

## MatER & Final Sinks Meeting 2021 | 7-8-9 June

# Recovery & Final Sinks for an Effective Waste Management

Virtual Event

**Monday, June 7<sup>th</sup> 2021**

**MORNING | PLENARY SESSION**

### Session 1: Waste Management

Chairman: *prof. Stefano Consonni*

**9:15 Welcoming Addresses & Introduction**

**9:30 KEYNOTE LECTURE: How to measure the quality of materials management and recycling?**

10:00 Waste Management in Emilia-Romagna Region

10:20 Waste Management in Lombardia Region

10:40 Waste Management in Piemonte Region

11:00

Break

11:20 The increasing amount of bioplastics rises challenges in the management of organic municipal solid wastes through biological systems

11:45 The role of bioplastics in packaging and their impact in the waste management system

12:10 Equivalent inhabitants: a new parameter in the waste sector

12:35 How the environmental sustainability of WEEE plastics management can be enhanced: an LCA study

13:00

Break

*Stefano Consonni - MatER/Politecnico di Milano*

*Helmut Rechberger - TU Wien, Austria*

*Giuseppe Bortone, ARPAE Emilia Romagna*

*Elisabetta Confalonieri, Regione Lombardia*

*Paola Molina, Regione Piemonte*

*Mirko Cucina - Un. Milano*

*Giovanni Gadaleta - Politecnico di Bari*

*Chiara Magrini - Un. Bologna*

*Giovanni F. Cardamone - Un. Campania*

**AFTERNOON | PARALLEL SESSIONS**

### Session 2.A: Biowaste & Biogas

Chairman: *Prof. Mario Grosso*

**14:30 KEYNOTE LECTURE - Anaerobic digestion as a tool for circular bioeconomy**

15:00 Biowaste mass balance analysis and future prospects in Campania region

15:25 Bioenergy from green waste through anaerobic digestion: substrate, biogas, and digestate characterisation at lab-scale

15:50 **Flash Presentation Poster#1** - Environmental evaluation of hydrothermal carbonization applied to the organic fraction mechanically separated from the residual MSW

16:00

Break

16:20 Evaluation of the biochemical methane potential of intermediate and final outputs from biostabilisation MBT

16:45 Dry anaerobic digestion for biopolymers recovery from organic fraction of municipal solid waste

17:10 Pectin green extraction from citrus waste: preparation, characterization and future applications of pectin biocomposites

*David Bolzonella, Un. Verona*

*Alberto Grosso - ARPA Campania*

*Adele Folino - Un. Urbino Carlo Bo*

*Lidia Lombardi - Un. Niccolò Cusano*

*Fabio Tatano - DiSPeA, Un. Urbino Carlo Bo*

*Elena Rossi - DESTEC - Un. Pisa*

*Domenico Zannini - IPCB-CNR*

### Session 2.B: Innovation & Circular Economy

Chairman: *Prof. Lucia Rigamonti*

**14:30 KEYNOTE LECTURE - New strategies, trends and financing models for Circular Economy**

15:00 Waste logistics optimisation in practice: bringing industry 4.0 paradigms into operations management

15:25 Environmental impact of refrigerant during maintenance and disposal through Montreal Protocol and its amendments in Taiwan

15:50 **Flash Presentation Poster#2** - Mapping industrial waste recyclability: a circular economy approach

16:00

Break

16:20 Development of innovative circular cementitious materials containing waste

16:45 Social Cost Benefit Analysis of Concrete Waste Recycling in Vietnam

17:10 An autonomous and integrated evaluation framework for retrofitting resource recovery facilities

*Daniela Sani, Art-ER*

*Matteo Pozzi - Optit srl*

*Fei Chiao Yang - National Taiwan University*

*Qudsia Kanwal - Tsinghua University, China*

*Alice Sirico - Un. Parma*

*Ngoc Han Hoang - National Institute for Environmental Studies, Vietnam*

*Rui-An Lin - National Taiwan University*

17:35

Final Discussion & First Day Closing

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## MatER & Final Sinks Meeting 2021 | 7-8-9 June

# Recovery & Final Sinks for an Effective Waste Management

Virtual Event

### Tuesday, June 8<sup>th</sup> 2021

#### MORNING | PLENARY SESSION

##### Session 3: Material Recovery

Chairman: Prof. Stefano Cernuschi

|              |   |  |
|--------------|---|--|
| <b>9:30</b>  | <b>KEYNOTE LECTURE: Comparing the costs and benefits of virgin and urban mining</b>   | Xianlai Zeng - Tsinghua University, China                  |
| <b>10:00</b> | Case studies: Integrated residual municipal waste treatment combining material from waste, organic recovery and energy from waste                                   | Christophe Cord'homme - CNIM, France                       |
| <b>10:25</b> | Inclusion of the quality of recovered materials in waste management LCA studies   | Lucia Rigamonti - Politecnico di Milano                    |
| <b>10:50</b> | <b>Flash Presentation Poster#3</b> - Resilience reinforcement and circular transition of cities by role transformation of water system hotspots with EDI technology | Li-Heng Chen - National Taiwan University                  |
| <b>11:00</b> | <b>Break</b>  |  |
| <b>11:20</b> | Quality constraints for steel scrap recycling- A detailed analysis of scrap quantities and qualities arising the European Union                                     | Johann Fellner - TU Wien, Austria                          |
| <b>11:45</b> | The environmental performance of enhanced metal recovery from dry municipal solid waste incineration bottom ash   | Melanie Haupt - ETH Zurich, Switzerland                    |
| <b>12:10</b> | Salt recovery potential of calcium-based APCr from MSWI   | Ekaterina Korotenko - ICPF, Czech Republic                 |
| <b>12:35</b> | Lions2Life: from waste batteries to sustainable distributed energy storage  | Filippo Stringa - ERION COMPLIANCE ORGANIZATION S.C.A R.L. |
| <b>13:00</b> | <b>Break</b>  |  |

#### AFTERNOON | PLENARY SESSION

##### Session 4: Waste to Energy

Chairman: Prof. Federico Viganò

|              |   |  |
|--------------|---|--|
| <b>14:00</b> | <b>KEYNOTE LECTURE: Waste-to-Energy roadmap towards the European Green Deal</b>   | Ella Stengler - Managing Director of CEWEP |
| <b>14:30</b> | An industrial symbiosis - based solution to face integrated management of waste and wastewater in large Mediterranean cities                                | Giuseppe Mancini - Un. Catania             |
| <b>14:55</b> | From Waste-to-Energy to Waste-to-Gas - a possible new scenario in the energy recovery from municipal solid waste  | Antonio Castorini - TBF+Partner AG         |
| <b>15:20</b> | Comparing alternative options for residual municipal solid waste recovery   | Lidia Lombardi - Un. Niccolò Cusano        |
| <b>15:45</b> | <b>Flash Presentation Poster#4</b> - Analysis of working principles of modern controllers in combustion optimisation on forward moving reciprocating grates | Damir Zibrat - Technikgruppe, Austria      |
| <b>15:55</b> | <b>Break</b>  |  |
| <b>16:15</b> | The effect of syngas steam concentration on the tar removal by activated carbons  | Carmine Boccia - Un. Campania              |
| <b>16:40</b> | Incineration bottom ash potential and utilization in the Czech Republic   | Michal Šyc - ICPF, Czech Republic          |
| <b>17:05</b> | ESSEVA study by SVDU - Mercury behaviour, monitoring and treatment in Energy-from-Waste facilities  | Hubert de Chefdebien - CNIM, France        |
| <b>17:30</b> | <b>Final Discussion &amp; Second Day Closing</b>  |  |

### Wednesday, June 9<sup>th</sup> 2021

#### VIRTUAL TECHNICAL TOUR

Chairman: Prof. Mario Grosso

|              |  |                                   |
|--------------|--|-----------------------------------|
| <b>09:00</b> | <b>Virtual room opening</b>                                  |                                   |
| <b>09:00</b> | <b>Virtual Tour WtE Parma</b>                                | Stefania Sabatino - Iren Ambiente |
| <b>10:00</b> | <b>Unconventional Measurement</b>                            | Gilles Campagnola - Envea         |
| <b>11:00</b> | <b>Break</b>   |                                   |
| <b>11:30</b> | <b>Modern plastic film sorting in the recycling industry</b> | Pietro Navarotto - Stadler        |
| <b>12:00</b> | <b>Gruppo CAP Presentation</b>                               | Andrea Lanuzza - Gruppo CAP       |
| <b>13:00</b> | <b>Meeting Closing</b>                                       |                                   |

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MatER Study Center (Materials and Energy from Refuse) is a project undertaken by LEAP s.c.a r.l with the scientific support of DICA and the Energy Department of the Politecnico di Milano, with the coordination of Utilitalia.

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The key objective of MatER is to provide a rigorous representation of technologies and policies adopted for the recovery of materials and energy from waste, helping to identify the most effective choices for a sustainable waste management.