

DAY 1 / MONDAY
OCTOBER 2

MONDAY OCTOBER 2

AFTERNOON

SESSION A1 / 15:30-17:10

IWWG ACTIVITIES IN WASTE MANAGEMENT

Chair / *Presidente*: Heijio Scharff (NL)

IWWG currently has 14 established task groups on a range of topics, with the aim of co-ordinating interdisciplinary research and discussing related results. The aim of the session is to create an opportunity to get acquainted with the work of the different task groups, the results achieved and future activities. Participants will have the opportunity to get in touch with the different task group leaders.

17:10 - 18:00 Coffee break + Poster discussion

SESSION A2 / 18:00-19:40

WASTE MANAGEMENT CONCEPTS IN DIFFERENT COUNTRIES

Chair / *Presidente*:

B. Staley, D. Kantner (US)

Evaluation of municipal solid waste management trends and policy in the United States with comparative analysis to Europe and other countries

C. Mahler, G. Mendez, L. Moura (BR)

New method of evaluation of Municipal Solid Waste Management (MSWM), with the application of the updated waste management condition index - ICGRA

C. Trois, D. Da Silva, A. Cibati, F. Ali (ZA)

Integrated waste management at Dube Trade Port AgriZone in Durban, South-Africa using the WROSE model: a solution for agri-business

S.E. Taelman, J. Dewulf (BE)

Waste Management in (peri-)urban areas: integrated assessment of environmental, social and economic sustainability in a collaborative decision support environment

G. De Feo, S. De Gisi, C. Ferrara, M. Notarnicola (IT)

Comparison between the waste management of two Southern Italy regions: lessons learnt and future perspectives

SESSION B1 / 15:30-17:10

LANDFILL SITING AND ENGINEERING

Chair / *Presidente*:

V. Kumar, A.L. Haldar, A. Yadav, P. Singh (IN)

Landfill site selection modelling for solid waste disposal using remote sensing data and weighted overlay analysis for Gorakhpur City, Uttar Pradesh, India in geographical information system environment

R. Stegmann (DE)

Discussion of landfill problems and proposals for solutions

N. Sliusar, A. Kichkin (RU)

A decision support tool for shifting from old dumpsites to sanitary landfills

M. Godiksen, J.B. Hansen, J. Aabling, I.L. Therkildsen (DK)

Methodology for site-specific risk assessment of landfilling of waste

O. Bour, I. Zdanevitch (FR)

Completion criteria for MSW landfill aftercare

N. Ruxton (AU)

Geotechnical challenges of brownfield sites for use as landfill

17:10 - 18:00 Coffee break + Poster discussion

SESSION B2 / 15:30-17:10

GENERAL ASPECTS IN WASTE MANAGEMENT

Chair / *Presidente*:

R.M. Rosendal, O. Hjelm (DK)

Sorting and separation of landfilled non-hazardous waste at five Danish landfills

K.S. Wilson (GB)

Minimising the cost of environmental monitoring around landfill sites using modern data management systems - A case study of CEMEX UK

S. Moreau, M. Audebert, T. Jouen, S. Loisel, R. Clement (FR)

What's new in the field of geophysical methods to study waste mass behaviour landfilled

R. Fanni, L. Du Preez, D.A. Williams (AU)

A case study of the challenges of industrial sludge disposal

R.P. Beaven, R. J. Nicholls, I.D Haigh, A.S. Kebede, J. Watts (GB)

The impact of coastal landfills on shoreline management plans

MONDAY OCTOBER 2

AFTERNOON

SESSION C1 / 15:30-17:10

CONTAMINATED SITES

Chair / Presidente:

W.C. Ma, L. Y. Tai, Z. Wang, K.X. Fu, L. Zhong, Z. Qiao, G.Y. Chen (CN)

Assessment of heavy metals contamination in soil: a case study in China

C. Tsompanidis, Th. Lolos, F. Lolos, K. Pitsaki, A. Mavropoulos, A. Mentzis, S. Papa-grigoriou, K. Manitará (GR)

Contaminated sites from industrial-hazardous wastes in Attica region and nine prefectures of Greece: identification, characterization and preliminary risk assessment

H. Raveh-Amit, O. Klein-Bendavid, G. Atlas, N. Banano, G. Bar-Nes (IL)

Catalytic pyrolysis of high density polyethylene over zeolites as a method for contaminated solid waste treatment

A. Cristaldi, C. Restuccia, G. Oliveri Conti, C. Copat, A. Grasso, P. Zuccarello, M. Ferrante (IT)

An in vitro control study on soil micoremediation from heavy metals and Polycyclic Aromatic Hydrocarbons (PAHs)

17:10 - 18:00 Coffee break + Poster discussion

SESSION C2 / 18:00-19:40

WASTE GENERATION UNDER VARYING CONDITIONS

Chair / Presidente:

P. Hennebert, N. Humez (FR)

Waste data on line: a part of the collaborative future big data in waste and resources?

G. Obersteiner, I. Gruber, R. Ramusch (AT)

Waste flows resulting from tourist activities

F. Bartolacci, R. Cerqueti, A. Paolini, M. Soverchia (IT)

Assessing efficiency to support waste management companies' strategies

C.M.H. Keske, M. Mills, J. Dicker (CA)

Landfill and waste management in remote rural communities across the Canadian north: challenges and opportunities

H.A. Abu Qdais, S. Gibellini, M. Vaccari (JO)

Managing solid waste under crisis: the case of Syrian refugees in northern Jordan

SESSION D1 / 15:30-17:10

GENERATION OF WEEE

Chair / Presidente:

P. Beigl, N. Unger, G. Höggerl, S. Salhofer (AT)

E-waste - From collection to secondary resource

M.T. Parsons, I.D. Williams (GB)

Quantifying annual flows and the carbon footprint of household WEEE from an affluent city

R.G. Souza, M.A. Nabarretti, C. F. Palanca (BR)

Household WEEE generation estimate in Sao Jose dos Campos, Brazil

M. Gusukuma, R. Kahhat, J. Lepawsky, E. Araujo (PE)

Reducing e-waste flows by extending lifespan through repair practices: case study of laptops in Lima

M. Gusukuma, R. Kahhat, A. Pillihuaman (PE)

Material flow analysis of e-waste: domestic flows, stocks and end-of-life of CRT-TVS in Peru

17:10 - 18:00 Coffee break + Poster discussion

SESSION D2 / 18:00-19:40

MATERIAL COMPOSITION OF WEEE

Chair / Presidente:

A. Jandric, P. Beigl, S. Salhofer (AT)

Material analysis of complex components from waste electrical and electronic equipment

G. Bonifazi, G. Capobianco, S. Serranti (IT)

Integrated micro x-ray fluorescence and chemometric analysis for printed circuit boards recycling

A. Otsuki, L. de la Mensburge (FR)

Non-destructive liberation analysis of printed circuit board

M. Arshadi, S. Yaghmaei, S. M. Mousav (IR)

The analysis of complex content of e-waste

A. Bartl, A.H. Tkaczyk, A. Amato, F. Beolchini, V. Lapkovskis, M. Petranikova (AT)

Solutions for critical raw materials under extreme conditions: state-of-the-art of cobalt, niobium, tungsten, yttrium and rare earth elements

MONDAY OCTOBER 2

AFTERNOON

SESSION E1 / 15:30-17:10

WASTE CHARACTERIZATION

Chair / Presidente:

G. Mondelli, M.A. De Oliveira, C. Jacinto, S. A. Andrade, S. C. Moreira (BR)

Strategies to characterize the MSW refuse of São Paulo City

K. Rybova, B. Burcin, J. Slavik (CZ)

Spatial and non-spatial analysis of socio-demographic aspects influencing municipal solid waste generation in the czech republic

S. A. Andrade, G. Mondelli (BR)

Gravimetric composition of selective collection waste generated in the central area of São Paulo City

G. Blanca, M. Sánchez, N. de Castro, P. Fullana- i- Palmer (ES)

The LIFE+ zero cabin waste project. Waste characterizations

E. Marklund, L. Andreas, A. Lagerkvist (SE)

Float-sink separation of construction and demolition waste fines

J. Roembke (DE)

Testing of 24 potentially hazardous wastes using 6 ecotoxicological tests

17:10 - 18:00 Coffee break + Poster discussion

SESSION E2 / 18:00-19:40

WASTE SEPARATION AND COLLECTION

Chair / Presidente:

A. Happenhofer, P. Beigl, S. Salhofer (AT)

Analysis of economic incentive schemes to promote efficient source separation

A. Niskanen, J. Kemppi (FI)

Tool for calculating the environmental impacts and costs for household solid wastes in different source-separation collection intensities

I. Karagiannaki, E. Gidaracos (GR)

Alternative spacial arrangement of small-sized municipal solid waste bins

P. S. Calabrò, D. Komilis (IT)

Integrating performance and customer satisfaction evaluation in separate collection and street cleaning services: an Italian case study

F. Chen, M. Yu, Z. Luo, Y. Yang, G. J. Liu, J. Ma (CN)

The effect of compulsory source separation policy on household solid waste disposal in pilot megacities: a case study in Nanjing, China

SESSION F1 / 15:30-17:10

IWWG WORKSHOP: ENGINEERED NANOMATERIALS IN WASTE

Chairs / *Presidenti*: Nicole Berge (US), Marion Huber-Humer (AT), Florian Part (AT)

It is critical to develop appropriate end-of-life management strategies for discarded materials and/or products that contain engineered nanomaterials (ENM) to ensure human and/or environment exposure is minimized. Significant knowledge and data gaps associated with the fate of ENMs incorporated in consumer products in waste management processes (e.g. landfilling, incineration, recycling) exist and limit our current ability to develop such strategies. The purpose of this workshop is to highlight currently existing knowledge associated with ENM fate in waste management processes, potential implications associated with ENM disposal, challenges associated with conducting ENM-based research in waste environments, and research needs.

Introductory lectures:

N.D. Berge, J.R.V. Flora, G. Brar, A. Alsharaballi, C.E. Pierce (US)

Landfilling of engineered nanomaterial (ENM) containing products: potential ENG-geomembrane interactions

F. Part, M. Huber-Humer (AT)

Challenges in predicting the environmental fate of engineered nanomaterials in waste management systems

P. Hennebert, P. Merdy (FR)

Mineral colloids and nanoparticles in municipal solid waste incinerator bottom ashes and sunscreens leachate

17:10 - 18:00 Coffee break + Poster discussion

SESSION F2 / 18:00-19:40

WORKSHOP: THE EU LIFE PROGRAMME - GOOD PRACTICE AND TECHNOLOGY

Chair / *Presidente*: Carlos de La Paz (BE)

The LIFE programme is celebrating its 25th anniversary in 2017. The aim of the workshop is to highlight the latest waste management solutions produced by LIFE projects. The workshop structure will be based on a series of good practice presentations, all of which can foster knowledge transfer and encourage the replication of the project results. Additionally, during the Q&As the project representatives will share with the audience their experiences in the application and implementation of LIFE initiatives.

MONDAY OCTOBER 2 AFTERNOON

SESSION G2 / 18:00-19:40

WORKSHOP: TESTING BIOLOGICAL STABILITY OF BIODEGRADABLE WASTE

Chair / Presidente:

Details will be soon available.

DAY 2 / TUESDAY
OCTOBER 3

TUESDAY OCTOBER 3 MORNING

SESSION A3 / 9:00-10:40

WASTE MANAGEMENT POLICIES AND STRATEGIES I

Chair / *Presidente*:

C.A. Fletcher, R.M. Dunk (UK)

In the search for effective waste policy: alignment of UK waste strategy and the EU circular economy package

X. Wang, X. Wei, K. Huang, N. Stanisavljevic, X. Peng, L. Li (CN)

Toward sustainable management of municipal solid waste in China: status, challenges, and opportunities

C.F. Mahler, G. P. Mendez (BR)

Evaluation of municipal solid waste management in Brazilian cities according to the updated waste management condition index – ICGRA

G. Obersteiner, K. Stoll (AT)

The ecological effects of e-commerce with focus on waste generation

F.V. Andretti, J. A. Ferreira, C. F. Mannarino (BR)

Study of the art state in the analysis of economic feasibility of the implantation of a municipal solid waste incinerator with generation of electrical energy in Rio de Janeiro

10:40 - 11:10 Coffee break

SESSION A4 / 11:10-12:50

WASTE MANAGEMENT POLICIES AND STRATEGIES II

Chair / *Presidente*:

T. Trentinella (JP)

Product stewardship as a principle of waste policy and its application in Japan

R.C. Marques, P. Simões (PT)

Tariff regulation in the waste sector: an unavoidable future

J. Cocker (CA)

North America's first circular economy framework - Challenges and opportunities

C.A. Fletcher, P. D. Hooper, R. M. Dunk (UK)

Unintended consequences of secondary legislation: a case study of the UK landfill tax (qualifying fines) order 2015

A. Richter, K.T.W. Ng, D. Bolingbroke (CA)

Effects of government and capital operating expenditure on Nova Scotia recycling behaviors and diversion rates

Q. Ma, K.P. Paudel (CN)

Optimal location-allocation strategy of poultry waste and its economic impact as fertilizer and electricity

SESSION B3 / 9:00-10:40

LANDFILL PROCESSES

Chair / *Presidente*:

A.G. Van Turnhout, T.J. Heimovaara (NL)

Improving insight into the full scale emission potential of landfills with high resolution in-situ measurements

X. Liu, L. Zhang, S. Wu, X. Wu, Z. Li (CN)

Observation of the pores over degradation in simulated municipal solid waste landfills

S. Muaaz-Us-Salam, P. Cleall, M. Harbottle (GB)

Enhanced delignification and methane generation in waste repositories-overcoming heterogeneity

T.J. Heimovaara, A.G. Van Turnhout (NL)

A particle filter approach to quantify the mass balance of a MSW landfill

A.G. Van Turnhout, T.J. Heimovaara (NL)

Coupled modeling of water flow, mass transport and biogeochemical activity to predict emission behavior of landfills

10:40 - 11:10 Coffee break

SESSION B4 / 11:10-12:50

LANDFILL AERATION

Chair / *Presidente*:

R. Raga (IT)

Effects of intermittent aeration on carbon and nitrogen turnover in landfill simulation reactors

M. Ritzkowski, K. Kuchta, R. Stegmann, B. Walker (DE)

Aeration of the Teuftal landfill - Importance of monitoring and lab scale investigations

A. G. Van Turnhout, H. Oonk, H. Scharff, T. J. Heimovaara (NL)

Optimizing landfill aeration strategy with a 3-D multiphase model

TUESDAY OCTOBER 3

MORNING

SESSION C3 / 9:00-10:40

ANAEROBIC DIGESTION PROCESSES I

Chair / Presidente:

A. Fatah Soomro, J. Liu (CN)

Separation of biodegradable matter from OFMSW through a wet percolation reactor

A. Cesaro, V. Belgiorno (IT)

Integrated ozonation and anaerobic digestion for the recovery of organic solid waste

R. John Ravindran, O. Parthiba Karthikeyan, J. W. C. Wong (HG)

Effect of in-situ biogas pressure on food waste hydrolysis and acidogenesis

L. Zhou, X. Gao, J-H. Ko, Q. Xu (CN)

Effects of iron materials on methane generation from food waste anaerobic digestion

T. Reinelt, T. Clauss, M. Hrad, C. Scheutz (DE)

"MetHarmo" is setting the standards - Joint European research project develops standards for determining methane emissions from anaerobic digestion plants

10:40 - 11:10 Coffee break

SESSION C4 / 11:10-12:50

ANAEROBIC DIGESTION PROCESSES II

Chair / Presidente:

V. Abad, T. Vicent, X. Font (ES)

Use of codigestion for the increase of biogas production in a full scale municipal solid waste anaerobic digestion plant

H. W. Duan, F. Lü, K. J. Guo, L. M. Shao, P. J. He (CN)

Metabolic response of multi-nutrients-utilizing methanogen - *Methanosarcina* sp. to the stress of acid and ammonium during anaerobic digestion

N. Engler, A. S. Emmerich, J. Dührkop, M. Nelles (DE)

Improved biodegradability and digestibility of straw by using poultry manure for alkaline pretreatment: energetically enhanced process management

J. Tong, X. T. Lu, Y. S. Wei (CN)

Fate of antibiotic resistance bacteria and genes during enhanced anaerobic digestion of waste sludge with different pretreatment

SESSION D3 / 9:00-10:40

WEEE: CHARACTERIZATION AND TREATMENT

Chair / Presidente:

H. Wang, G. Zhang, J. Yang, Y. He, T. Zhang, J. Hao (CN)

Removing inorganics from nonmetallic fraction of waste PCB by using a novel triboelectric separator

P. Evangelopoulos, S. Arato, H. Persson, E. Kantarelis, W. Yang (SE)

Brominated flame retardants (BFRS) reduction in plastics from electronic and electric equipment waste (WEEE) fraction as a treatment method prior to pyrolysis

P. Hennebert (FR)

WEEE plastic sorting for bromine content is essential to enforce EU regulation

Y.V. Vazquez, S.E. Barbosa (AR)

Use of ABS from WEEE without an accurate previous separation

T. Zhang, Y. He, F. Wang, G. Zhang, J. Zhang, Y. Feng (CN)

Recovery of valuable materials from spent lithium-ion batteries by mechanical separation and thermal treatment

10:40 - 11:10 Coffee break

SESSION D4 / 11:10-12:50

WEEE: TECHNOLOGIES FOR METAL RECOVERY

Chair / Presidente:

H. Yoshida, S. Izhar, E. Nishio, Y. Utsumi, N. Kakimori, S. A. Feridoun (MY)

Use of sub-critical water for revival of tin in LCD panel e-waste

S. Das, Y-P. Ting (SG)

In-vitro synthesis of gold nanoparticles using thiourea leachate of electronic waste

F. Purhossein, S. M. Mousavi (IR)

Enhancement of bioleaching performance by adaptation of acidithiobacillus ferrooxidans to led waste containing heavy metals

M. Li, J. Yang, W. Yu, J. Wang, Y. Hu, S. Liang (CN)

Green recovery and regeneration of spent lead-acid battery by leaching reagents treatment and low-temperature calcination

A. Rigoldi, E. F. Trogu, G.C. Marcheselli, N. Picone, P. Deplano, M. Colledani, A. Serpe (IT)

Noble-metals recovery from printed circuit boards: a multidisciplinary approach towards sustainability

TUESDAY OCTOBER 3

MORNING

SESSION E3 / 9:00-10:40

LANDFILL LINERS PERFORMANCE

Chair / *Presidente*:

D. Cazzuffi, D. Gioffré, P. G. Recalcati (IT)

Performance and durability aspects related to the use of geosynthetics in capping systems

V. Hruby, S. Barrie (SK)

Geomembrane integrity surveys - Difference between US and EU concepts

L.A. Martins, K.M.W. Rebelo, Y.G. Cunha, P.J.M. Pires (BR)

Influence of the addition of bentonite in alternative mixtures for CCL purpose of landfill

J. Andresen, E. Kavazanjian (US)

Experimental evaluation of strain concentrations in HDPE geomembranes due to scratches

10:40 - 11:10 Coffee break

SESSION E4 / 11:10-12:50

LANDFILL COVER

Chair / *Presidente*:

F. Garbo, R. Cossu (IT)

Landfill cover systems - An overview

P. Kjeldsen (DK)

Role of methane oxidation in landfill covers

K. Berger, A. Gröngröft, J. Gebert, C. Harms, A. Eschenbach (DE)

20 years of long-term water balance measurements of a landfill cover system with components constructed from pre-treated dredged material

L. Andreas, S. Diener, A. Lagerkvist (SE)

Reuse of steel slags as landfill cover material - Results from a full-scale experiment

SESSION F3 / 9:00-10:40

WORKSHOP: HEALTHCARE WASTE

Chair / Presidente:

Introductory lectures:

L.L. Moura, C.F. Mahler, H.M. Caulliraux (BR)

Application of a new protocol for health care waste management assessment

V.E. Messerle, A.L. Mosse, A.B. Ustimenko, O.A. Lavrichshev, Z. Jankoski, R.V. Baimuldin (KZ)

Processing of biomedical waste in plasma gasifier

10:40 - 11:10 Coffee break

SESSION F4 / 11:10-12:50

WORKSHOP: RECYCLING OF TIRES

Chairs / Presidente:

Introductory lectures:

S. De Gisi, F. Di Canio, C. Freda, A. Molino, P. Casella, M. Notarnicola, G. De Feo (IT)

Recycling of tire, ASR and biomass pyrolysis products: a comparative evaluation

I. Janajreh, S. Elagroudy, M. Hussain (EG)

Techno-economic assessment of post-consumer tire granular business into kids play ground tiles

H. Aurinko (FI)

A full-scale application of parking structure stabilization for circular economy materials

TUESDAY OCTOBER 3

MORNING

SESSION G3 / 9:00-10:40

WORKSHOP: MFC APPLIED TO WASTE MANAGEMENT

Chair / *Presidente*:

More details will be soon available.

10:40 - 11:10 Coffee break

SESSION G4 / 11:10-12:50

WORKSHOP: USE OF GEOPHYSICS IN OLD LANDFILL SURVEY

Chairs / *Presidente*:

Introductory lecture:

R. Cossu, E. Ranieri, A. Godio, F. Di Maio, R. Raga (IT)

15 years of experience in Italy in use of geophysics in landfill investigation

SESSION H3 / 9:00-10:40

WORKSHOP: ENVIRONMENTAL EDUCATION - CREATING SOCIAL VALUE FROM WASTE MANAGEMENT THROUGH ARCHITECTURE

Chair / *Presidente*: Israel Alba (ES)

Infrastructures are key to the transformation of the city and the territory in an increasingly and profound way, with a future projection, in which a great migration from the countryside to the city is foreseen, places where in a few years the greater part of humanity will be concentrated. Since this position, infrastructures appear as a **necessity** and **opportunity** for the development of the city of the XXI century. Nowadays, in our planet we produce more than 1.300 million tons of urban waste per year. Where does this waste go?

A **waste treatment plant** must have a positive feedback on the whole community, through the process of waste treatment itself and the energy production obtained therefrom. However, the social benefits and educational efforts that we propose from our waste treatment plant model are geared towards the younger sectors of society.

Our projects are conceived as real public facilities, capable of eliminating the negative connotations associated with this type of facilities, incorporating an educational and cultural center that relates the energy and the environmental potential of the plant, making all sectors of society be involved in the process, because they also play an important role in the management of our waste. As an observatory, the plant is a place to study, understand and contemplate contemporary society, which relates waste, energy and the city.

As architects, we believe that preparation, through education, represents a fundamental aspect in the contemporary issue of waste and the problems that can be associated with it. For this, we propose to listen to the different sectors and collectives of our society, concerned about the impact that a plant can produce on its environment, and incorporate their proposals with the objective of improving the management of our waste and our relationship with environment.

10:40 - 11:10 Coffee break

SESSION H4 / 11:10-12:50

WASTE MANAGEMENT AND THE RELATION WITH THE CITY AND THE COMMUNITY

Chair / *Presidente*: Elena Cossu (IT)

J. Muller (US)

The architecture of waste: designing new avenues for public engagement with trash

S. Massaro (IT)

Rethinking the spaces of waste management infrastructure: towards integrated urban strategies to avoid urban solid waste in the contemporary city

M. Shofet, L. Belcic (US)

Social intimacy with waste: rethinking the interface between waste infrastructure and society

TUESDAY OCTOBER 3

AFTERNOON

SESSION A5 / 15:30-17:10

FOOD WASTE: GENERATION, REDUCTION, FOOTPRINT

Chair / *Presidente*:

C. Malefors, M. Eriksson, C. Persson Osowski (SE)

From quantification to reduction - Identification of food waste reduction strategies in public food services

E. Schmied, G. Obersteiner (AT)

Gleaning activities as contribution to food waste reduction

I. Garcia-Herrero, J. Laso, E. Fandiño, M. Margallo, M.J. Durá, C. Sarabia, R. Abajos, A. Irabien, P. Fullana, A. Bala, A. Polettini, I. Vazquez-Rowe, R. Aldaco (ES)

Measuring the nutritional price of food wastes from a life cycle approach: the nutritional food waste footprint

S. Scwodt, G. Obersteiner (AT)

Generation of fruit and vegetable waste in Austrian households - With special focus to the influence of the distribution channel

F. Tatàno, C. Caramiello, E. Laici, T. Paolini, M. Pezzolesi, G. Tombari, L. Tripolone (IT)
Characterization and evaluation of the generation and collection of restaurant waste: a case study in central Italy

17:10 - 18:00 Coffee break + Poster discussion

SESSION A6 / 18:00-19:40

FOOD WASTE VALORIZATION

Chair / *Presidente*:

N.D. Berge, J.R.V. Flora, I. Idowu, L. Li, K.S. Ro (US)

Sustainable conversion of food wastes to value-added products

S. Scherhauser, G. Obersteiner, M. Huber-Humer (AT)

Food waste in a circular economy: current gaps, barriers and recommendations for future prevention and valorisation

J. Laso, M. Margallo, I. Garcia-Herrero, P. Fullana, A. Bala, C. Gazulla, I. Vazquez-Rowe, A. Irabien, R. Aldaco (ES)

Waste-to-food in a circular economy approach: the case study of the anchovy canning industry

P.S. Calabrò, A. Folino, V. Tamburino, G. Zappia, D.A. Zema, S.M. Zimbone (IT)

Valorisation of citrus processing waste: a review

I. Moukazis, F. M. Pellerà, M. Pitsios, E. Gidarakos (GR)

Investigation of different valorization methods for brewer's spent grains

SESSION B5 / 15:30-17:10

SEMI-AEROBIC LANDFILLING

Chair / *Presidente*:

R. Cossu (IT)

Semi-aerobic landfilling - An overview

V. Grossule, M. C. Lavagnolo (IT)

Innovative semi aerobic landfill management in tropical countries

R. Cossu, R. Raga, A. Pivato (IT)

Role of semi-aerobic phase in hybrid landfilling: the S.An.A method

S. Suzuki, R. Yanase, A. Tachifuji, Y. Matsufuji (JP)

Longterm behavior on heavy metals of incineration residues in semi-aerobic landfill type

17:10 - 18:00 Coffee break + Poster discussion

SESSION B6 / 18:00-19:40

CHARACTERIZATION OF LANDFILL LEACHATE

Chair / *Presidente*:

B. Cottrell, S. Bolyard, D. Lozinski, D. Reinhart, A. Motlagh (US)

A chemical characterization of landfill leachate: operational and treatment compositional variations for leachate organic matter

K. Knox (GB)

Review of chromium in landfill leachate: occurrence, speciation, significance and removal

F. Fate Ali (NG)

Leachate characteristics and pollution threat in a tropical urban setting

F. Von Buchwald De Janon (EC)

Leachate production analysis under different organic matter composition in Guayaquil's solid residues - Ecuador

R.M.P. Farage, C.M. Silva, A.A.P. Rezende, J.J.L.L. De Souza (BR)

Influence of the alkaline residues from the cellulosic pulp industry on characteristics of urban solid waste leachate

TUESDAY OCTOBER 3

AFTERNOON

SESSION C5 / 15:30-17:10

LANDFILL BIOCOVER SYSTEMS

Chair / Presidente:

B. Ahoughalandari, A. Cabral (CA)

A new design criterion to consider biogas flow behavior in performance evaluations of passive methane oxidation biosystems

A.O.U. Olesen, A.M. Fredenslund, C. Scheutz, P. Kjeldsen (DK)

Investigating the state of a 6 years old full-scale biocover at a Danish landfill

M. Huber-Humer, M. Hrad, K. Schloffer, G. Kammerer (AT)

Implementation of biowindows for degasification of an older municipal solid waste landfill after removal of the active gas extraction system

I. Pecorini, D. Bacchi, A. Baldi, G. Ferrara, E.A. Carnevale (IT)

Microbial oxidation technologies for landfill gas emissions mitigation in landfill aftercare: abatement of methane and trace components in biofiltration prototypes in Mediterranean regions

17:10 - 18:00 Coffee break + Poster discussion

SESSION C6 / 18:00-19:40

METHANE OXIDATION IN BIOFILTERS AND BIOCOVERS

Chair / Presidente:

T. B. Thomassen, C. Scheutz, P. Kjeldsen (DK)

Treatment of dilute landfill gas by open biocover systems - Column experiments

K. Vondrakova, M. Sir, P. Novak (CZ)

Czech biofilter as an effective technology for methane oxidation in landfill gas: laboratory and field tests

J. Møller, P. Kjeldsen, C. Scheutz (DK)

Environmental assessment of landfill gas mitigation using a biocover system

I. Pecorini, D. Bacchi, L. Zipoli, F. Menghetti, S. Spadi, L. Lombardi (IT)

Comparison between conventional technologies and microbial oxidation systems as cost-effective gas control measures for landfill aftercare

SESSION D5 / 15:30-17:10

WEEE: REGULATIONS AND STRATEGIES

Chair / *Presidente*:

S. Salhofer, B. Kopacek, M. Gericke (AT)

Developing a roadmap for e-waste management in South Africa

V. Neves Pameira, G. Ferreira Guarda, L. F. Whitaker (BR)

Illegal international trade of e-waste: Europe and the take-back

S. Salhofer, A. Jandric, T. D. Chung (AT)

Impacts from informal e-waste recycling

R.M.R. Turaga, K. Bhaskar (IN)

EPR and policy instruments for e-waste management: a review and lessons for India's new e-waste regulations

R.H. Arduin, C. Charbuillet, F. Berthoud, N. Perry (FR)

Life cycle assessment of end-of-life scenarios: tablet case study

17:10 - 17:40 Coffee break + Poster discussion

SESSION D6 / 18:00-19:40

THERMAL TREATMENT PERSPECTIVES WORLDWIDE

Chair / *Presidente*:

R. M. Sebastian, D. Kumar, B. Alappat (IN)

Comparative assessment of incinerability of municipal solid waste over different economies

M. Pu, D. Chen, Y. Hu (CN)

Small scale MSW incinerators and their applications in countryside in China

D. Chen (CN)

Perspective of MSW to power generation through gas engine

G.N.K Rockson, I. Acheampong, E. Yanfu (GH)

Waste to energy as an option for municipal solid waste in developing countries: the case of greater Accra metropolitan area

TUESDAY OCTOBER 3

AFTERNOON

SESSION E5 / 15:30-17:10

RECYCLING AND CIRCULAR ECONOMY STRATEGIES

Chair / Presidente:

J. Hřebíček, J. Soukopová (CZ)

Municipal waste strategy for approaching European Union recycling targets

J. Fellner, D. Laner, R. Warrings, K. Schustereder, J. Lederer (AT)

Potential impacts of the EU circular economy package on the utilization of secondary resources production and utilization

A. Bartl (AT)

Are recycling rates appropriate means to move towards a circular economy?

J. Bachér, H. Pihkola, L. Kujanpää, U-M. Mroueh (FI)

Advancing circular economy through group decision-making and stakeholder involvement

J. Slavík, J. Remr, E. Vejchodská (CZ)

Soft measures and their relevance in the transition to circular economy - The case study of the Czech Republic

17:10 - 18:00 Coffee break + Poster discussion

SESSION E6 / 18:00-19:40

CLIMATE CHANGE IMPACT OF WASTE MANAGEMENT FACILITIES

Chair / Presidente:

S. J. Burnley, C. P. Boardman (GB)

The use of dynamic life cycle assessment to evaluate the long term climate change impacts of waste management processes

C. Tsompanidis, T. Lolos, G. Lolos, E. Ieremiadi (GR)

Assessment of climate change-vulnerability through integrated waste management system and climate resilience analysis: case of Dubrovnik - Neretva county/Croatia

T. Schwarzboeck, P. Aschenbrenner, S. Mühlbacher, S. Szidat, S. Spacek, J. Fellner (AT)

Determination of the climate relevance of refuse derived fuels - Validity of literature-derived values in comparison to analysis-derived values

SESSION F5 / 15:30-17:10

WORKSHOP: GUIDELINES FOR SUSTAINABLE LANDFILLS - THE LOMBARDIA REGION EXAMPLE

Chair / *Presidente*:

Introductory lectures:

R. Cossu, S. Cappa, D. Sciunnach, R. Raga (IT)

The Lombardia guidelines for sustainable landfilling

17:10 - 18:00 Coffee break + Poster discussion

SESSION F6 / 18:00-19:40

IWWG WORKSHOP: EDUCATION IN WASTE MANAGEMENT - WEEE

Chairs / *Presidenti*: Ian Williams, Peter Shaw (GB), Julia Hobhom (DE)

The workshop will consider:

- What key messages about WEEE should we aim to deliver to effect positive change? (public, private sector, municipalities ...)
- What should be the focus of these messages? (prevention, recycling, targeting materials, repair...)
- Which medium/media serve as the best means to deliver our focused message(s) to our target audience

TUESDAY OCTOBER 3

AFTERNOON

SESSION G5 / 15:30-17:10

WORKSHOP: SMART GROUND - SECONDARY RAW MATERIALS

Chair / *Presidente*:

The estimated 500,000 landfills across Europe are expected to be a valuable source of secondary raw materials [SRM]. Existing knowledge, reporting standards and inventory on SRM seems to be inefficient.

The SMART GROUND project will promote resource recovery in landfills by improving the availability and accessibility of data and information on SRM across the EU. This workshop will present the developed SMART GROUND databank and tools to assess the SRM economic potential with workshop attendees, providing a discussion on the assessment of landfill sites material recovery targeting end-users. The recovery methods and approaches will be analysed with input from workshop delegates, with the key technical, environmental and economical considerations explored.

17:10 - 18:00 Coffee break + Poster discussion

SESSION G6 / 18:00-19:40

WORKSHOP: ELEVATED TEMPERATURES IN LANDFILLS

Chair / *Presidente*:

Introductory lectures:

B. Staley, M. Barlaz, C. Benson, M. Castaldi, S. Leuttich (US)

Distinguishing elevated temperature landfill characteristics from landfill fires and subsurface oxidation events

J. White, R. Beaven (GB)

Simulation of thermal phenomena in models of landfill processes

SESSION H5 / 15:30-17:10

ARCHITECTURE OF WASTE MANAGEMENT FACILITIES

Chair / *Presidente*: Israel Alba (ES)

M.L. Nobile (IT)

Architecture as a tool. The design of the recycle waste management centres, good practices and research in Europe

M. Piscitelli, F. Piscitelli (IT)

Facilities for separated waste collection and waste minimization in a small urban area: the project of a waste collection center and three urban composting facilities

P. Vasino, F. Bernar, L. Conti, P. Simone (IT)

Design of a sludge treatment plant in Northern Italy: from segregation to landscape integration

17:10 - 18:00 Coffee break + Poster discussion

SESSION H6 / 18:00-19:40

WASTED LANDSCAPES

Chair / *Presidente*:

M.C. Lavagnolo, R. Malesani, L. Stendardo (IT)

Urban mining and water recycle for abandoned trans urban areas (DATA Project)

M. Russo, L. Amenta, A. Attademo, L. Boccia, E. Formato, M. Rigillo, M.C. Vigo Majello (IT)

Eco-innovative solution for wasted landscapes

N. Slingerland, N. A. Beier, G. W. Wilson (CA)

Enhanced geomorphic design for rural waste-scapes

C. Padoa Schioppa (IT)

Notes from the underworld. Recycling strategies for the Sulcis-Iglesiente mining compound

DAY 3 / WEDNESDAY
OCTOBER 4

WEDNESDAY OCTOBER 4 MORNING

SESSION A7 / 9:00-10:40

ENVIRONMENTAL ISSUES: DIFFUSE CONTAMINATION OF SOIL AND WATER

Chair / *Presidente*:

R. Stegmann (DE)

Global contamination, time to act

S. Werner (DE)

Plastic in rivers and oceans, a massive waste problem

S. Serranti, R. Palmieri, G. Bonifazi, A. Cózar Cabañas (IT)

Optical sensing technology for monitoring of microplastics from oceans

I.D. Williams, K. Roberts, P.J. Shaw, B. Cleasby (GB)

Integrating education & research to apply circular economy thinking to industry: a case study for southern water

10:40 - 11:10 Coffee break

SESSION A8 / 11:10-12:50

SUSTAINABLE WM OPPORTUNITIES

Chair / *Presidente*:

C. De La Paz (BE)

The LIFE programme: the EU fund for the environment, contributing to a more sustainable waste management

C. Cord'Homme (FR)

Close landfill with "material from waste" and "energy from waste" solutions: UK case

K. Pivnenko, M.E. Edjabou, A. Boldrin, T.F. Astrup (DK)

Challenge of material recycling at large public events

P. Fullana-I-Palmer, G. Blanca-Alcubilla, A. Bala, J.I. Hermira, N. De-Castro, R. Charri, R. Perales, I. Barredo (ES)

Tackling international airline catering: the LIFE zero cabin waste project

K. Haarstad (NO)

Recycling waste resources as plant nutrients

SESSION B7 / 9:00-10:40

BIOLOGICAL TREATMENT FOR LANDFILL LEACHATE

Chair / *Presidente*:

T.T.N Dieu, T.T Canh, J.L. Vasel (VN)

Removal of cod and nitrogen in leachate by using combined anoxic/attached-growth bioreactor

Y. Ren, Q. Yuan (CA)

Biological leachate treatment: suspended growth activated sludge vs aerobic granular sludge

G. Chauvon, J-L. Vasel, A. Vande Wouwe (BE)

Modelling Ph calculation to control an SBR system for leachate treatment

10:40 - 11:10 Coffee break

SESSION B8 / 11:10-12:50

MEMBRANE FILTRATION FOR LANDFILL LEACHATE TREATMENT

Chair / *Presidente*:

A. Kremen (US)

Reversible membrane blinding in leachate pre-treatment

S. Ramaswami, J. Behrendt, R. Otterpohl (DE)

Treatment of mature landfill leachate - RO-NF or NF-RO?

L. Zhang, D. Yue (CN)

Evaluation of treatment technologies for leachate concentrate from NF/RO using analytic hierarchy process

D. Yue, L. Zhang, W. Zhang (CN)

Full treatment of landfill leachate by using combined reverse osmosis and submerged combustion evaporator: case study

WEDNESDAY OCTOBER 4 MORNING

SESSION C7 / 9:00-10:40

ANAEROBIC DIGESTION - DIFFERENT SUBSTRATES

Chair / Presidente:

F. Baldi, I. Pecorini, E. Albin, D. Bacchi, L. Lombardi, E. A. Carnevale (IT)
Optimization of biohydrogen production using different types of inoculum

F-M. Peller, E. Gidaragos (GR)

Anaerobic digestion of agroindustrial waste in Mediterranean countries

F. Girotto, M. C. Lavagnolo, R. Cossu (IT)

Acidogenic fermentation for biopolymers production from food waste

A.C.P. Lopes, C.M. Silva, S.F. Aquino, D.R.S. Lima, A.A.P. Rezende (BR)

Mesophilic anaerobic digestion of bleached kraft pulp mill primary and secondary sludge

10:40 - 11:10 Coffee break

SESSION C8 / 11:10-12:50

ANAEROBIC DIGESTION - BIOGAS UTILIZATION

Chair / Presidente:

F. Ardolino, F. Parrillo, U. Arena (IT)

The management of organic waste for the production of a fuel for the transport sector

A. Białowiec, W. Piesik (PL)

Energetically passive municipal solid waste treatment plant

J. Kohl, F. Bozankaya, S. Drescher- Hartung, C. Klapproth (DE)

Sustainable management of energy supply including the use of waste-based biogas processes

L. Lombardi, E. Carnevale, I. Pecorini (IT)

Biogas upgrading by wood combustion ash accelerated carbonation

S. Sfez, S. De Meester, J. Dewulf (BE)

Co-digestion of agricultural waste and cow manure to supply cooking fuel and fertilizers in rural India: life cycle assessment and substance flow analysis

SESSION D7 / 9:00-10:40

CHARACTERIZATION OF MSWI BOTTOM ASH

Chair / *Presidente*:

O. Hjelmar (DK)

Trends in the environmental properties of Danish MSWI bottom ash during the past two decades

M. Ueshima, H. Sakanakura (JP)

Microstructural and morphological studies of incineration bottom ash: mineral formation and associated processes

M. Šyc, A. Kopriva, T. Hrstka, O. Samusevich, Š. Václavková, B. Zach, M. Pohořelý, K. Svoboda, M. Punčochář (CZ)

Characterization of bottom ash fine fraction with respect to recovery potential

M. Miyake, T. Komiya, A. Saffarzadeh, T. Shimaoka (JP)

Evaluating the crucial factors affecting hydrogen gas generation from municipal solid waste incineration bottom ash (MSWIBA)

10:40 - 11:10 Coffee break

SESSION D8 / 11:10-12:50

RECYCLING OF MSWI BOTTOM ASH

Chair / *Presidente*:

J. Lederer, M. Syc, A. Bogush, J. Fellner (AT)

A network approach towards a secondary raw material inventory for Europe applied to waste incineration residues

C.A. Fletcher, E.P. Randviir, C.E. Banks, R.M. Dunk (UK)

A review of end of waste criteria and its application to MSW-derived incinerator bottom ash

M. Van Praagh, M. Johansson, J. Fagerqvist, R. Grönholm, N. Hansson, H. Svensson (SE)

Decision making tool and risk assessment for recycling of MSWI-bottom ash in road constructions in Sweden

O. Holm, V. Enzner (DE)

Resource recovery potential of the fine fraction of bottom ash (BA) from municipal solid waste incineration (MSWI)

I. Deviatkin, A. Sormunen, R. Rantsi, J. Havukainen, M. Horttanainen (FI)

LCA of MSWI BA treatment with an advanced treatment technology and consequent recycling of the mineral fractions obtained

O. Yazoghli-Marzouk, C. Proust, A. Jullien (FR)

LCA of MSWI bottom ash management: inclusion of temporality

WEDNESDAY OCTOBER 4 MORNING

SESSION E7 / 9:00-10:40

HAZARDOUS WASTE MANAGEMENT

Chair / *Presidente*:

A. Van Zomeren, T. Klymko, J.J. Dijkstra (NL)

Difficulties and opportunities in the assessment of ecotoxicity (HP14) for hazard classification of waste

R. Šerovic, B. Karigl, S. Ghita, M. Neubauer, Kh. Striegel (DE)

Establishment of the integrated hazardous waste management plan in Serbia

E. Dimitrakakis, E. Chalarakis, E. Malliarou, A. Korkolis (GR)

Policy discrepancies and wrongful perceptions for the transport of hazardous wastes not characterized as radioactive

L. Biktasheva, P. Galitskaya, S. Selivanovskaya (RU)

Bioaugmentation for oily waste remediation: harm or benefit?

10:40 - 11:10 Coffee break

SESSION E8 / 11:10-12:50

FATE OF BIOPLASTICS

Chair / *Presidente*:

M.C. Lavagnolo, A. Pivato, F. Ruggero (IT)

Fate of bioplastics in composting process

C.P. Boardman, S. Summers, K. Olsson-Francis, T. Gladding (GB)

Plastic microbial acclimation and optimisation of composting and anaerobic digestion processes may improve degradation times

SESSION F7 / 9:00-10:40

WORKSHOP: WASTE MANAGEMENT IN BRAZIL

Chair / *Presidente*: Claudio Mahler (BR)

Modern society wastes a lot, despite the lack of resources and crises. One of the least advanced areas in the Third World is solid waste treatment. This generates numerous environmental problems and social losses for present and future society. Solutions are put off because politicians think only of the next election, never the next generation. Bays, gulfs, rivers, soil and groundwater are contaminated, making them impossible to use, damaging environmental health. This problem is found in all Third World countries. While many people are aware of the problems, providing impetus to research into new procedures such as composting, bio-digesting, sorting, recycling, etc., others are skeptical or more interested immediate profit, so they do not accept new proposals. There are two antagonistic forces, which has hampered progress to improve waste management. Some new proposals developed in Brazil and other countries for waste treatment will be presented and the problems of their implementation will be discussed.

10:40 - 11:10 Coffee break

SESSION F8 / 11:10-12:50

WORKSHOP: DISASTER WASTE MANAGEMENT

Chair / *Presidente*:

Introductory lecture:

H. Fujiwara, H. Kuramochi, K. Nomura, T. Maeseto, M. Osako (JP)

Inicineration of disaster waste contaminated by radiocesium in Fukushima

M. Lega, M. Casazza

Urban slums waste management: a preliminary study of hidden trashes within a Gipsy camp in Italy

WEDNESDAY OCTOBER 4 MORNING

SESSION G7 / 9:00-10:40

WORKSHOP: JAPANESE EXPERIENCE AND PROPOSALS FOR LANDFILL AFTERCARE

Chair / *Presidente*:

Introductory lectures:

Y. Matsufuji (JP)

Aftercare of old landfills. Introduction to the workshop

T. Ishigaki (JP)

Aftercare method by semi-aerobic concept

O. Hirata (JP)

Evaluation method for stabilization level of old landfills

S. Suzuki (JP)

Case-study for reusing of completed landfills

10:40 - 11:10 Coffee break

SESSION G8 / 11:10-12:50

IWWG WORKSHOP: LANDFILL AERATION - ACHIEVEMENTS AND CHALLENGES AFTER TWO DECADES OF EXPERIENCE

Chair / *Presidente*:

In the late nineties the first landfill aeration projects started in Europe. Meanwhile, the methodology is widely accepted as a means for enhanced, controlled and sustainable bio-stabilisation of MSW landfills. Positive effects are related to a significant reduction of current and future greenhouse gas emissions, a widely completion of landfill settlements as well as improved leachate quality. However, results reported from different aeration projects are not always concordant and may differ significantly with regard to the achieved level of stabilisation. The aim of the workshop is to identify both the potential of the methodology and further research needs.

Introductory lectures:

H. Yoshida (JP)

Landfill gas and temperature distributions in a semi-aerobic landfill with passive aeration system in Japan

T. Wohlhuter (FR)

Application of the in-situ aerobic stabilization technology: results after 2 years of operation of the first French full-scale pilot

M. Hrad, M. Huber-Humer (AT)

Comparative performance assessment of different aeration projects in Europe

M. Ritzkowski (DE)

Challenges in connection with an aerobic landfill project in Switzerland

SESSION H7 / 9:00-10:40

ARCHITECTURAL ISSUES IN LANDFILLING

Chair / *Presidente*:

I. Alba (ES)

Analytical tools in landfill transformation

E. Cossu, A. Artuso (IT)

Afteruse of landfills

S. Mariappan, N.K. Devanayagam, S.A. Badarudin, F.H. Hood (MY)

Sustainable development of existing landfill by performing vertical expansion

F. Chen, Z.B. Luo, Y.J. Yang, J. Lv, G.J. Liu, J. Ma (CN)

Designing e-waste landfill as a landscape infrastructure: a case study based on public perceptions in Nanjing, China

10:40 - 11:10 Coffee break

SESSION H8 / 11:10-12:50

FUNCTIONAL REQUALIFICATION OF OLD LANDFILL SITES

Chair / *Presidente*:

D. Cinti (IT)

Requalification of pit lakes and environmental recovery of an MSW landfill located on the floodplain of the Tiber river in Tuscany with a view to reuse and valorization of the river embankment

B. Bolaane, G. Lethugile, N. Nkhwanana (BW)

From Brownfield to a recreational facility: the case of the Old Gaborone landfill, Botswana

A. Długoński (PL)

Ecological utilization of constructional waste: a case study of Górka Rogowska landfill in Łódź city, Poland

WEDNESDAY OCTOBER 4

AFTERNOON

SESSION A9 / 15:30-17:10

INTEGRATED EVALUATION OF WASTE MANAGEMENT SYSTEMS

Chair / *Presidente*:

A. Amato, F. Gabrielli, S. Balducci, L. Magi Galluzzi, F. Beolchini (IT)

Environmental impact assessment of different strategies of waste management within Italian emergency scenarios

C. Ferrara, C. Chechile, G. De Feo (IT)

Life cycle assessment (LCA) of the management phase of a MBT plant in the Campania region of southern of Italy

E.R. Rodrigues, A.P. Bortoleto (BR)

Environmental evaluation of two biogas technologies applying life cycle assessment - A Brazilian case study

I.D. Williams, P.J. Shaw (GB)

Improving waste management systems using student-led activities: a case study for an international airport

N.A.B. Araújo, A.P. Ribeiro, C.E. Teixeira (BR)

Environmental perception of solid waste management in the coastal zone of São Paulo state, Brazil

17:10 - 18:00 Coffee break + Poster discussion

SESSION A10 / 18:00-19:40

DECISION MAKING IN WASTE MANAGEMENT

Chair / *Presidente*:

D. Panepinto, M. C. Zanetti (IT)

Environmental and economic analysis for different scenarios of municipal solid waste disposal

V. Bisinella, T.F. Astrup (DK)

Decision making within waste management: combined uncertainty and scenario analysis for the life cycle assessment of a Danish case study

T. Henriksen, T.F. Astrup, A. Damgaard (DK)

Addressing spatial variability of waste treatment technologies

J.T. Agredo, D.G. Alzate, S.G. Restrepo, F.Á. Hincapié (CO)

Industrial manufacturing of ceramic bricks added with a secondary lead smelting slag - A performance assessment

T. Sasao (JP)

How does municipal solid waste policy affect heat and electricity produced by incinerators?

SESSION B9 / 15:30-17:10

ALTERNATIVES IN LANDFILL LEACHATE TREATMENT I

Chair / Presidente:

S. Bolyard, B. Staley (US)

State of practice of leachate management and treatment in the US

H. Robinson, K. Wilson, J. Olufsen, T. Robinson (GB)

State-of-the-art leachate treatment plants in eastern England

T. Robinson (GB)

Robust and reliable treatment of leachate at a closed landfill site in Sussex, UK

M. Saleem, M.C. Lavagnolo, A. Spagni (IT)

Treating stabilized landfill leachate: a case of dynamic membrane bioreactor (DMBR), strategy for start-up and performance evaluation

17:10 - 18:00 Coffee break + Poster discussion

SESSION B10 / 18:00-19:40

ALTERNATIVES IN LANDFILL LEACHATE TREATMENT II

Chair / Presidente:

D. Lozinski, D. Reinhart, S. Bolyard, A. Motlagh, B. Cottrell (US)

Treatment of leachate organic matter through sun-light driven photolysis

H. Robinson, K. Wilson, J. Olufsen, T. Robinson (GB)

Removal of dissolved methane and sulphides from landfill leachate

T. Robinson (GB)

The use of reed beds for leachate treatment at closed landfill sites

F. Garbo, M. C. Lavagnolo, M. Malagoli (IT)

Wetland lab scale investigations for leachate treatment

S. Ramaswami, J. Berendt, S. Kalyanasundaram, S. Eggers, R. Otterpohl (DE)

Nitrification of mature landfill leachate packed bed biofilm reactor

WEDNESDAY OCTOBER 4

AFTERNOON

SESSION C9 / 15:30 - 17:10

COMPOSTING

Chair / *Presidente*:

M. Quintern, M. Morley (DE)

One solution fits all - How households, schools, prisons, municipalities and industries successfully use vermicomposting for organic waste up-cycling

T. Castkova, A. Hanc (CZ)

Change of the parameters of layers in a large-scale grape marc vermicomposting system with continuous feeding

R. Avidov, I. Saadi, A. Krassnovsky, A. Hanan, Sh. Medina, M. Raviv, Y. Chen, Y. Laor (IL)

Polyethylene sleeves with forced aeration for on-site composting: pilot-scale experiments with municipal sewage sludge and olive mill wastewater pre-absorbed by green waste

A. Singh, G.S. Singh (IN)

Temple floral waste properties by using vermicomposting and composting process

M.S. Farooq, A.N. Chaudhry, K.S. Khan (PK)

Dynamics of plant nutrients and green house gasses in compost

17:10 - 18:00 Coffee break + Poster discussion

SESSION C10 / 18:00 - 19:40

COMPOST AND DIGESTATE QUALITY

Chair / *Presidente*:

L. Alessio, M.C. Di Lonardo, I. Verginelli, F. Lombardi (IT)

Experimental study to evaluate the leaching behaviour of two types of treated biowastes

F. Guilayn, J. Jimenez, M. Rouez, M. Crest, D. Patureau (FR)

Biogas digestate typologies

P. Kuryntseva, L. Biktasheva, P. Galitskaya, S. Selivanovskaya (RU)

Production of suppressive composts from agricultural wastes in Russian economic conditions

G.M. Shah, N. Tufail, H.F. Bakhat, I. Ahmed, M.I. Rashid, E. Lantinga (PK)

Assessment of fertilizer value and associated health risks from putrescible solid waste as affected by the composting techniques

SESSION D9 / 15:30-17:10

TREATMENT AND UTILIZATION OF MSW FLY ASH

Chair / *Presidente*:

Z. Yang, L. Liu, X. Wang, Z. Zhang (CN)

Long-term leaching behaviors of cement composites prepared by hazardous wastes

J. Lederer, A. Bogush, J. Fellner (AT)

The utilization of solid residues from municipal solid waste incineration in the cement industry: a review

F. Huber, J. Lederer, D. Laner, J. Fellner (AT)

Comparative life cycle assessment of the utilisation of MSWI fly ash in cement production and metal recovery

F. Wang, Y. Li, T. Yang, R. Li (CN)

Thermodynamic and dynamic analysis of sludge incineration fly ash melting process with different particle size

17:10 - 18:00 Coffee break + Poster discussion

SESSION D10 / 18:00-19:40

STABILIZATION AND ENVIRONMENTAL IMPACT OF INCINERATION RESIDUES

Chair / *Presidente*:

G. Costa, F. Lombardi, A. Poletini, R. Pomi, R. Spagnuolo (IT)

Analysis of the effects of different types of carbonation treatments aimed at allowing the unrestricted reuse of waste incineration bottom ash

K. Miki, T. Komiya, S. Muradia, T. Shimaoka (JP)

Accelerated stabilization of MSW incineration bottom ash in landfill by oxygen ultrafine bubbles

V. Enzner, O. Holm, K. Kuchta (DE)

The characterisation of the fine fraction of MSWI bottom ashes for the pollution and resource potential

K. Ishii, T. Furuichi, M. Hanashima (JP)

Stabilization of incineration residue and shredded incombustible waste using artificial watering in closed system disposal facilities

WEDNESDAY OCTOBER 4 AFTERNOON

SESSION E9 / 15:30-17:10

WORKSHOP: PLASTIC IN RIVERS AND OCEANS - A MASSIVE WASTE PROBLEM I

Chair / *Presidente*:

Introductory lecture:

S. Werner, R. Stegmann (DE)

Plastic in rivers and oceans, a massive waste problem

17:10 - 18:00 Coffee break + Poster discussion

SESSION E10 / 18:00-19:40

WORKSHOP: PLASTIC IN RIVERS AND OCEANS - A MASSIVE WASTE PROBLEM II

Chair / *Presidente*:

Introductory lecture:

E. Gidarakos (GR)

Problems and opportunities in plastic waste management

SESSION F9 / 15:30-17:10

WORKSHOP: ENVIRONMENTAL FORENSICS I

Chair / *Presidente*:

Introductory lectures:

M. Lega, M. Casazza, G. Russo, J. A. Tullis, I. Petrisor (IT)

Multidisciplinary approaches for successful environmental crime investigations

A. Fujiyama, K. Ishii, M. Sato, T. Furuichi, S. Washio (JP)

Study on categorization of multievaluators into groups for selecting remedial goals and methods at illegal dumping sites using analytic network process

E. Bietlot, V. Lebrun, C. Collart (BE)

Groundwater protection around landfills: from EU regulation to site-specific action plans

17:10 - 18:00 Coffee break + Poster discussion

SESSION F10 / 18:00-19:40

WORKSHOP: ENVIRONMENTAL FORENSICS II

Chair / *Presidente*:

Introductory lectures:

A. Limoli, A. De Pretto, C. De Muri (IT)

Illegal landfill - A multidisciplinary approach

P. Aswathi, M. Siddik, G.K. Varghese (IN)

An environmental forensic investigation at a biomedical waste treatment and disposal facility in Kerala, India

M.A. Siddik, G.K. Varghese, B.J. Alappat (IN)

Environmental forensic investigation of landfill induced contamination: a case study from Kerala, India

WEDNESDAY OCTOBER 4 AFTERNOON

SESSION G9 / 15:30-17:10

IWWG WORKSHOP: GUIDING DOCUMENTS FOR METHANE OXIDATION SYSTEMS

Chairs / *Presidenti*: Marion Huber Humer (AT), Julia Gebert (NL)

During the past years in many different countries worldwide (e.g. Austria, Germany, Australia, Great Britain, Denmark) new technical guidelines and/or regulation for the practical implementation of methane oxidising systems like bio-covers, biowindows or biofilters have been developed and implemented or are currently under development. The main purpose of this workshop is to produce a joint "review" of the existing guiding documents, to identify similarities and disparities, exchange ideas for harmonization of such documents and to jointly consider open research questions and further steps. After an introductory presentation current guiding documents and key-issues will be presented briefly in impulse presentations.

17:10 - 18:00 Coffee break + Poster discussion

SESSION G10 / 18:00-19:40

IWWG WORKSHOP: LONG-TERM LANDFILL EMISSIONS

Chairs / *Presidenti*: Heijio Scharff (NL), Dongbei Yue (CN)

As part of landfill aftercare completion procedure it is important to demonstrate that the landfill in the absence of active aftercare measures no longer presents a hazard to human health and the environment. The focus of the workshop will be on the role that an assessment of long-term emission could or should play in aftercare completion procedures. The topics will be introduced with short and focused presentations.

Introductory lectures:

O. Hjelmar (DK)

Assessment of long-term emissions from landfills as part of a landfill aftercare completion procedure

A. Van Zomeren (NL)

Potential role of geochemical speciation modelling in the determination of long-term emissions

T. Heimovaara (NL)

Potential role of preferential pathways and hydrological modelling in the determination of long-term emissions

SESSION H9 / 15:30-17:10

WORKSHOP: ARCHITECTURE OF WASTE

Chairs / *Presidenti*: Hanif Kara, Leire Asensio Villoria (US), Elisabet Höglund (SE)

Waste to energy facilities offer a proven and increasingly attractive solution for dealing with solid waste in an era of rapid urbanisation and population growth though the managing of waste in this context is not a new problem.

In collaboration with Harvard University Graduate School of Design the presenters spent three years undertaking design research to dispel unjustified canards that spur lobbies against this type of waste treatment. Sweden (a community that is recognised as a mature and pioneering in the field) has been compared to the East Coast of the USA where land availability still encourages landfill as a primary method for disposal. The presentation will share the findings over the three years and unfold a methodology that reengages “design thinking” to ignite a renewed interest in this type of facility through an interdisciplinary approach. Techniques and operations in design will be showcased in the presentation as well as the impacts that have the potential to change consumer behaviour will be part of the discussion.

17:10 - 18:00 Coffee break + Poster discussion

SESSION H10 / 18:00-19:40

REUSE OF WASTE MATERIALS IN BUILDING PRODUCTS

Chair / *Presidente*:

S. Thorneloe (US)

Reuse of ‘waste’ in making building products

F.H. Smith, V. Tramontin, C. Trois (ZA)

The use of waste products as substitutes in sustainable construction materials as part of a circular economy

F. Kleemann, J. Lederer, J. Fellner (AT)

Circular economy in the building sector - Regional implications for resource management in Vienna

M. Struk (CZ)

The effects of waste management company change on municipal solid waste expenditures

DAY 4 / THURSDAY
OCTOBER 5

THURSDAY OCTOBER 5 MORNING

SESSION A11 / 9:00-10:40

LCA: A TOOL FOR WASTE MANAGEMENT ASSESSMENT

Chair / Presidente:

S. Thorneloe (US)

Opportunities and challenges of using Life-Cycle Assessment to encourage more sustainable materials management

F. Tanguay-Rioux, S. Viau, G. Majeau-Bettez, L. Spreutels, R. Samson, R. Legros (CA)
Development of a tool for waste management planning based on the integration of material flow analysis and Life Cycle Assessment

V. Bisinella, T.H. Christensen, T.F. Astrup (DK)

Future scenario analysis within waste management and Life Cycle Assessment of waste management solutions

G. Costa, A. Lieto, L. Bergamin, L. Franz, G. Vallardi, P. Muraro, F. Lombardi (IT)
Analysis by Life Cycle Assessment of the reduction in environmental impacts resulting from the current MSW management system of the "Sinistra Piave" basin

G. De Feo, C. Ferrara, V. Iannone, P. Parente (IT)

Combination of life cycle thinking and environmental communication to improve the efficacy of paper and cardboard collection in southern Italy

10:40 - 11:10 Coffee break

SESSION A12 / 11:10-12:50

LANDFILL MINING

Chair / Presidente:

G. Pastre, Z. Griffiths, J. Val, A.M. Tasiu, E.V. Camacho-Dominguez, S. Wagland, F. Coulon (GB)

A decision support tool for enhanced landfill mining

R. Møller Rosendal, J. Mølgaard Christensen, P. Reimann, L. Baltzer Overgaard, S. Poulsen, H. Felding, P. Sundberg, S. Nielsen (DK)

Landfill mining demonstration project at Skaarup landfill, Denmark

S.T. Wagland, F. Coulon, L. Canopol (GB)

The UK case for enhanced landfill mining

C. Garcia Lopez, A. Clausen, T. Pretz (DE)

Landfill mining: a case study on sampling, processing and characterization of excavated waste from an Austrian landfill

T. Mönkäre, M. Palmroth, J. Rintala (FI)

Technical evaluation of suitability of biological treatment methods for fine fraction from landfill mining

SESSION B11 / 9:00-10:40

LANDFILL GAS GENERATION

Chair / *Presidente*:

J. Gebert, C. Knoblauch (NL)

Long-term gas generation from landfilled dredged sediment

X. Wang, K. Huang, X. Wei, M. Barlaz (CN)

What are the best values for carbon dissimilation factors for landfilled harvested wood products?

M. Sato, D. Kakiuchi, A. Fujiyama, K. Ishii (JP)

An approach for decision of landfill gas monitoring points considering distribution of underground temperature in landfill site - Case study in a closed system disposal facility

M. Ritzkowski, K. Kuchta (DE)

Landfill gas production before, during and after landfill aeration

10:40 - 11:10 Coffee break

SESSION B12 / 11:10-12:50

LANDFILL GAS GENERATION MODELLING

Chair / *Presidente*:

G. Andreottola, R. Cossu, M. Ritzkowski (IT)

Landfill gas generation modelling

K-U. Heyer, K. Hupe, G. Rettenberger, R. Schneider, R. Stegmann (DE)

Adaptation of IPCC default values on national landfill conditions

R.G. Gregory (GB)

Landfill gas modelling: combining scientific rigour and commercial key performance indicators for reliable forecasting

K. Haro, I. Ouarma, B. Nana, A. Bere, J. Koulidiati (BK)

In-situ measurement and theoretical calculations of annual biogas generation: case of Polesgo landfill at Burkina Faso

THURSDAY OCTOBER 5 MORNING

SESSION C11 / 9:00-10:40

GASEOUS EMISSIONS FROM BIOLOGICAL TREATMENT PLANTS AND COLLECTION VEHICLES

Chair / Presidente:

T.I. Gladding, C.A. Rolph (GB)

Time varying emissions from composting sites

M.L. Mastellone, R. Lotito (IT)

Indirect monitoring of the air quality affected by biowaste treatment facilities

Z. Duan, W. Lu (DK)

Odorous gas emissions during the turning process of sewage sludge and green waste co-composting windrows

C. Rolph, T.L. Gladding (UK)

Size fractionation of endotoxin from organic waste

M. Héroux, M. Drakonakis, A.K. Dib Bali, R. Legros, L. Spreutels (CA)

Odour emissions from waste collection vehicles in the cases of municipal food and mixed waste: characterization and modelling

10:40 - 11:10 Coffee break

SESSION C12 / 11:10-12:50

BIOREFINERIES

Chair / Presidente:

C. Lodato, D. Tonini, A. Damgaard, T.F. Astrup (DK)

Advanced Life Cycle Assessment modelling of organic-waste refineries

W.H. Han, P.J. He, L.M. Shaa, F. Lü (CN)

High-value biochemical production by mixed cultures grown on waste-derived syngas

C. Zurbrügg, B. Dortmans, A. Fadhila, B. Verstappen, S. Diener (CH)

From pilot to full scale operation of a waste-to-protein treatment facility

Y. Song, B.-J. Bae (KR)

Co-production of value-added products, bioethanol and rare sugar, from agricultural wastes

N. Wieczorek, M.A. Kucuker, N. Buescher, K. Kuchta (DE)

Outdoor cultivation of chlorella sorokiniana in third generation biorefinery: resource savings through medium recycling

SESSION D11 / 9:00-10:40

LOW TEMPERATURE THERMAL WASTE TREATMENT (BIOCHAR, TORREFACTION, HYDROTHERMAL)

Chair / Presidente:

F. Yang, Y. Hu, F. Zhou, D. Chen (CN)

A comparison between CO₂ gasification of various biomass chars and CO₂ gasification of coal char

W.D. Chanaka Udayanga, A. Veksha, A. Giannis, V.W.- C. Chang, T-T. Lim (SG)

Physicochemical transformation of heavy metals in sludge-biochar produced by pyrolysis treatment

S.S. Li, F. Lü, P.J. He, M. Shao (CN)

Redox property of biochar and its relationship with biochar's function in the biodegradation of waste

P. Stępień, A. Białowiec (PL)

Kinetic parameters of torrefaction process of alternative fuel produced from Municipal Solid Waste and characteristic of carbonized refuse derived fuel

G. Haarlemmer, A. Roubaud, J. Roussely, M. Déniel (FR)

Hydrothermal liquefaction of wet waste streams

10:40 - 11:10 Coffee break

SESSION D12 / 11:10-12:50

TREATMENT AND RECYCLING OF BIO-SLUDGES

Chair / Presidente:

K.Y. Show, Y.G. Yan, M. Ling (CN)

Low frequency ultrasonication for sludge disintegration and digestion

J. Yang, S. Liang, W. Yu, S. Tao, J. Yu, Q. Gan, R. Guan, H. Li (CN)

Two recycling methods of deep-dewatered sludge cake conditioned by fenton's reagent and red mud

W. Yu, J. Yang, Y. Gu, S. Liang, X. Wu (CN)

Influence of voltage on electro-dewatering of activated sewage sludge by in-situ linear-sweep voltammetry analysis

T.Y.R. Oda, A.A.P. Rezende, C.M. Silva, C.L. Silva (BR)

Production and characterization of adsorbents derived from textile biological sludge by carbonization and chemical activation

S. Vaclavkova, M. Syc, M. Pohorely, B. Zach, J. Mosko, K. Svoboda, M. Puncochar (CZ)

Phosphorus recycling - A way to replace the conventional P-fertilizers by P-products derived from sewage sludge

N.A. Hafiz, S.M. T. Islam, M. Alamgir (BD)

Management of faecal sludge through co-composting approach in Kushtia municipality of Bangladesh

THURSDAY OCTOBER 5 MORNING

SESSION E11 / 9:00-10:40

IWWG WORKSHOP: PREVENTION OF FOOD WASTE

Chair / *Presidente*:

The workshop will focus on the issue of avoidable food waste. After a short presentation to introduce the workshop, participants will focus on two tasks via a structured critical appraisal and analysis:

1. Which factors cause what type of avoidable food waste?
2. Can we identify potential interventions to alter householders' behaviour such that better prevention of avoidable food waste can be achieved?

Introductory lectures:

P.J. Shaw, I.D. Williams (GB)

Avoidable food waste: causes, types and prevention

H. Yamakawa, I.D. Williams, P.J. Shaw, K. Watanabe (JP)

Food waste prevention: lessons from the love food, hate waste campaign in the UK

10:40 - 11:10 Coffee break

SESSION E12 / 11:10-12:50

AIR POLLUTION IMPACT AND CONTROL IN THERMAL TREATMENT

Chair / *Presidente*:

A. Beylot, S. Muller, M. Descat, Y. Menard, P. Michel, J. Villeneuve (FR)

WILCI: a LCA tool dedicated to MSW incineration in France

A. Haddad, S. Moqbel (JO)

Impact assessment of open combustion of Municipal Solid Waste (MSW) through biomonitoring of dioxin concentration in pine trees needles in an urban site in Amman - Jordan

R. Yang, H. Zhang, L.M. Shao, P.J. He (CN)

Use ammonium dihydrogen phosphate to inhibit chlorobenzenes formation

SESSION F11 / 9:00-10:40

WORKSHOP: WM IN TRANSIENT COUNTRIES: FROM SOCIALISTIC TO MARKET ECONOMIES

Chairs / Presidente:

Introductory lectures:

R. Maletz, S. Wohmann, A. Pukhnyuk (DE)

Comparison of waste management systems in western and transition economies within the project Watra

H. Skryhan, O. Khandogina, I. Shilova (BY)

Municipal Solid Waste management in the cities of Belarus and Ukraine: lost soviet efficiency and weakness of modern governance instruments

H. Skryhan, I. Shilova, O. Khandogina, K. Abashyna, O. Chernikova (BY)

Waste management in post-soviet countries: how far away from EU?

A. Pukhnyuk, R. Ramusch, M. Huber-Humer, R. Maletz (AT)

Challenges of planning and assessment of waste management scenarios in transition economies: case studies Mogilev city (Belarus) and Derhachi region (Ukraine)

K. Abashyna, O. Chernikova, O. Khandogina, M. Pavlova, F. Stolberg (UA)

Development of information and communication strategies for increase of public awareness in municipal waste management in the low-middle and upper-middle-income countries

A. Pukhnyuk, R. Ramusch, M. Huber-Humer, R. Maletz (AT)

Socialistic vs. market-oriented waste management: functioning circular economy in the soviet union and GDR as model for EU?

10:40 - 11:10 Coffee break

SESSION F12 / 11:10-12:50

WORKSHOP: MONITORING GAS EMISSIONS FROM WM FACILITIES

Chair / Presidente:

Introductory lectures:

A.M. Fredensund, C. Scheutz (DK)

Total methane loss from biogas plants determined by tracer dispersion measurements

M. Hrad, M. Piringer, M. Huber-Humer (AT)

Quantification of methane emissions from anaerobic digestion plants using laser absorption spectroscopy and inverse dispersion modelling

A.M. Fredensund, J. Mønster, P. Kjeldsen, C. Scheutz (DK)

Screening method to assess greenhouse gas mitigation potential of old landfills based on downwind methane concentration measurements

THURSDAY OCTOBER 5 MORNING

SESSION G11 / 9:00-10:40

WORKSHOP: LANDFILL ENGINEERING - PROBLEMS AND SOLUTIONS

Chair / Presidente:

Introductory lecture:

R. Cossu (ITA)

Landfill engineering: problems and solutions

10:40 - 11:10 Coffee break

SESSION G12 / 11:10-12:50

WORKSHOP: LEACHATE MANAGEMENT - NEW CHALLENGES

Chair / Presidente:

Introductory lecture:

S. Dever, B. Lau, A. Roberts (AU)

Transforming leachate management at the Kimbriki resource recovery centre, Sydney, Australia

SESSIONE H11 (IN ITALIANO) / 9:00-10:40

INGEGNERIA FORENSE APPLICATA ALLA GESTIONE DEI RIFIUTI I

Chair / Presidente:

Maggiori dettagli saranno presto disponibili.

10:40 - 11:10 Coffee break

SESSIONE H12 (IN ITALIANO) / 11:10-12:50

INGEGNERIA FORENSE APPLICATA ALLA GESTIONE DEI RIFIUTI II

Chair / Presidente:

Maggiori dettagli saranno presto disponibili.

THURSDAY OCTOBER 5

AFTERNOON

SESSION A13 / 15:30-17:10

PACKAGING WASTE RECYCLING

Chair / Presidente:

N. Stanisavljević, V. Mrkajić, X. Wang, D. Ubavin, B. Batinić (RS)

What should we learn from key challenges of packaging waste management system in EU accession country

B.D. Such, A. Bala, R. Colomé, J. Ribas, S. Ayuso, I. Muñoz, B.P. Weidema, P. Fullana-I-Palmer (ES)

A comparative sustainability assessment of two packaging waste management systems in dispute in Spain. The Ariadna project.

R. Warrings, J. Fellner (AT)

Where aluminium household goods get lost - Gaps on the way to a circular economy

G. Obersteiner, R. Ramusch (AT)

Assessing the informal diversion of aluminium beverage cans in selected eastern European cities

V. Decottignies, Ml. Sablayrolles, Mc. Magnie, O. Vilcot (FR)

Plastics recycling, from a market push to a market pull - Example of a waste-management company

17:10 - 18:00 Coffee break + Poster discussion

SESSION A14 / 18:00-19:40

RECYCLING AND RECOVERY OF PLASTIC

Chair / Presidente:

J. Hřebíček, O. Faldík, Z. Horsák, O. Trenz (CZ)

Sustainable investment in waste management - A case study on LDPE plastics

T.S. Gomes, L.L.Y. Visconte, E.B.A.V. Pacheco (BR)

Comparative assessment of two different pet recycling systems in Brazil from a life cycle perspective

J.-C. Lee, M. Jun, R.R. Srivastava, M.-S. Kim (KR)

Recycling of CU and NI from waste surface-coated plastic using ammoniacal leaching and solvent extraction

E. Seiler, A. Kessler, F. Henning, U. Teipel (DE)

Efficient dismantling of fiber reinforced plastics like rotor blades with energetic materials

Z. Jin, L. Yin, D. Chen, Y. Hu, Y. Jia (CN)

The heat transfer characteristics of molten waste plastic pyrolysis in a vertical falling film reactor

SESSION B13 / 15:30-17:10

LANDFILL GAS EMISSION MONITORING

Chair / *Presidente*:

L. Fjelsted, C. Scheutz, A.G. Christensen, P. Kjeldsen (DK)

Screening tool for landfill gas emission hot spots based on infrared images

M. Bourn, G. Allen, P. Hollingsworth, K. Kababbe, P.I. Williams, H. Ricketts, J.R. Pitt, A. Shah (GB)

The development of an unmanned aerial system for the measurement of methane emissions from landfill

F. Tatàno, A. Viscione, S. De Rosa, G. Corigliano, B. Capaccioni (IT)

Landfill gas emission monitoring with the static, non-stationary chamber method: a long-term (2005-2016) study at an Italian site

J. Mønster, T. Rees-White, R. Beaven, C. Scheutz (DK)

Quantification of the methane emissions from Masons landfill, UK

17:10 - 18:00 Coffee break + Poster discussion

SESSION B14 / 18:00-19:40

LANDFILL GAS COLLECTION

Chair / *Presidente*:

E. Fathi Aghdam, A.M. Fredenslund, P. Kjeldsen, C. Scheutz (DK)

Gas collection efficiency at two Danish landfills

W.H. Stachowitz (DE)

LFG projects in between old Europe (Germany) and old eastern bloc (Russia and Belarus)

A. Richter, K.T.W. Ng (CA)

Snow cover effects on active landfill gas collection systems in a semi-arid climate

S. Jeong, M.H. Park, J.Y. Kim (KR)

Spatial and temporal variation of landfill gas collection in Sudogwon landfill in republic of Korea

W.H. Stachowitz (DE)

LFG projects in Germany due to the national climate initiative by the German government

THURSDAY OCTOBER 5

AFTERNOON

SESSION C13 / 15:30-17:10

ASSESSMENT OF WM IN DEVELOPING COUNTRIES

Chair / *Presidente*:

F. Di Maria, E. Lovat, M. Caniato (IT)

Comparing waste management in developed and developing countries: the case study of the Umbria region (Italy) and of Waste Bank (Palestine)

E.M. Mukhtar, I.D. Williams, P.J. Shaw (GB)

Visible and invisible factors in solid waste management in developed and developing countries

J. Levis, A. Weisbrod, G. Van Hoof, M. Barlaz (US)

Life-Cycle Modelling of open dumping and burning of solid waste in emerging and developing countries

B.K. Sharma, M.K. Chandel (IN)

A Life Cycle Assessment to compare composting schemes for the treatment of municipal solid waste in Mumbai, India

17:10 - 18:00 Coffee break + Poster discussion

SESSION C14 / 18:00-19:40

RECYCLING BY THE INFORMAL SECTOR

Chair / *Presidente*:

S. Aparcana (DK)

Barriers and success factors of approaches to formalization of the informal waste sector in developing countries: a review

B. Steuer, R. Ramusch, S. Salhofer (AT)

Can the informal recycling sector in urban China survive amidst worsening circumstances?

R. Ramusch (AT)

Measuring informality? Challenges in quantifying informal recycling sector activities

K. Watanabe, S. Sasaki, K. Tiew, D. Irwan (JP)

Comparison of recycling activities at landfills in Indonesia and Malaysia

S. Ramaswami (DE)

Waste management scenario in Bangalore: scope for in-situ valorisation of bio-waste

SESSION D13 / 15:30-17:10

THERMAL TREATMENT OF SEWAGE SLUDGE

Chair / *Presidente*:

A. Tsybina, C. Wuensch (DE)

Analysis of thermal sewage sludge treatment methods in the context of circular economy

S. Delson, G. Kladnik (US)

Carbon neutral thermal energy recovery process for the management of some biowastes - Sewage sludge, animal and food wastes

S. Tang, C. Zheng, Z. Zhang (CN)

Effect of internal minerals on sewage sludge pyrolysis: products characteristics, kinetics and thermodynamics

Y. Tang, X. Zheng, P. Wu (CN)

Beneficially utilization of sewage sludge incineration ash for thermal immobilization of zinc in spinel structure

17:10 - 18:00 Coffee break + Poster discussion

SESSION D14 / 18:00-19:40

TREATMENT AND RECYCLING OF INDUSTRIAL WASTE

Chair / *Presidente*:

W. Ipsmiller, A. Bartl (AT)

State-of-the-art and future perspectives of end-of-life textiles management

P. Rossetti, G.A. Dino, G. Biglia, E. Costa (IT)

Characterization of secondary raw materials from mine waste: a case study from the Campello Monti Ni±Cu±CO±PGE mining site (Western Alps, Italy)

V.S. Rodrigues, B. Karolski, D.C.R. Espinosa, J.A.S. Tenório (BR)

Biodegradation of pollutants found in waste foundry sand

A. Niskanen, J. Kemppi, K. Koivunen, P. Kouvo (FI)

A novel monitoring tool for material flow management

T. Tesfaye, B. Sithole, D. Ramjugernath (ZA)

Valorisation of chicken feathers: recycling and recovery routes

THURSDAY OCTOBER 5

AFTERNOON

SESSION E13 / 15:30-17:10

COMPANIES WORKSHOP: VERMICOMPOSTING FOR ORGANIC WASTE RECYCLING I

Chairs / *Presidenti*: Michael Quintern - NOKE GmbH (DE), Max Morley - NOKE Ltd (NZ)

Vermicomposting has become the strategy of choice for households, small enterprises, municipalities, agriculture, and industries globally. Vermicomposting is transforming organic wastes and sludge - even sewage sludge - into a safe and highly valued fertiliser and soil conditioner known as vermicast for uses in home gardens, agriculture, horticulture and recreation areas. The workshop will provide key information and base knowledge of the vermicomposting technology, its requirements, economics, opportunities, and limitations at all scales of organic wastes producers. Case studies will be developed with the delegates for individual households, small enterprises and communities, and large industries by describing the design, performance, environmental impacts, and economic frameworks.

17:10 - 18:00 Coffee break + Poster discussion

SESSION E14 / 18:00-19:40

COMPANIES WORKSHOP: VERMICOMPOSTING FOR ORGANIC WASTE RECYCLING II

Chairs / *Presidenti*: Michael Quintern - NOKE GmbH (DE), Max Morley - NOKE Ltd (NZ)

In session E14 the discussion started in E13 will be continued.

SESSION F13 / 15:30-17:10

WORKSHOP: DATA QUALITY ASSESSMENT OF WASTE TECHNOLOGIES AND SYSTEMS I

Chairs / *Presidenti*: Anders Damgaard (DK), James Levis (US), Trine Henriksen (DK)

Life cycle assessment (LCA) is one of the most common tools for environmental assessment of waste technologies and systems. LCA rely on heterogeneous data sources, thus, data quality information is needed to evaluate the reliability of a study. Existing evaluation schemes in form of pedigree matrices contain data quality indicators whose evaluation is dependent or independent of the goal and scope of an LCA case study. Due to the relative interpretation of case-dependent indicators, their data quality evaluation is often non-transparent and subjective. Transparency can be enhanced by adapting the data quality indicators to the characteristics of the technical domain of interest. The objective of this workshop is to discuss data quality aspects characteristic of the waste treatment technology domain. The first session introduces data quality assessment in the context of solid waste management, and hereafter focuses on data representativeness.

Introductory lectures:

T. Henriksen (DK)

Introduction to data quality indicators in relation to LCA of waste treatment technologies

A. Damgaard (DK)

“Spatial representativeness” - Experience from case studies and highlight of main issues

J. Levis (US)

“Further technological representativeness” - Experience from case studies and highlight of main issues

17:10 - 18:00 Coffee break + Poster discussion

SESSION F14 / 18:00-19:40

DATA QUALITY ASSESSMENT OF WASTE TECHNOLOGIES AND SYSTEMS II

Chairs / *Presidenti*: Anders Damgaard (DK), James Levis (US), Trine Henriksen (DK)

The second session of the workshop will focus on substance coverage as well as the case-independent data quality indicators.

Introductory lectures:

T. Henriksen (DK)

Substance coverage” (named “completeness” in ILCD) - Experience from case studies and issues to be aware about

J. Levis (US)

Data sampling method, review and reliability

THURSDAY OCTOBER 5

AFTERNOON

SESSION G13 / 15:30-17:10

WORKSHOP: DISCUSSION OF DIFFERENT VALUES OF THE IPCC LFC MODEL

Chair / *Presidente*: Rainer Stegmann (DE)

Introductory lecture:

K-U. Heyer, K. Hupe, G. Rettenberger, R. Schneider, R. Stegmann (DE)

Long term experience with the IPCC default values, time to rethink?

17:10 - 18:00 Coffee break + Poster discussion

SESSION G14 / 18:00-19:40

WORKSHOP: ENHANCED LANDFILL MINING

Chair / *Presidente*:

Introductory lectures:

H. Särkkä, T. Kaartinen, E. Hannus, S. Hirvonen, T. Valjus, J. Lerssi, G. A. Dino, P. Rossetti, Z. Griffiths, S. T. Wagland, F. Coulon (GB)

Assessing the opportunities of landfill mining as a source of critical raw materials in Europe

G. Sauve, K. Van Acker (BE)

How the evolution of MSW composition affects the environmental impact of landfills: a review on European case studies

SESSIONE H13 (IN ITALIANO) / 15:30-17:10

SESSIONE ITALIANA

Chair / *Presidente*:

Maggiori dettagli saranno presto disponibili.

17:10 - 18:00 Coffee Break + Poster discussion

SESSIONE H14 (IN ITALIANO) / 18:00-19:40

SESSIONE ITALIANA

Chair / *Presidente*:

Maggiori dettagli saranno presto disponibili.

DAY 5 / FRIDAY
OCTOBER 6

FRIDAY OCTOBER 6 MORNING

SESSION A15 / 9:00-10:40

CONTROL OF CHEMICALS IN WASTE MATERIAL RECYCLING

Chair / *Presidente*:

G. Okkenhaug, N.A.O. Morin, S.E. Hale, Å.R. Almås, P.L. Andersson, H.P.H. Arp (NO)
Flame retardants in solid waste materials: presence and mobility at Norwegian waste-handling facilities

G. Faraca, A. Boldrin, A. Damgaard, T.F. Astrup (DK)
Challenges to a circular economy - The presence of impurities in wood waste for recycling

M.K. Eriksen, T.F. Astrup (DK)
Recycling of plastic waste from households: importance of contaminants

K. Stoknes, F. Scholwin, A. Jasinska, E. Wojciechowska, M. Mleczek, A. Hanc, P. Niedzielski (NO)
Cadmium mobility in a circular food-to-waste-to-food system and the use of a cultivated mushroom (*agaricus subrufescens*) as a remediation agent

10:40 - 11:10 Coffee break

SESSION A16 / 11:10-12:50

SOCIAL ASPECTS IN WASTE MANAGEMENT

Chair / *Presidente*:

M. Kottara (GR)
Demographic changes and their impact on the management of mixed and recyclable waste case study: the waste management in the municipality of Athens, in the period of economic crisis

S.A.B. Diop, P.J. Shaw (GB)
On the buying, gifting and giving of textiles: a comparative study of societal and situational factors in the UK and Senegal

S. Kisson, C. Trois (ZA)
Development of the waste resource optimization and scenario evaluation (WROSE) model to include social indicators for waste management decision making in developing countries

S. El-Agroudy, A. Badre, N. Hasan (EG)
An innovative MSWM policy for business interests

SESSION B15 / 9:00-10:40

LANDFILL GAS - TREATMENT AND EFFECTS

Chair / *Presidente*:

D. Uhlig, R. Berger (DE)

Advantages of using recuperative FLOX® combustion for the thermal treatment of landfill gas

C. Trois, A. Borello, S. Kissoon, P. Chetty (ZA)

Feasibility of landfill gas upgrade for use as a fuel source for refuse trucks: a case study in South Africa

P. Špičák, Z. Horsák, J. Hřebíček (CZ)

Landfill gas utilization in recycling technology for LDPE plastics

O. Schlosser, S. Robert, M. Peron, C. Debeaupuis (FR)

Appraising a "safe" buffer distance around waste disposal facilities - A case study of moulds and aspergillus fumigatus in air in the surrounding environment of non-hazardous waste landfill sites

10:40 - 11:10 Coffee break

SESSION B16 / 11:10-12:50

REMEDICATION OF LANDFILLS

Chair / *Presidente*:

A. Limoli, L. Dallago, M. Gabrielli, G. Andreottola (IT)

Leachate contamination on groundwater: a lab-scale study on biosparging remediation

R. Beaven, A. Stringfellow, S. Brown, A. Murthaza, R.J. Nicholls (GB)

A preliminary investigation of options for remediation of a coastal landfill in the Maldives

M. Araujo, C. Bernardes Jr. (BR)

A solution for closing open dumps for small municipalities in Brazil

J. Righi, A. Meliande, L. Moura, C. Mahler (BR)

Environmental monitoring of a closed irregular landfill in Brazil: evaluation of parameters in the period of operation and post-closure associated to the qualitative research

FRIDAY OCTOBER 6 MORNING

SESSION C15 / 9:00-10:40

LEACHATE IMPACT ON GROUNDWATER

Chair / *Presidente*:

K.S. Wilson, R. Stevens (GB)

The management of leachate utilising level sensors and data loggers - A case study from a closed landfill site in the UK

C. Pan, K.T.W. Ng, A. Richter (CA)

Hydrochemical assessment of groundwater quality near Regina municipal landfill

R. Cossu, F. Santaloia, L.E. Zuffiano', P.P. Limoni, P. Pizzardini, T. Miano, D. Mondelli, R. Garavaglia, C. Carella, M. Polemio (IT)

Geochemical and hydrogeological study to identify the source of nitrate in the carbonate aquifer (Southern Italy)

S.A. Kartha, B. Pradhan, P.J. Barman (IN)

Statistical interpretation of leaching of zinc from Boragaon (India) landfill refuse

10:40 - 11:10 Coffee break

SESSION C16 / 11:10-12:50

DIFFERENT ASPECTS OF WM IN DEVELOPING COUNTRIES

Chair / *Presidente*:

J. Lederer, J. Karungi, F. Ogwang (AT)

Knowledge creation among local stakeholders in CDM waste composting projects: a case study from Uganda

B.K. Mavakala, C.K. Mulaji, P.T. Mpiana, V. Elongo, J-P. Otamonga, E.M. Biey, W. Wildi, J. Pote, G. Giuliani (CH)

Citizen sensing of solid waste disposals: crowdsourcing as a tool supporting waste management in a developing country

E. Antwi, S. Lekchiri, N. Engler, H. Latrache, M. Nelles, A. Schüch (DE)

Agro waste management strategies in low income countries - Future perspectives to use waste as a resource

M.S. Islam, S.M. Moniruzzaman, M. Alamgir (BD)

Simulation of sustainable solid waste management system of Khulna city in Bangladesh through Life Cycle Assessment

S. Begum, A.G.R. Anupoju, N. Esthiagi, S. Sridhar, V. Jegatheesan (IN)

Significance of biogas solutions in transition towards circular and bio based economy: case studies of decentralised biogas plants in India

N.R. Khatiwada, S.M. Shakya, M.G. Ranjitkar, N. Dugar (NP)

Solid waste management in emerging municipalities of Nepal

SESSION D15 / 9:00-10:40

CONSTRUCTION AND DEMOLITION WASTE

Chair / *Presidente*:

F. Kleemann, H. Lehner, A. Szczypińska, J. Lederer, J. Fellner (AT)

An innovative method to determine amount and composition of building demolition waste on a regional level – The case of Vienna

L.P. Rosado, C.S.G. Penteado (BR)

Environmental performance evaluation of an inter-municipal consortium of construction and demolition waste management in Brazil

S. Tuprakay, S.R. Tuprakay (TH)

The study of standard concrete recycle as aggregates in concrete products

A. Albeeshi, Z. Mohammad, K. Alfadhel (KW)

Construction & demolition waste management in the state of Kuwait: challenges & solutions

G. Borghi, S. Pantini, L. Rigamonti (IT)

Application of LCA to construction and demolition waste (CDW) management in Lombardy region

10:40 - 11:10 Coffee break

SESSION D16 / 11:10-12:50

RECYCLING OF WASTE FROM COAL AND STEEL INDUSTRY

Chair / *Presidente*:

P. Wang, S. Kara, M. Z. Hauschild (AU)

The role of circular economy, consumption reduction, and material efficiency in peak waste

A. Taskin, V. Petukhov, A. Yudakov, O. Danilov (RU)

The question of integrated use of ash and slag wastes on the far east of the Russian federation (case of chp-2, Vladivostok)

A. Di Maria, K. Van Acker (BE)

How to evaluate environmental benefits in circular economy: attributional vs a consequential life cycle approaches for a case study in the steel industry

FRIDAY OCTOBER 6 MORNING

SESSION E15 / 9:00-10:40

WORKSHOP: ACIDOGENIC FERMANTATION

Chair / *Presidente*: Anders Lagerkvist (SE)

Through Acidogenic Fermentation organic wastes can be valorized as base chemicals, including methane-rich biogas and also more valuable organic acids, alcohols and hydrogen. This workshop aims to discuss and evaluate the state of the art in acidogenic fermentation technology today, and outline its potentials and bottle necks for application in waste treatment.

Introductory lecture:

S. Bengtsson, F. Morgan-Sagastume, S.S. Pawar, I. Sárvári-Horváth, A. Lagerkvist (SE)

Acidogenic fermentation as hub-biotechnology for the valorization of organic wastes

10:40 - 11:10 Coffee break

SESSION E16 / 11:10-12:50

WORKSHOP: CHEMICALS AND CIRCULAR ECONOMY

Chair / *Presidente*:

Introductory lecture:

L. Xanthopoulou, T. F. Astrup (DK)

Chemicals and circular economy: challenges related to Life Cycle Assessment

SESSION F15 / 9:00-10:40

COMPANIES FORUM I

Chair / Presidente:

The primary goal of these forums is to create a balance in the event between the scientific content and the industry contributions, in order to foster exchanges between practitioners and the academics, to promote novel solutions to today's challenges in the area of Waste Management, and to provide practitioners in the field an early opportunity to evaluate leading-edge research and present their own products and services.

Ample time will be given to discussion and networking.

10:40 - 11:10 Coffee break

SESSION F16 / 11:10-12:50

COMPANIES FORUM II

Chair / Presidente:

In Session F16 the discussion started in the previous session F15 will be continued with exhibitors and supporters.

FRIDAY OCTOBER 6 MORNING

SESSION G15 / 9:00-10:40

**WORKSHOP: LEACHATE MANAGEMENT IN TROPICAL AREAS:
CONSTRAINTS, SOLUTIONS, CHALLENGES**

Chair / *Presidente*: Maria Cristina Lavagnolo (ITA), Mohammed Alamgir (BD)

Details will be soon available soon.

10:40 - 11:10 Coffee break

SESSIONE H15 (IN ITALIANO) / 9:00-10:40

SESSIONE ITALIANA

Chair / *Presidente*:

Maggiori dettagli saranno presto disponibili.

10:40 - 11:10 Coffee break

SESSIONE H16 / 11:10-12:50

WORKSHOP: SESSIONE ITALIANA

Chair / *Presidente*:

Maggiori dettagli saranno presto disponibili.

POSTER SESSIONS
SESSIONI POSTER

POSTER SESSIONS

SESSIONI POSTER

Poster presentations will be accessible to Symposium delegates at all times. Poster discussion will take place in the presence of authors in the afternoon from Monday to Thursday from 17:40 to 18:00.

Le presentazioni poster saranno sempre accessibili ai partecipanti al Simposio. La discussione dei poster avverrà alla presenza degli autori dal lunedì, al giovedì pomeriggio dalle 17:40 alle 18:00.

A. WASTE RECOVERY AND RECYCLING

A01 - B. Tarko, K. Gorazda, Z. Wzorek (PL)

Phosphorus recovery from polish sewage sludge ash - Potential of fertilizer production

A02 - H. Kominko, K. Gorazda, Z. Wzorek (PL)

Dried sewage sludge as a component of organo-mineral fertilizers - Polish perspective

A03 - E. Kłosek-Wawrzyn, P. Murzyn, W. Wons (PL)

Analysis of the possibility of limestone sludge usage in the production of clay

A04 - C. Martínez García, M.T. Cotes Palomino, F. De A. Torres Fernández, F.J. Iglesia Godino, V. Molina Moreno, F.A. Corpas Iglesias (ES)

Development of eco-friendly materials from sewage sludge used as technological nutrient for a circular economy

A05 - K. Shih, H. Yan, L. Kong (HK)

Quantitative X-Ray diffraction technique for characterizing phosphates recovered from wastewater

A06 - M. Kanayama, M. Fujii, M. Kudo, S. Kawamura, K. Nakamura (JP)

Study on solidification treatment of soil using waste oyster shell

A07 - S. Kawamura, M. Kanayama, R. Yamazaki, K. Yuge (JP)

Study on engineering properties of bamboo fiber mixed soil

A08 - A.F. Braga, H. Ribeiro, W. M. R. Gunther (BR)

Preliminary evaluation of the program goals for recycled solid waste in the São Paulo municipality, Brazil

A09 - Y.M. Atinuke (NG)

Organic and non organic waste recycling management

A10 - M.T. Cotes-Palomino, C. Martínez-García (ES)

Preliminary study of the use of liquid extract obtained from olive oil waste as fertilizer

B. BIOLOGICAL TREATMENT

B01 - *S.K. Ghosh, F. Di Maria (IT)*

A comparative study of issues, challenges and strategies of bio-waste management in India and Italy

B02 - *F. Di Maria, F. Sisani, M. Lasagni (IT)*

Substitution of energy crops with bio-waste in an existing anaerobic digestion plant: a Life Cycle Analysis

B03 - *M. Zielińska, M. Dębowski, A. Cydzik-Kwiatkowska, M. Zielińska, A. Głowacka-Gil, P. Rusanowska (PL)*

Change-pressure disintegrator - Technology for small biogas plant presented in record biomap

B04 - *O. Yavorovska (UA)*

Dynamics of organic fraction of Municipal Solid Waste in Vinnitsa (Ukraine)

B05 - *M. Zieliński, M. Dębowski, M. Zielińska, A. Cydzik-Kwiatkowska, A. Głowacka-Gil, P. Rusanowska (PL)*

Device for ultrasound disintegration of organic matter - Technology for small biogas plant presented in record biomap network

B06 - *C. Lee, J.Y. Kim (KR)*

Methane production and biodegradability of cattle manure with chlortetracycline during mesophilic anaerobic digestion using lab-scale batch test

B07 - *A.K. Sander, A.L.V. Cubas, E.H.S. Moecke (BR)*

Use of non-thermal plasma in the pretreatment of lignocellulosic wastes for bioethanol production

B08 - *I. Pecorini, M. Akhlaghi, F. Baldi, E. Albin, A. Rossi, D. Bacchi, A. Poletti, L. Lombardi, R. Pomi (IT)*

Influence of pH and food to microorganism ratio on fermentative biohydrogen production from organic fraction of municipal waste

B09 - *S. Saha, M. Alamgir (BD)*

Experimental study on the safe use of faecal sludge and organic solid waste through co-composting in aquaculture

B10 - *T. Wawilow, S. Herbert, U. Theilen, N. Hasport, M.J. Gellert, C. Thomsen (DE)*

Nutrient removal with microalgae - Reduction of the effluent concentration from wastewater treatment plant

B11 - *E. Hroncová, J. Ladomersky (SK)*

Gradual loss of effectiveness and failure of biofilter for cleaning waste air from a waste water treatment plant. Case study

B12 - *S. Eichenauer, U. Theilen (DE)*

Comparison of wastewater management strategies using anaerobic (co-)digestion in rural and urban areas regarding energy-efficiency and carbon footprint

POSTER SESSIONS

SESSIONI POSTER

C. THERMAL TREATMENT

C01 - *F. Fedrizzi, A. R. Finotti, S. R. Soares, A. R. Cabral (CA)*

Characterization of insular sewage sludge stabilization by liming and thermal treatment

C02 - *M. Materazzi, R. Taylor, C. Chapman, C. Manson-Whitton (GB)*

Production of biosng from municipal solid waste: pilot plant operation and preliminary assessment

C03 - *J. Wang, Y. Liao, Q. Xu, J.H. Ko (CN)*

Polycyclic aromatic hydrocarbons formation in particulate matter during sewage sludge pyrolysis

C04 - *K. Tameda, S. Higuchi, M. Hanashima, N-H. Lee, E-A. Cho, M. Kawashimaf (JP)*

Study on recycling of waste plastics disposed of in landfills by washing treatment

C05 - *I. Sánchez López, A. Gallardo Izquierdo, N. Edo-Alcón (ES)*

Study of the gasification process of the refuse derived fuels through simulation in a bubbling fluidized bed reactor

D. LANDFILL ENGINEERING

D01 - *K. Chae, S. Inazumi, J. Won, J. Park, J. Han (KR)*

Structural performance evaluation of the joint of vertical cutoff walls in offshore waste landfill

D02 - *S. Bae, D. Lim, S. Yoon, D. Seo, J. Lee (KR)*

The physical characteristics of the water cutoff materials, which applied into the inter-connection joint seam of vertical shaft in offshore landfill site

D03 - *K. Berger (DE)*

Comparison and validation of swms_2d and hydrus 2d/3d for capillary barriers using data of a 10-m long tipping trough

D04 - *H. Raveh-Amit, N. Banano, G. Bar-Nes, M. Tsesarsky (IL)*

Bio-cementation for physico-mechanical soil improvement of capping layers in near-surface radioactive disposal sites

D05 - *A. Tachifuji, Y. Matsufuji, S. Suzuki, O. Hirata (JP)*

Application of survival rate of soil bacteria and biodiversity index using "Biolog" assay for evaluating landfill stabilization level

D06 - *N. Ruxton (AU)*

Geotechnical challenges of brownfield sites for use as landfill

D07 - *S. Usami, K. Shibata, J. Hinobayashi (JP)*

Evaluation of crack generation formed by local subsidence using the large-scale bentonite-mixed soil layer model

D08 - *J. Esteban- Altabella, J. Mcdougall, F.J. Colomer- Mendoza, A. Gallardo, N. Edo-Alcón (ES)*

Review and application of a settlement model for landfills

D09 - *A. Almohana, D. J. Richards, A. M. Stringfellow (GB)*

The geotechnical properties of high organic content waste

D10 - *R.L. Moretto, A.C.S. Neto, V.R. Elis, M.G. Miguel (BR)*

Detection of leachate pockets in experimental cell of Municipal Solid Waste with aid of geophysics

D11 - *J.C. Hernández Parrodi, D. Höllen, R. Pomberger (BE)*

Characterization of fine fractions from landfill mining: a review of previous landfill mining investigations

E. LANDFILL EMISSION AND ENVIRONMENTAL IMPACT

E01 - *L.S.M.S. Lima, R. Almeida, D.M. Bila, J.C. Campos (BR)*

Evaluation of Fenton process for humic substances removal in different landfill leachate in Rio de Janeiro state, Brazil

E02 - *F.M. França, G. Gomes, L.C. Felix, A.S. Argolo, D.M. Bila (BR)*

Evaluation of estrogenic activity and toxicity of landfill leachate J. Kumpiene,

E03 - *A. Kasiuliene I. Carabante (SE)*

Leachate treatment with iron-coated peat

E04 - *C.P. Pereira, T.C. Pereira, D.M. Bila, J.C. Campos (BR)*

Evaluation of residual estrogenic activity in the combined treatment of landfill leachate and domestic sewage

E05 - *L.S.M.S. Lima, R. Almeida, B.R. Quintaes, D.M. Bila, J.C. Campos (BR)*

Characterization of leachates generated in three different landfills in Rio de Janeiro state, Brazil

E06 - *R. De Almeida, F.A. Oroski, J.C. Campos (BR)*

Treatment of landfill leachate by a combined process of coagulation-flocculation and nanofiltration

E07 - *S. Masi, M. Caivano, I.M. Mancini, M.T. Tito, R. Pascale, D. Caniani (IT)*

Towards new management tools for the monitoring and management of landfill gas in small sites

E08 - *C. Sánchez, M.M. De La Fuente, A. Narros, I. Del Peso, E. Rodríguez (ES)*

Determination of methane oxidation in landfill fugitive emissions by ¹³C isotope measurements

E09 - *E. Hroncová, J. Ladomersky (SK)*

Landfill air pollution by ultrafine and microparticles in case of dry and windless weather conditions

POSTER SESSIONS

SESSIONI POSTER

E10 - *K. Ishii, T. Furuichi, A. Fujiyama, M. Sato (JP)*

Flow and transport parameter estimation for 1,4-dioxane groundwater contamination at an illegal dumping site

E11 - *H. Park, M. Oh, O. Kwon, W. Cho (KR)*

Numerical analysis on the seepage and contaminant transport through seabed at offshore landfill considering sea level variations

E12 - *A. Tetreault, T. Øian, J.K. Reistad, K. Haarstad (NO)*

Electrocoagulation used in treatment of biogas reactor liquid waste

F. WASTE MANAGEMENT POLICIES AND STRATEGIES

F01 - *Y. Ikeda (JP)*

Citizen activities may be effective in waste reduction in a region

F02 - *M. Rehan, I.M.I. Ismail, A.S. Nizami (SA)*

Municipal Solid Waste and circular economies: a case study of Madinah City

F03 - *M. Sousa, G. Ferreira Guarda, K. Whitaker (BR)*

Green it: virtualization and reverse logistics as sustainable practices

F04 - *C. Martínez García, T. Cotes Palomino, A.M. Coves Martínez, J. Martínez Nájera (ES)*

The influence of music in the teaching of engineering study practices

G. SPECIAL AND INDUSTRIAL WASTE MANAGEMENT

G01 - *M. Li, J. Yang, W. Yu, Y. Hu, S. Liang, J. Wang, W. Zhang, P. Zhang, X. Wu, H. Hou, B. Liu, J. Hu (CN)*

Green synthesis of high-purity tetrabasic lead sulfate from recycled lead acid battery paste and its electrochemical properties

G02 - *A.P. Gabriel, B.B. Giordani, A. Kasper, H.M. Veit (BR)*

Indium extraction from LCD screens

G03 - *A.P. Gabriel, B.B. Giordani, A.C. Kasper, H.M. Veit (BR)*

LCD screens - Indium leaching

G04 - *M. Liu, A. Iizuka, E. Shibata (JP)*

Magnetic properties of acid mine drainage sludge derived hexagonal ferrite

G05 - *H.S. Kim, J.B. Kim (KR)*

Recycling of mine residue contaminated by arsenic ions through immobilization process

G06 - *O. Danilov, A. Taskin, I. Grebenyuk, A. Belov (RU)*

Comprehensive scheme of the lignite waste recycling using electromagnetic microwave radiation

- G07** - *A.B. Botelho Junior, V.S. Rodrigues, D.C.R. Espinosa, J.A.S. Tenório (BR)*
Tailing treatment of nickel mining using ion exchange process
- G08** - *I.D. Perez, M.M.J. Correa, V.S. Rodrigues, D.C.R. Espinosa (BR)*
Selective nickel and cobalt uptake from mining effluent of lateritic nickel by using chelating resin dowex xus43605
- G09** - *V. Bocullo, D. Vaičiukynienė, V. Vaitkevičius, D. Nizevičienė, R. Bistrickaitė, E. Ivanauskas, A. Grinys, V. Sasnauskas, A. Augonis (LT)*
Concrete produced with sulphur slime and modified sulphur slime aggregates
- G10** - *K. Podbiera-Matysik, K. Gorazda, Z. Wzorek (PL)*
Phosphogypsum as an alternative source of rare earth elements - Polish case studies
- G11** - *C. Badila, Q. Yuan (CA)*
Full scale application in septic field of tire derived aggregate (TDA) vs natural aggregate
- G12** - *A.P. Gabriel, L.R. Santos, A.C. Kasper, H.M. Veit (BR)*
Characterization and studies of metal recovery from copper smelting slag
- G13** - *S. Das, K.N. Goh, Y-P. Ting (SG)*
Bioleaching of platinum group metals (pt, pd, rh) from spent automotive catalytic converters using genetically modified bacteria
- G14** - *V. Rudelis, D. Vaičiukynienė, D. Nizevičienė, A. Kantautas, J. Mockienė (LT)*
Gypsum - Based composite material with sulphur slime and waste silica
- G15** - *C.S. Theóphilo, M.A.G. Hinojosa, B.R. Quintaes, J.C. Campos (BR)*
Diagnosis of health care waste generation of a hospital unit in Rio de Janeiro municipality, Brazil

H. ENVIRONMENTAL ASPECTS

- H01** - *M.L. Mastellone, R. Lotito (IT)*
Odour impact assessment: a regulation proposal for industrial activities
- H02** - *P. Innemanová, M. Šereš, V. Pilnáček, T. Cajthaml, Z. Křesinová, M. Pohořelý, J. Moško (CZ)*
Elimination of substances with antibiotic or estrogenic activity from dewatered sewage sludge
- H03** - *D.R. Lapen, E. Topp, N. Gottschall, M. Edwards (CA)*
land application of municipal biosolids: managing the fate and transport of contaminants of emerging concern
- H04** - *K. Yamamoto, A. Kobayashi, K. Harashina, Y. Muto, E. Kurashima (JP)*
Electrical-conductivity-distribution measurement using an electromagnetic survey of paddy fields damaged by tsunami