

**14-16  
MAY 2019**

**HANOVER,  
GERMANY**

Conference with simultaneous translation  
**ENGLISH - FRENCH - GERMAN**

## **8** INTERNATIONAL SYMPOSIUM MBT, MRF & RECYCLING

**RESOURCES AND ENERGY FROM WASTE  
CONFERENCE, SEMINAR, EXHIBITION AND  
SITE VISITS**

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# WASTE-TO-RESOURCES 2019

## CONFERENCE AND EXHIBITION



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# WASTE-TO-RESOURCES 2019

THE DAY BEFORE THE CONFERENCE, 13<sup>TH</sup> OF MAY

## INTRODUCTORY SEMINAR TO MECHANICAL-BIOLOGICAL TREATMENT IN ENGLISH LANGUAGE.

9.30 – 18:00. Presenters: Dr. Matthias Kuehle-Weidemeier, Dr. Ludwig Streff

Seminar limited to 20 persons. Coffee breaks and lunch included.

### SEMINAR TOPICS:

Selection of appropriate waste treatment technologies

Introduction, what is MBT, targets

MBT technologies and examples

- Mechanical treatment

- Biological treatment

  - Aerobic technologies

    - MBT prior to landfill

    - Biological drying for refuse derived fuel (RDF) production

  - Combined anaerobic-aerobic technologies

    - Partial flow dry digestion

    - Full flow dry digestion

    - Partial flow wet digestion

    - Full flow wet digestion

    - Percolation plants

- MBT related technologies

  - Wet mechanic separation technology

  - Mechanical-physical stabilisation

Quality supervision of the major solid MBT output fractions and MBT process control

- Taking representative samples, analytics, which parameters make sense?

  - Landfill material

  - RDF

Control of Gaseous emissions

- Emitted substances, variation of emissions during the process

- Encapsulation

- Air management

- Biofilter

- Regenerative thermal oxidation (RTO)

Practical experience with MBT in Germany

- History and legal background

- Results of an evaluation of all German MBTs in 2007

- Current situation

Landfilling of MBT output

Is agricultural application of MBT output a good solution?

MBT compared to other technologies

- Incineration

- Bioreactor landfill

Costs of MBT

Adoption of MBT to the local situation





# WASTE-TO-RESOURCES 2019

TUESDAY, 14<sup>TH</sup> OF MAY 2019

## 9:00 – 11:00 BLOCK 1

### MBT AND RECYCLING

1. Potential of waste management to achieve the recycling rates of the EU Waste Framework Directive. *C. Böhm, ARGUS - Statistik und Informationssysteme in Umwelt und Gesundheit GmbH, Berlin, Germany*
2. Recyclingregion Harz – The education offensive. *P. Hauschild, University of Applied Sciences Nordhausen, Ger.*
3. Implementation of the requirements of the European Best Available Technique Reference Documents (BREF) for the waste treatment industries in Germany. *W. Butz, Umweltbundesamt, Dessau, Germany*
4. Zero Waste: Material recovery instead of incineration and landfilling of MBT output fractions. The way it technically and economically works. *M. Kuehle-Weidemeier, ICP Ingenieurgesellschaft Prof. Czurda & Partner mbH, Karlsruhe / Wasteconsult international, Langenhagen, Germany*

## 11:30 – 13:30 BLOCK 2

### CLIMATE PROTECTION BY CIRCULAR ECONOMY

5. Recycling instead of landfilling – A contribution to climate protection. *W. P. Bauer, ia GmbH, Munich, Germany*
6. Waste management and climate protection internationally (Brazil). *C. Buchenberger, K. Fricke, C. Pereira, Technical University Braunschweig, Germany*
7. GHG reduction in waste management in Brazil: Life cycle and IPCC approaches and its preliminary results. *H. Cardoso Moreira, GIZ, Brasilia, Brazil*
8. Further development of mechanical-biological waste treatment (MBT) with the goals of optimizing resource efficiency and minimizing greenhouse gas emissions. *K. Ketelsen, K. Kanning, iba GmbH, Hannover, requested*

## 14:45 – 16:45 BLOCK 3

### CURRENT PLANTS AND SYSTEM CONCEPTS

9. Conversion of the MVA Stelling Moor into a center for resources and energy with sorting plant, fermentation plant, biogas upgrading and refuse-derived fuel power plant. *V. Höck, Stadtreinigung Hamburg*
10. New material-from-waste facility in PARIS 17. *C. Cord'Homme, CNIM Group, Paris, France*
11. Design of MBT in emerging countries, an example in Tunisia. *V. Herbst, L. Streff, K. Abdmouleh, ICP Ingenieurgesellschaft Prof. Czurda & Partner mbH, Karlsruhe, Germany*
12. 1.5 years experience with 1000t/d MBT Mumbai (India). *B. Gamerith, Compost Systems, Wels, Austria*

## 17:15 – 19:15 BLOCK 4

### CONCEPTS FOR CIRCULAR ECONOMY

13. Solid Waste Management in Germany: Deriving Lessons for India. *S. Sugandh, D. Weichgrebe, University of Hanover, Germany*
14. Role of Environmental Technologies and Partnerships in Waste Management. *S. Dutta, S&M Engineering LLC, Crofton, MD, USA*

### LIQUEFACTION AND CARBONATION OF WASTE

15. Hydrothermal carbonation (HTC) & vapothermal carbonation (VTC). Key technologies in worldwide waste treatment. *A. Kuhles, GRENOL GmbH, Ratingen-Meiersberg, Germany*
16. How to REACH Circular Economy – liquid resource from SRF to feed BASF production. *N. Karpensky, Recenso GmbH, Remscheid, Germany*

## 19:45 DINNER

# WASTE-TO-RESOURCES 2019

WEDNESDAY, 15<sup>TH</sup> OF MAY 2019

## 9:00 – 11:00 BLOCK 5

### WASTE ANALYSIS

17. Real-time analytics to determine the quality of input in waste pretreatment plants. *T. Weißenbach, Montanuniversität Leoben, Austria*

### PRODUCTION, OPTIMIZATION AND UTILIZATION OF ALTERNATIVE FUELS

18. Production of alternative fuels in Latin America – Possibilities and Challenges. *R. Craizer, BlackForest Solutions GmbH, Berlin, Germany*
19. Sorting process and energy recovery possibilities of hospital waste in Brazil using the example of the hospital association SINDIHOSPA in Porto Alegre. *S. Kohlmann, envitecpro GmbH, Rostock, Germany*
20. Development of indigenous robotic integrated MSW treatment facility - waste to energy. *M. Patil, Vellore Institute of Technology, Vellore, India, B. S. Patil, Indian Institute of Technology Bombay, Mumbai, India*

## 11:30 – 13:30 BLOCK 6

21. Biological Drying of MSW for RDF production in MBT plants with membrane covered boxes plus biofilter. *A. Huber, STRABAG Umwelttechnik GmbH, Dresden, Germany*
22. MBT Sofia: Lessons learned. *L. Streff, M. Kühle-Weidemeier, A. Grooterhorst, ICP Ingenieurgesellschaft GmbH, Karlsruhe, Germany*
23. Use of SRF (solid recovered fuel) and RDF (refuse derived fuel) in Europe. *F. Michel, RDC Environment, Brussels, Belgium*
24. Small & medium WTE-plants for decentral thermal treatment of RDF and industrial waste. *C. Eder, WEHRLE-WERK AG, Emmendingen, Germany*

## 14:45 – 16:45 BLOCK 7

25. Substitute use and implementation of new exhaust gas treatment technologies in the Austrian cement industry. *G. Mauschitz, Technical University of Vienna, Austria*
26. Variants of the screening of the fine fraction to improve the SRF quality - possibilities and effects. *A. Curtis, Montan University Leoben, Austria*
27. Coprocessing as a tool for the sustainable waste management in Brazil. *C. Pereira, K. Fricke, C. Buchenberger, Technical University of Braunschweig, Germany*
28. Different aeration methods during biodrying of mixed municipal solid waste. *V. Pilnáček, Charles University, Prague, Czech Republic*

## 17:15 – 19:15 BLOCK 8

29. Optimizing secondary fuel combustion in cement production by NIR spectroscopy. *J. Lemke, R. Teutenberg, S. Zühlsdorf, thyssenkrupp Industrial Solutions AG, Beckum, C. Steckert, LLA Instruments GmbH & Co. KG, Berlin*

### FIRE SAFETY AND OCCUPATIONAL SAFETY IN WASTE TREATMENT AND RECYCLING PLANTS

30. Fire and explosion protection in the waste management and recycling industry. *B. Busemann, DMT GmbH & Co. KG, Dortmund, Germany*
31. Prevention of fire hazards and business interruptions in recycling plants: Infrared camera units for temperature monitoring in fire protection with automatic control of extinguisher systems. *M. Müller, Orglmeister Infrarot-Systeme GmbH & Co. KG; Walluf, Germany*
32. Molds, dusts and diesel engine emissions (DME) at workplaces in waste management. State of the art and development from 1996 to 2018. *T. Missel, Labor für Arbeits- und Umwelthygiene, Isernhagen, Germany*

## 19:45 DINNER

# WASTE-TO-RESOURCES 2019

THURSDAY, 16<sup>TH</sup> OF MAY 2019

## 8:30 – 10:30 BLOCK 9

### ORGANIC WASTE FRACTIONS AND ANAEROBIC WASTE TREATMENT

33. Food waste statistics (generation and treatment) in Slovenia. *T. Vidic, Statistical Office of the Republic of Slovenia*
34. Quantitative Survey of Organic Waste Generated In Oman and the Feasibility for Usage in Biogas Production Plants. *M. A. Al-Hinai, Oman Environmental Services Holding Company – be'ah, Muscat, Oman*
35. Mechanical wet pre-treatment efficiency of OFMSW for biogas production. *A. do Carmo Precci Lopes, W. Müller, A. Bockreis, University of Innsbruck, Austria*
36. The impact of pretreatment and wet/dry screening on impurities in compost derived from MSW. *L. De Baere, W. Six, B. Mattheeuws, OWS nv, Gent, Belgium*

## 11:00 – 13:00 BLOCK 10

### BIOGAS

37. Optimized exploitation of the biogas potential of separately collected organics through targeted mechanical pre-processing. *C. Jansen, RWTH Aachen University, Germany*
38. Biological desulphurisation filter for biogas. *C. Bogenrieder, ZÜBLIN Umwelttechnik GmbH, Stuttgart, A. Maile, STRABAG Umwelttechnik GmbH, Düsseldorf, Germany*
39. Regional concepts for a direct valorization of biogas. Case studies in Austria and Canada. *H. Kübler, R. Pellegrini, T. Rahn, S. Schulte, BTA International GmbH, Pfaffenhofen, Germany*

### LEACHATE FROM WASTE TREATMENT

40. Treatment of Waste Derived Liquids. *B. Fitzke, WEHRLE Umwelt GmbH, Emmendingen, Germany*

## 14:00 – 16:00 BLOCK 11

### PLASTICS AND OTHER WASTE FRACTIONS

41. First investigation of the occurring stresses during the collection, transport and unloading of waste electrical and electronic equipment. *R. Brüning, J. Wolf, Dr. Brüning Engineering UG, Brake, Germany*
42. Valorization of Deinking Sludges from wastepaper recycling. *M. Kolade Ogun, I. Körner, Hamburg University of Technology, Germany*
43. Neue Recyclingtechnologie mit Löseverfahren und mischfaserverstärkten Kunststoffen. *R. Schu, EcoEnergy GmbH, Göttingen, Germany*
44. Business Model: Converting PET Waste to Metal-Organic Frameworks (MOFs). *J. Ren<sup>1,2</sup>, X. L. Dyosiba<sup>1,2</sup>, N. Musyoka<sup>2</sup>, H. Langmi<sup>2</sup>, M. S. Onyango<sup>1</sup>, <sup>1</sup>Energy Centre, Council for Scientific and Industrial Research (CSIR), Pretoria, <sup>2</sup>Tshwane University of Technology, Pretoria, South Africa*

## 16:30 – 18:30 BLOCK 12

### PROCESSING AND RECYCLING OF MINERAL WASTE

45. Use of air separation tables for density sorting of waste materials. *A.P. Kindler, J.J. Cebrian de la Torre, M. Trojosky, Allgaier Process Technology GmbH, Uhingen, Germany*
46. Analysis of single stream and drop off glass collection systems using LCA: A case study of the City of Guelph, Canada. *K. Gatzos, B. Abbassi, University of Guelph, Canada*
47. Waste glass reuse in geo-polymer binder prepared by combining fly ash and meta kaolin. *A. Bouchikhi, M. Benzerzour, N.-E. Abriak, W. Maherzi, Y. Mamindy-Pajany, IMT Lille Douai, France*
48. Utilization of construction ceramics industrial wastes. *N. F. Youssef, Raw Building Materials and Processing Technology Research Institute. Housing and Building National Research Center (HBRC), Giza, Egypt*

18:30 END OF THE CONFERENCE

# WASTE-TO-RESOURCES 2019

## 17<sup>TH</sup> OF MAY: SITE VISIT MBT IN THE WASTE MANAGEMENT CENTRE OF HANOVER

The municipal waste management centre comprises the former landfill, composting plant for green waste and biowaste from households (source separated collection) and the MBT plant with full flow dry anaerobic digestion. Next door there is the private waste incinerator operated by EON. The site visit is not included in the free ticket for authors.



## REGISTRATION FOR CONFERENCE, SEMINAR AND SITE VISIT:

Registration is done online. Make use of the early bird rates until the 25<sup>th</sup> of February! Please click on the following link:

<https://px.convent-registration.de/cgi-bin/regform.exe?company=76227&Event=WASTE19&Language=1&Entry=9>

Participation fees net (add 19% German VAT)	Until 25/2/2019	From 26/2/2019
14 May First conference day (day ticket)	199 €	249 €
15 May Second conference day (day ticket)	199 €	249 €
16 May Third conference day (day ticket)	199 €	249 €
3-day-ticket 14-16 May	529 €	689 €
3-day-ticket for students (proof required!) up to 29 years	159 €	239 €
17 May Site visit	85 €	129 €
13 May MBT introductory seminar in English language	249 €	299 €
13-16 May MBT introductory seminar and conference	749 €	949 €
13-17 May MBT introductory seminar, conference, site visits	835 €	1029 €

Included services: Lunch (inclusive 1 soft drink), dinners when indicated in the brochure (inclusive 1 soft drink or beer) and 2 coffee breaks. No food but a bottle of water included in the site visit. The third day includes coffee breaks and lunch. All delegates receive an issue of the conference proceedings. Conference program and program sequence are subject of alterations.

Organizer of seminar, conference and site visit:

ICP Ingenieurgesellschaft Prof. Czurda und Partner mbH; Auf der Breit 11, 76227 Karlsruhe, Germany

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# WASTE-TO-RESOURCES 2019

## VENUE AND ACCOMMODATION:

Wienecke XI. Hotel, Hildesheimer Str. 380, 30519 Hannover, Tel: +49 (0)511 / 126 110  
FAX +49 (0)511 / 12 611 511 <https://www.wienecke.de/>

The conference hotel Wienecke XI. has a limited contingent of rooms for conference participants (Single room incl. breakfast 95€/night; double incl. breakfast 125€/night).

Other hotels:

<http://www.waste-to-resources.eu/tagungsort-unterkunft.html>

## ARRIVAL:

Hotel website with direction and parking information:


<https://www.wienecke.de/en/service/directions-parking.html>

## PUBLIC TRANSPORT:

Starting from Hanover Airport:

 Take urban railway (“S-Bahn”) S5 direction Hameln and get off the train at Hanover main station (“Haupt-bahnhof”). Go down 2 floors to the Underground station.

Starting from Hanover main station (DB):

 Take Underground line 1 direction Laatzen/Sarstedt or Underground line 2 direction Rethen. Deboard at the station Wiehbergstrasse. 1 minute foot path to Hotel Wienecke XI.

## BY CAR:

Take Motorway A2 or A7 until interchange Hanover east (“Autobahnkreuz Hannover Ost”). Follow Motor-way A7 heading south (if you are coming from the south, your description starts now):

Leave the Motorway A7 at exit Hannover – Anderten. Follow road B65 (“Suedschnellweg”) direction Hanover fair (“Messe”) until exit Doehren / Zentrum. Turn left at the first traffic light. Now you have reached the Hildesheimer Strasse. The conference Hotel “Wienecke XI.” is 2 km ahead (direction south) on the right side of the road.