:

- *~130 participants over 8 nations coming from different professional realities (university, industry, public administrations, etc.)*
- *24 speeches over 2 days*
- *13 Posters exposed*
- *4 international Keynote lectures*
- *1 round table with institutional guests*

[Some pictures with the highlights of the event can be seen in our website at \*\*this link\*\*.](#)

We really would like to thank all the WTERT network participants that took part to the event and gave a significant contribution to make this event successful with us. It has been a pleasure to share this important moment with all of you and we really hope to see you again (and many more!) for the 4<sup>th</sup> edition in 2019.

The second great change that made this year remarkable for our study center involved the communication aspect. In 2017 in fact we completed the making of and the activation of our new website, completely refurbished not just esthetically but also in the concept in order to offer a more immediate and comprehensive explanation over the recovery of material and energy from waste.

An analysis and planning of the digital strategy of MatER had been previously done by Quaerys Srl, which is an innovative start-up operating in the fields of social media monitoring and big data content analysis. As we wanted to pay a special attention to our communication side, we then received the support from Quaerys to define our communication strategy and the redesign of the MatER website.

We decided to implement it in Wordpress, a free and open-source content management system, but very common in modern websites. It took us quite a significant time to get familiar with this new tool, but although some work and improvements still have to be done, we are very satisfied with **our new communication channel**.

We are also very glad to announce that in 2017 we renovated the partnership with the six waste management companies (A2A, Brianza Energia e Ambiente, HERA Ambiente, IREN Ambiente, Linea Group Holding, Hest Ambiente), members of the MatER Coordinating Committee, that continue to support our work, guaranteeing the necessary funding to go further with our research activities. Moreover it's a pleasure to report you that in 2017 we signed the collaboration with a new industrial partner, represented by SILEA Spa (Società Intercomunale Lecchese per l'Ecologia e l'Ambiente per Azioni), a waste management company based in Valmadrera, province of Lecco, in the northern part of Italy.

On the academic side, in the second half of 2017, we also had the possibility to truly materialize our collaboration inside the Global WTER Network hosting as a **visiting researcher Demetra Tsiamis**, Associate Director of the Earth Engineering Center at the City College of New York City. It has been a pleasure for all of us hosting Demetra throughout our facilities at LEAP for the last 6 months as an occasion of professional enrichment, knowledge transfer and scientific exchange. In particular Demetra, who directly collaborates with Prof. Marco Castaldi in the USA, carried out a meticulous work over the municipal waste comparison between the EU and the US, trying to deeply understand the waste statistics methodologies underneath.

Concerning our projects, in 2017 our research activities addressed as usual issues raised by private companies and public authorities. Here is a short list of the **most important areas of investigation**, but we are attaching to this report a document with a more detailed description of them:

- *Modelization of WtE plants and assessment of their performance;*
- *Environmental evaluation of Construction & Demolition Waste management;*
- *Recovery of Bottom Ash from Waste Incineration;*
- *High-Temperature measurements in WtE plants;*
- *Measurement of Ultrafine and Nanoparticles Emissions;*
- *Technical and economic assessment of novel technologies for the thermal treatment of waste.*

A further activity concerns the renewal of the collaboration with Lombardy Region, regarding the evaluations of innovative plants, the environmental assessment of the regional C&D waste management system, the organization of workshops over the energy balance of incinerators and other topics of interest, considerations and proposals over the EU guidelines in the field of BREF revision, etc.

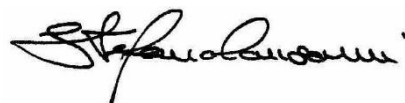
During this year, we constantly monitored and analyzed the most important Italian and international updates on waste management (you can find all of them on our website, in the "News&Events" section). Our MatER researchers published various international papers about waste management, recovery and LCA activities: a list of them can be found on the "Our Study" section of the website.

As an example, Mario Grosso and Lucia Rigamonti, members of the scientific committee of the MatER Study Center, cured the editorial of *WASTE MANAGEMENT & RESEARCH* of August 2017, entitled "*Circular economy, permanent materials and limitations to recycling: Where do we stand and what is the way forward?*".

As part of our work, our MatER researchers constantly took part all over the year to many national and international **meetings**, with **oral presentations**, posters and related full paper available in the meeting records. Here below is a short list of the most significant ones with the name of the speakers and title of the work:

- ❖ *11<sup>th</sup> European Conference on Industrial Furnaces and Boilers* (April 2017 - Algarve, Portugal): "*An Optimal Algorithm to assess the compliance with the  $T_{2s}$  requirement of Waste-to-Energy facilities*" (F. Viganò)
- ❖ *4<sup>th</sup> International VDI Conference* (May 2017 - Copenhagen, Denmark): "*Materials and energy from waste - experiences from Italy*" (M. Grosso)
- ❖ *PREWIN Network Meeting 2017* (June 2017 - Copenhagen, Denmark): "*Has the increased fraction of industrial waste in WtE plants an effect on the emissions?*" (F. Viganò)
- ❖ *Joint Conference ISIE and ISSST* (June 2017 - Chicago, USA): "*C&D Waste Management in Lombardy Region*" (L. Rigamonti)
- ❖ *IRRC - International Recycling and Recovery Congress* (September 2017 - Vienna, Austria): "*Impact of the increased fraction of industrial waste on the emissions from waste-to-energy plants*" (F. Viganò);
- ❖ *SARDINIA 2017* (October 2017 - Cagliari, Italy): "*C&D Waste Management in Lombardy Region*" (L. Rigamonti)
- ❖ *4<sup>th</sup> International Conference on Final Sinks* (October 2017 - Kyoto, Japan): Keynote Speech "*Waste prevention and re-use: experiences, environmental assessment and challenges*" (M. Grosso);
- ❖ *CEWEP STAC Meeting* (November 2017 - Paris, France): "*Optimization of IWMSs: Methodology and preliminary findings*" (S. Consonni).

With the aim and the hope to reach further achievements together in 2018,  
Our Best Wishes for a Fruitful New Year to all WTERT sister organizations!



Prof. Stefano Consonni

Chair of the MatER Study Center