

CONFERENCE

PROGRAM

CRETE 2012

***3rd International
Conference on
Industrial and
Hazardous Waste
Management***

***12-14 September 2012
Chania, Crete,
Greece***

Organized by:

Technical University of Crete (GR)

University of Padua (IT)

*Nanyang Technological University
(SG)*

IWWG –

International Waste Working Group

Conference Chairmen



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CENTRAL SPONSOR



***Hellenic Petroleum** holds a strong position in the international energy sector, mainly in SE Europe and is the largest industrial and commercial company in Greece. The main current business activities are: Refining & Marketing of petroleum products (R&M), Petrochemicals/Chemicals, Oil & Gas Exploration & Production (E&P), Power Generation Production and Trading and Natural Gas. In the R&M sector the Group holds the three of the four refineries in Greece and operates 1.262 retail stations.*

SPONSOR



***HELLAS GOLD** is a mining company, incorporated in December 2003. It is a 95% owned subsidiary of “Eldorado Gold Corporation”, a Canadian mining company listed in Toronto stock exchange (EGU.TO), while the Greek construction company “ELLAKTOR” Group holds a 5% interest as well. In January 2004, HELLAS GOLD acquired the mining rights of the ex “Kassandra Mines” in Halkidiki, under a contract signed between the Greek State and the Company. Currently HELLAS GOLD operates “Mavres Petres” mine at Stratoní Halkidiki, from which mixed sulphides concentrates (lead/silver and zinc) are mined and further enriched to be then exported to the international metal market. The Company has recently received all necessary permits to exploit the Olympias gold reserves (lead, zinc, silver and gold) and porphyry reserves Skouries (copper and gold) and to establish the first gold metallurgical plant in Greece.*



CRET 2012 focuses on innovative aspects of Industrial and Hazardous Waste Management, presenting new technologies, describing the state of the art and related case studies, discussing main controversial subjects, sharing experience among different countries and valuating social and financial balances.

It includes oral presentations, special workshops and sessions, as well as poster presentations. Selection of papers and session destination are based on several factors, including scientific quality of the paper, relevance of the topic, nature of the paper (case study, preliminary work, conceptual work, design, etc.), specificity of the topic and novelty.

All papers are organized and published on a USB stick, according to the session order. In addition, a book has been printed with the extended executive summaries of the conference papers, in order to allow a better attendance of the different sessions. Last minute changes in the conference program may have resulted unconformity with the printed book of executive summaries.

Selected papers, presented (orally or as a poster) during CRET 2012 Conference, will be forwarded for review and publication in selected scientific Journals.



Future waste management programs must be put into practice in conjunction with sound policies that restrict the use of fossil fuels and natural resources and contribute to the reduction of emissions into the environment. Such a strategy should be based in a sound scientific basis, without ideology, politics or financial interests. It should be implemented on a world-wide basis and not limited to industrialized countries. To achieve this goal, existing waste management options must be evaluated for implementation, new strategies must be formulated and new, innovative solutions have to be found.

Based on this need, the IWWG (International Waste Working Group) was established in 2002, not to contrast or to compete with existing professional organizations but to set up a network with existing national and international organizations with similar goals.

The IWWG aims to provide an intellectual platform to encourage and support integrated and sustainable waste management and to promote practical scientific development in the field.

For further information:

www.iwwg.eu

info@iwwg.eu

Tuesday, September 11th - Afternoon

18:00 – 20:00

Free entrance at the Maritime Museum of Chania at the Old Venetian Port

20:00 – 23:00

Welcome reception at the MORO renovated shipyard of the Chania Sailing Club at the Old Venetian Port

Info: From 8th to 30th September 2012, an exhibition on SEA WASTE AND CONTAMINATION will be open to the public at the MORO renovated shipyard of the Chania Sailing Club at the Old Venetian Port. This exhibition is organized and created by the Department of Environmental Engineering of the Technical University of Crete (Lab. of Toxic and Hazardous Waste Management).

Wednesday, September 12th - Morning

8:00 – 9:00

Registration

9:00 – 10:00

Opening Ceremony

Room - *Grand Imperial*

Chairmen:

E. Gidakos

R. Cossu

R. Stegmann

- Welcome Addresses

- I. Phillis

Rector of the Technical University of Crete

"Strategies for Sustainable Management"

10:00 – 11:00

Keynote Speakers

Room – *Grand Imperial*

Chairman: R. Cossu (IT)



Prof. Dr. R. Stegmann

Nanyang Technological

University

(Singapore)

"Future Management of Hazardous and
Special Waste- Some Reflections?"



Prof. Dr. M. Zanetti

Technical University of Torino

(Italy)

"The Importance of Waste Characterization
for Treatment, Recycling and Reuse of
Industrial Waste"

Discussion

11:00 – 11:30

Coffee Break

Wednesday, September 12th - Morning

11:30 – 13:30 Room – Grand Imperial
SESSION 1: Industrial and Hazardous
Waste Legislation

Chairman: B. Bilitewski (DE)

- 1.1. *Review of hazardous waste policy and minimum treatment standards in Europe*
Raptis C., Lolos T., Tsompanidis C. (GR)
- 1.2. *Comparison of new classification approaches for hazardous chemical products and hazardous wastes – adaptation of waste characterization to new chemicals legislation*
Wirth O., Sander K. (DE)
- 1.3. *DiscriSet: biotests for hazard characterization of waste – a tool for hazardous waste classification*
Weltens R., Vanermen G., Tirez K., Deprez K., Michiels L., Rossi E. (BE)
- 1.4. *Extended producer responsibility policies in Greece and Cyprus: current achievement and challenges ahead*
Lasaridi K., Zorpas A.A., Abeliotis K., Chroni C., Ioannou T. (GR)
- 1.5. *Assessment of guidelines and quality control for use of recycled materials in New South Wales, Australia*
Thom J.M., Nash J.M. (AU)
- 1.6. *WEEE management: case study Serbia*
Stepanović M., Vlahović M., Stanković D., Jovanić P. (RS)

Discussion

Wednesday, September 12th - Morning

11:30 – 13:30 Room – Imperial I

SESSION 2: Metallurgy & Scrap Metals

Chairman: G. Rettenberger (DE)

- 2.1. *Characterization and treatment of metallurgical waste deposits of the Villasalto old antimony mine (SE Sardinia, Italy)*
Contini E., Naitza S., Peretti R., Tocco S., Zucca A. (IT)
- 2.2. *Studies for remediation by soil flushing in a metallurgical plant site*
Desogus P., Manca P.P., Orrù G. (IT)
- 2.3. *Role of microbes in hydrometallurgical residue stability: a review and case study*
Lin W.Y., Zhang B.Y., Zhu Z.W. (CA)
- 2.4. *Mass balance and oxidation of aluminium scraps fed into incineration furnaces*
Biganzoli L., Grosso M., Gorla L., Nessi S., Bonelli M. (IT)
- 2.5. *Generation characteristics of arsine during metal recovery by acid from lead smelter dust*
Mizutani S., Muragishi H., Kanjo Y., Hasegawa H. (JP)

Discussion

Wednesday, September 12th - Morning

11:30 – 13:30 Room – Imperial II

SESSION 3: Modeling

Chairmen: P. Amosov (RU) &
L. Pawlowski (PL)

- 3.1. *Use of mathematical modeling methods when developing monitoring system component and engineering decisions on underground hydrosphere pollution prevention at a potential site of LW and IW disposal*
Amosov P., Novozhilova N., Klimin S. (RU)
- 3.2. *Neuro-fuzzy model based predictive algorithm for environmental management of buildings*
Papantoniou S., Kolokotsa D., Pouliezos A. (GR)
- 3.3. *Parametric modeling for neutral assessment of environmental liabilities – some field data*
Lindskog S., Labor B. (SE)
- 3.4. *Application of advanced clustering methods in a GIS based forest fire risk assessment tool*
Gobakis K., Lykas C., Kolokotsa D., Stavrakakis G., (GR)
- 3.5. *The development of a decision support software tool for solid waste management planning*
Panagiotidou N., Stavrakakis G., Venetis C., Konstantzos G., Inglezakis V., Moustakas K., Loizidou M. (GR)

Discussion

Wednesday, September 12th - Morning

11:30 – 13:30 Room – Imperial III

Sp. SESSION I: Sea & Waste:
the case of shipwrecks

Chairman: E. Gidarakos

Shipwrecks and waste dumping are among the largest sources of sea pollution. Especially in the Mediterranean Sea, it has been found that 5% of the world's sunk vessels and around 6% of the estimated released oil volumes exist. In the case of shipwrecks, oil is not the only threat to marine biodiversity. The ageing of shipwrecks metal structure, as well as the deterioration of several constructing materials and corrosion, may cause important continuous release of toxic and hazardous substances, such as mercury, into the sea.

I.1. *Sea waste and contamination: a short review*

Aivalioti M., Gidarakos E. (GR)

I.2. *Evidence of high risk maritime conditions in the Aegean Sea*

Miliou A., Acasuso-Rivero C.,
Shepperson J., Lindholm A., Caprio C.,
Demetriou M. (GR)

I.3. *Anthropogenic particles and emerging pollutants in coastal sediments*

Barceló D., Farré M., Llorca M.,
Karapana-gioti H., Siavalas G.,
Christanis K., Takada H. (SP)

I.4. *Environmental liability for cruise ship disasters: a case study of the Sea Diamond*

Aylesworth S., Faure A., Moffa A.
(USA)

I.5. *SEA DIAMOND – Evaluation and qualitative/ quantitative characterization of toxic and hazardous substances*
Gidarakos E. (GR)

I.6. *Simulation of physicochemical phenomena and heavy metal release in a laboratory - scale reactor, due to WEEE present in the MS Sea Diamond shipwreck*

Hahladakis J., Gidarakos E., Michailakis S. (GR)

Discussion

13:30 – 15:30 Lunch Break

Wednesday, September 12th - Afternoon

15:30 – 16:00 Poster Session

16:00 – 16:30 Keynote Speaker
Room – Grand Imperial

Chairman: E. Gidakos (GR)

Prof. Dr. R. Surampalli
U.S. Environmental Protection Agency (USA)



“Emerging Contaminants in
the Environment”

Discussion

Wednesday, September 12th - Afternoon

16:30 – 18:30 Room – Imperial III

SESSION 4: Asbestos

Chairmen: F. Paglietti (IT) & R. Surampalli (USA)

4.1. *Integrated management guidelines for asbestos containing materials – ACMs*

Gidakos E., Anastasiadou K. (GR)

4.2. *Public management of Italian asbestos contaminated sites*

Paglietti F., Bellagamba S., Conestabile Della Staffa B. (IT)

4.3. *Asbestos disposal in Lombardy (Northern Italy)*

Sciunnach D., Bellingeri D., Capetta C., Cappa S., Cornaggia N., Losa L., Mensi C., Somigliana A., Zini E. (IT)

4.4. *Croatian practice in removal and disposal of asbestos containing materials*

Lovinčić V., Sojcic M. (HR)

4.5. *An innovative technology for the detoxification of asbestos*

Anastasiadou K., Kousaiti A., Gidakos E. (GR)

4.6. *Asbestos waste carbonation: a new asbestos treatment with CO₂ recovery*

Trapasso F., Croci D., Plescia P., Tempesta E. (IT)

Discussion

Wednesday, September 12th - Afternoon

16:30 – 18:30 Room – Imperial I

SESSION 5: Recovery Opportunities

Chairmen: S. Heuss-Aßbichler (DE) &
O. Krueger (DE)

- 5.1. *Combined material and energy recovery from incontinence material*
Burkhardt M., Busch G. (DE)
- 5.2. *Recent developments in solid waste management – Bio-methanisation and Bio-energy generation from domestic and industrial wastes*
Rajamani S. (IN)
- 5.3. *Electrodialysis for the nickel electroplating industry from Sinos river basin*
Benvenuti T., Haubert G., Fensterseifer Jr. G., Rodrigues M.A.S., Bernardes A.M., Zoppas Ferreira J. (BR)
- 5.4. *Resource recovery potential of sewage sludge ashes (SSA)*
Krueger O., Adam C. (DE)
- 5.5. *Precise determination of rare earth elements (REEs) for evaluation of recovery rate by an extraction with a dilute acid*
Kashiwakura S., Wagatsuma K. (JP)
- 5.6. *Pyrolysis and recycling of the reinforcement from wind blades scraps: a case study*
Pico D., Jansen M., Seide G., Gries T. (DE)

Discussion

Wednesday, September 12th - Afternoon

16:30 – 18:30 Room – Imperial II

SESSION 6: Heavy Metal Contamination

Chairmen: M. Economou-Eliopoulos (GR) &
P. Samaras (GR)

- 6.1. *Evaluation of the Cr(VI) contamination at the Assopos-Thiva basins and C. Evia, Greece: an integrated approach on the soil, plant-crops and groundwater system*
Economou-Eliopoulos M., Megremi I., Atsarou C., Theodoratou Ch., Vasilatos Ch. (GR)
- 6.2. *Investigation of potential soil contamination with Cr in the facilities of a metal finishing unit at Asopos industrial area*
Floros N., Panagopoulos J., Karagianis A., Papassiopi N., Xenidis A. (GR)
- 6.3. *Hexavalent chromium [Cr(VI)] in drinking water of Greece – estimation of the origin*
Mitrakas M., Tzouranos N.D., Kazakis N., Kaprara E., Simeonidis C., Samaras P., Zouboulis A.I. (GR)
- 6.4. *Hexavalent chromium pollution, speciation and stable isotopes*
Mimides T.M., Koilakos D.I. (GR)
- 6.5. *Assessment of heterogeneity in heavy metal contamination in soil: an example from a historical mining and smelting waste deposit in Lavrion, Greece*
Argyrazi A., Zotiadis V. (GR)
- 6.6. *Groundwater remediation from Cd, Zn contamination using Greek natural zeolite - laboratory batch and column experiments*
Simantiraki F., Gidarakos E. (GR)

Discussion

Wednesday, September 12th - Afternoon

16:30 – 18:30 Room – Grand Imperial
WORKSHOP I: Diffusion of Waste-Related Cleaner Technologies: How R&D Contributes to Sustainable Solutions

Chairman: Dr. André Martinuzzi
Vienna University
(Austria)



Cleaner technologies are expected to increase efficiency, reduce the consumption of energy and natural resources and minimize waste generation. They reduce environmental impacts and at the same time create benefits for businesses. Many international RTD programmes, such as the 7th EU Framework Programme, are oriented towards the development of cleaner technologies, putting emphasis on waste prevention, reuse and recycling. While all thus funded projects put their efforts into the development of innovative technologies, only a few of them explicitly take the diffusion of their technologies into account. Approaches and experience of these projects are at the core of this workshop.

- WI.1. *How European research projects on waste-related cleaner technologies contribute to sustainable solutions*
Martinuzzi A., Montevecchi F. (AT)
- WI.2. *Maximizing resource use from building demolitions: UK Case Studies*
Curran T., Williams I.D., Kent A. (UK)
- WI.3. *Bio-composites based on forest derived materials and biodegradable polymers*
Lazzeri A., Cinelli P., Phuong T.V., Anguillesi I. (IT)
- WI.4. *A novel red mud treatment process*
Balomenos E., Gianopoulou I., Panias D., Paspaliaris I. (GR)

Round Table Discussion

18:30 – 19:00 Coffee Break

Wednesday, September 12th - Afternoon

19:00 – 20:30 Room – Imperial II

WORKSHOP II: IWWG Task Group:
Industrial Waste
Management

Chairman: Prof. Dr. Evang. Gidarakos
Technical University of Crete
(Greece)



The aim of this Special Workshop, organized by the IWWG Task Group on Industrial Waste Management, is to explore, exhibit and debate the different concepts of industrial waste management and what exactly does the industry still need. Today's accomplishments - developments and needs, evaluation of the prevailing conditions, as well as economical analyses and perspectives will be the focal points of the workshop during CRETE 2012.

WII.1. *Industrial wastes characterization, management and applied remediation techniques*
Gidarakos E. (GR)

WII.2. *Use of pH dependence testing and geochemical speciation modelling to avoid a worst case approach in assessing hazardous properties when classifying waste as hazardous or non-hazardous*
Van Der Sloot H.A., Hjelmar O., Kosson D.S., Van Zomeren A. (NL)

WII.3. *Chances and limits of hazardous waste management with respect to dissipated products*
Friege H. (DE)

Round Table Discussion

Wednesday, September 12th - Afternoon

19:00 – 20:30 Room – Imperial I

SESSION 7: Hazardous Substances in the Food Chain

Chairman: D. Barceló (SP)

7.1. *Perfluorinated compounds in the food chain*

Farré M., Pérez F., Llorca M., Al-Harb N., Skrbic B., Barceló D. (SP)

7.2. *Pharmaceutical waste and connected risks for the food chain*

Morosini C., Severgnini P., Cavallo D.M.G., Chiaranda M., Urbini G. (IT)

7.3. *The uptake of nickel and chromium from irrigating water by potatoes, carrots and onions*

Stasinou S., Theocharis S., Zabetakis I. (GR)

7.4. *Cultivation of medicinal and aromatic plants in heavy metal - contaminated soils - exploitation with caution*

Lydaki-Simantiris N., Skoula M., Fabian M., Naxakis G. (GR)

Discussion

Wednesday, September 12th - Afternoon

19:00 – 20:30 Room – Grand Imperial

SESSION 8: Leaching Issues

Chairman: H.A. Van der Sloot (NL)

- 8.1. *Benefits of a characterisation leaching database and associated chemical speciation modelling to facilitate proper management of hazardous waste*

Van Der Sloot H.A., Kosson D.S., Garrabrants A.G., Hjelm O., Comans R. (NL)

- 8.2. *Leaching test protocol for assessing the eco-compatibility of hardened woody biomass fly ash-cement mixtures*

Berra M., Mangialardi T., Paolini A.E., Piga L. (IT)

- 8.3. *Leaching characteristics of radioactive cesium from municipal solid waste incinerator ash, sewage sludge ash, waterworks sludge and soil*

Sakanakura H., Ishimori H., Endo K., Yamada M., Osako M. (JP)

- 8.4. *Leaching of heavy metals from construction & demolition waste*

Butera S., Christensen T.H., Astrup T. (DK)

Discussion

Wednesday, September 12th - Afternoon

19:00 – 20:30 **Room – Imperial III**

SESSION 9: Automotive Shredder
 Residues

Chairman: R. Cossu (IT)

9.1. *Italian experience on automotive shredder residues: characterization and management*

Cossu R., Fiore S., Lai T., Mancini G.,
Ruffino B., Viotti P., Zanetti M.C. (IT)

9.2. *Characterization and management of wastes from automotive shredder residues - gasification and combustion treatment*

Ruscica R., Mancini G., Luciano A.,
Viotti P., Torretta V. (IT)

9.3. *Recovery of valuable fractions from automobile shredder residues (ASRs): perspectives and cost evaluation*

Ruffino B., Fiore S., Zanetti M.C. (IT)

9.4. *Utilization of residues from shredding of scrap metals for energy production*
Nedenskov J. (DK)

Discussion

20:30 – 21:30 **Room – Imperial I**

Award of Doctorate Honoris Causa to

Dr. Asad MADNI (USA)

Thursday, September 13th - Morning

8:00 – 9:00

Registration

Chairman: B. Bilitewski (DE)

9:00 – 10:00

Keynote Speakers

Room – *Grand Imperial*



Prof. Dr. D. Barceló
IDAEA-CSIC
(Spain)

“Organic Contaminants of Emerging
Concern in Agricultural and Urban
Groundwaters. Catalonia and Barcelona
(Spain) case studies”



Prof. Dr. T. Lekkas
University of the Aegean
(Greece)

“Water use cycle in Attica, Greece:
following the quality of the water through
the cycle”

Discussion

Thursday, September 13th - Morning

10:00 – 11:30 & Room – Grand Imperial

12:00 – 14:00

Sp. SESSION II: Hazardous Medical Waste Management *(in Greek)*

Διαχείριση Επικίνδυνων
Ιατρικών Αποβλήτων
(στην Ελληνική)

Chairmen: Panagiotis Merkos,
Sofia Christophorou,
*Sp. Agency of Environmental
Inspectors (GR)*
Evangelos Voudrias,
*Democritus Univ. of Thrace
(GR)*
Evangelos Gidakos,
Technical Univ. of Crete (GR)

II.1. *An overview of the recent regulations
for healthcare waste management in
Greece*
Voudrias E. (GR)

II.2. *Hazardous healthcare waste manage-
ment: the reality through the controls
of the Special Agency of Environ-
mental Inspectors*
Despotidou M., Drouza A., Mavro-
matis S., Milioreli K., Christophorou S.
(GR)

II.3. *Hazard evaluation of medical waste
ash*
Gidakos E., Tzanakos K., Mimilidou
A. (GR)

II.4. *Diseases caused by improper medical
waste management*
Varthalitis I. (GR)

Round Table Discussion

Thursday, September 13th - Morning

10:00 – 11:30 Room – Imperial I

SESSION 10: Contaminant Release and Transport

Chairmen: M. Mäkelä (FI) &
E. Nehrenheim (SE)

10.1. *Monitoring of contaminant transport by using geoelectrical resistivity tomography*

Seferou P., Soupios P., Candasayar E., Papadopoulos N., Sarris A., Aktarakçi H. (GR)

10.2. *Statistical analysis of groundwater and soil samples with special emphasis on rare earth elements*

Pourjabbar A., Einax J.W., Büchel G. (DE)

10.3. *Mobility and bioavailability of contaminants in MSW incineration ash: assessment of acute and chronic toxic effects with aquatic and terrestrial bioassays*

Ribé V., Nehrenheim E., Odlare M. (SE)

10.4. *Extractability of non-process elements in green liquor dregs by artificial sweat and gastric fluids*

Mäkelä M., Pöykiö R., Manskinen K., Nurmesniemi H., Dahl O. (FI)

10.5. *Dust storms: on importance of tailing dump height*

Amosov P., Baklanov A. (RU)

Discussion

Thursday, September 13th - Morning

10:00 – 11:30 Room – Imperial II

SESSION 11: Waste / Material
Characterization

Chairman: M. Zanetti (IT)

11.1. *Spatial and temporal characterization of olive mill wastewater in Cyprus*

Anastasiou C., Grafias P., Lambrou T.P., Kalli A. (CY)

11.2. *Characterization of precipitates obtained from copper-rich wastewater by ferrite process*

Klapper D., Heuss-Aßbichler S., Blaess U. (DE)

11.3. *Characterization of biochar nanoparticles from hydrothermal carbonization of process residues from the Brazilian rice producing industry*

Bradl H.B., Bottlinger M. (DE)

11.4. *Fat and fuel properties and methyl esters content of biodiesel from different animal wastes*

Mata T., Martins A.A., Teixeira J.M., Melo A.C.M., Caetano N.S. (PT)

11.5. *Natural soil mixed with paper mill sludge characterization by ¹H nuclear magnetic resonance longitudinal relaxation time*

Vannini M., Bonoli A., Bortolotti V., Macini P., Mesini E. (IT)

Discussion

Thursday, September 13th - Morning

10:00 – 11:30 Room – Imperial III

SESSION 12: Mining Issues

Chairman: R. Cossu (IT)

- 12.1. *The social cost of mining: the case of gold mining in Chalkidiki*
Kontogianni A., Damigos D.,
Tourkolias Ch., Skourtos M. (GR)
- 12.2. *Environmental assessment of the abandoned sulfide mine of “Kokkinopezoula” in Cyprus*
Gavriel I., Kostarellos K., Stylianou M.
(CY)
- 12.3. *Restoration of an acid mine drainage polluted lake in northern Sweden*
Miskovsky K., Ferenerud S., Ragnvaldsson D., Lövgren L., Lundkvist A.,
Jacks G. (SE)
- 12.4. *Recycling of residues from mining leachate treatment for remediation of arsenic contaminated groundwater*
Tesser E., D’Amato E., Gori R.,
Lubello C., Sirini P., Chiavola A. (IT)
- 12.5. *Sustainable management of mine wastes- case study: the old Olympias mixed sulphides tailings*
Gazea A., Daftsis E., Papafilippou N.,
Stratis J., Alifragkis D. (GR)

Discussion

11:30 – 12:00 Coffee Break

Thursday, September 13th - Morning

12:00 – 14:00 Room – Imperial I

SESSION 13: Management Practices I

Chairmen: T. Bilstad (NO) & A. Martinuzzi (AT)

- 13.1. *Industrial solid waste hierarchy: a case study on life cycle management of copper slag*
Song X.L., Yang J.X., Lu B. (CN)
- 13.2. *Offshore drilling waste management*
Bilstad T., Stenberg E.S., Jensen B., Larsen T., Toft M. (NO)
- 13.3. *A new agro-industrial waste management model for supporting rural co-operative stewardship and sustainable development*
Li P., Chen B., Zhang B., Jing L. (CN)
- 13.4. *Management of special wastes by the Kapodistrian municipalities of the Prefecture of Thessaloniki, Greece: comments & suggestions*
Yannopoulos S., Plakas K., Dimoudi E., Oikonomou E.K. (GR)
- 13.5. *Ceramic tile waste as a waste management solution for concrete*
Tabak Y., Kara M., Günay E., Yildirim S.T., Yilmaz Ş. (TR)
- 13.6. *Distribution of acid extractable fluoride in steelmaking slag and mixture treatment aiming to reuse*
Mizutani S., Kanjo Y., Sakanakura H. (JP)

Discussion

Thursday, September 13th - Morning

12:00 – 14:00 Room – Imperial II

SESSION 14: National Case Studies

Chairmen: T.-C. Chang (ROC) & K. Lasaridi (GR)

- 14.1. *Solid waste management in Brazil*
Ranieri E., De Abreu Azevedo M. (IT)
- 14.2. *A kadleidoscope evaluation of construction waste management in the UK*
Osmani M. (UK)
- 14.3. *Acid sulphate soils in eastern Australia*
Thom M.J., Nash J.M. (AU)
- 14.4. *Design and construction of three hazard waste centers in Tunisia*
Burkhardt G., Winckel P., Ball P. (DE)
- 14.5. *Solidification / stabilization of incineration plants residues*
Saltabas F., Kiris A., Tombul B., Hatipoglu M., Baldassarre M. (TR)
- 14.6. *Application of the ChESS methodology for assessment of soil ecological status at four contaminated sites in Sweden*
Ribé V., Gren L., Nehrenheim E., Wetterholm P., Odlare M. (SE)

Discussion

Thursday, September 13th - Morning

12:00 – 14:00 **Room** – Imperial III

SESSION 15: Bio-energy Production
Perspectives

Chairman: R. Stegmann (SG)

- 15.1. *Electrical energy production from biosolids: a comparative study between anaerobic digestion and gasification*
Gikas P., Noll S.A. (GR)
- 15.2. *Estimate of the potential generation of biomass, methane and energy by major livestock in Brazil*
Peresin D., Trentin A.C., Bortolin T.A., Schneider V.E. (BR)
- 15.3. *Effect of organic loading rate on the anaerobic co-digestion of agroindustrial wastes in a two-stage system*
Dareioti M., Vavouraki A.I., Kornaros M. (GR)
- 15.4. *Bioethanol production from different agroindustrial wastes*
Caetano N.S., Martins A.A., Silva V.F.M., Moura R.F., Mata T. (PT)
- 15.5. *Recover of different waste vegetable oils for biodiesel production: a pilot experience in Bahia State, Brazil*
Torres E.A., Ferrer T.M., Cerqueira G.S., Quintella C.M., Torretta V., Urbini G. (BR)

Discussion

14:00 – 15:30 Lunch Break

Thursday, September 13th – Afternoon

15:30 – 16:00 Poster Session

Chairman: W. Calmano (DE)

16:00 – 16:30 Keynote Speaker
Room – *Grand Imperial*



Prof. Dr. K. E. Lorber
Montan University Leoben
(Austria)

“Innovative Remediation Method for Cr(VI)-
Contaminated Sites: Application of Fluidized
Granulated Iron for Chromate Reduction in
Effluents”

Discussion

Thursday, September 13th – Afternoon

16:30 – 18:30 Room – Grand Imperial

WORKSHOP III: WEEE Recovery and Recycling

Chairman:



Dr. Alexander Janz
Federal Ministry for the
Environment, Nature
Conservation & Nuclear
Safety (Germany)

EU legislation restricting the use of hazardous substances in electrical and electronic equipment (RoHS - Directive 2002/95/EC) and promoting the collection and recycling of such equipment (WEEE - Directive 2002/96/EC) - in force since February 2003 – has been revised in 2011 and 2012. Initially Member States are asked for the implementation of the new EU-legislation until the end of 2013.

- WIII.1. *The new WEEE and ROHS Directives – challenges for designing electrical and electronic products and handling e-waste*
Janz A., Rummler T. (DE)
- WIII.2. *WEEE flows in Germany and the perspective of product responsibility for efficient use of resources*
Sander K. (DE)
- WII.3. *Case study on WEEE recycling in Austria*
Schwarz T., Lorber K.E., Pomberger R., Arnberger A., Lukas S., Curtis A., Grinschgl A. (AT)
- WIII.4. *The implementation of extended producer responsibility in Greece: the case study of waste electrical and electronic equipment*
Ioannou T., Kritikou T., Abeliotis K. Lasaridi K. (GR)
- WIII.5. *Removing the hazards from your products - lessons learned from HP*
Hieronymi K., McIntyre K., Seager D. (NL)
- WIII.6. *Enhancement of a CDM-methodology for end-of-life refrigerators*
Rettenberger G. (DE)

Round Table Discussion

Thursday, September 13th – Afternoon

16:30 – 18:30 Room – Imperial I

SESSION 16: Medical Waste
Management and
Treatment

Chairman: E. Voudrias (GR)

- 16.1. *Composition and production rate of pharmaceutical waste from Xanthi General Hospital in Greece*
Voudrias E., Kermenidou M., Goudakou L., Softa A., Iatridis A. (GR)
- 16.2. *Evaluation of health-care waste management and segregation efficiency in a teaching hospital*
Schneider V.E., Stedile N.L.R., Paiz J.C., Giacomassa S.D. Manfredini K.L. (BR)
- 16.3. *Towards sustainable waste management: an observational study of health care practice*
Manzi S., Nichols A., Pahl S., Grose J., Bennallick M., Richardson J. (UK)
- 16.4. *Treatment of infectious waste water from medical, pharmaceutical and chemical establishments*
Sarc R., Lorber K.E., Gesslbauer S., Katschnig H.F., Staber G. (AT)
- 16.5. *Synthesis of geopolymers using fly ash from incinerated hospital waste*
Mimilidou A., Tzanakos K., Anastasiadou K., Stratakis A., Gidaracos E. (GR)

Discussion

Thursday, September 13th – Afternoon

16:30 – 18:30 Room – Imperial II

SESSION 17: Groundwaters

Chairman: M. Aivalioti (GR)

- 17.1. *Design of in-situ permeable sorption barriers for removal of BTEX from contaminated groundwater*
Banti D., Voudrias E. (GR)
- 17.2. *An innovative technique for remediation of groundwaters: discontinuous permeable reactive barriers*
Bortone I., Di Nardo A., Di Natale M., Musmarra D., Santonastaso G.F. (IT)
- 17.3. *Are accelerated column tests used in permeable reactive barriers design sufficiently reliable?*
Bilardi S., Calabrò P.S., Moraci N. (IT)
- 17.4. *Laboratory study on the remediation of BTEX contaminated groundwater using compost and Greek natural zeolite*
Simantiraki F., Aivalioti M., Gidakos E. (GR)
- 17.5. *Hexavalent chromium reduction with polyphenol-coated nano zero valent iron*
Mystrioti C., Sparis D., Papassiopi N., Xenidis A., Dermatas D., Chrysochoou M. (GR)
- 17.6. *Occurrence and remediation of PCE and other chlorinated solvents in Sydney urban groundwater systems*
Nash J.M., Rockett L., Plambeck K. (AU)

Discussion

Thursday, September 13th – Afternoon

16:30 – 18:30 Room – Imperial III

SESSION 18: Non Wasted Waste

Chairmen: W. Calmano (DE) & K.E. Lorber (AT)

- 18.1. *Use of desalination concentrate as a magnesium source for struvite precipitation from wastewater*
Zewuhn A., Gerth J., Lahav O., Calmano W. (DE)
- 18.2. *Use of weathered and fresh bottom ash mix layers as a subbase in road constructions: environmental behavior enhancement by means of a retaining barrier*
Der Valle-Zermeño R., Chimenos J.M., Giró-Paloma J., Formosa J. (SP)
- 18.3. *Mine water treatment solutions for discharge and reuse*
Doll B. (DE)
- 18.4. *Production of synthetic zeolite from treated asbestos waste*
Anastasiadou K., Kalderis D., Gidakos E. (GR)
- 18.5. *Use of olive pomace biochar for the immobilization of metals in soil*
Pellera F.-M., Gidakos E. (GR)
- 18.6. *From waste to concrete: an experience of reuse of MSWI slags as recycled aggregate in concrete kerbs and flat tiles*
Sorlini S., Collivignarelli C., Abbá A. (IT)

Discussion

18:30 – 19:00 Coffee Break

19:00 – 20:30 Room – Grand Imperial

WORKSHOP IV: Waste Management and Resource Efficiency Policies

Chairman: Mr. Gunther Wolff
European Commission



More than 68 billion tonnes of raw materials were used worldwide in 2009. This is around one third more than in 2000, and about twice as much as at the end of the 1970s. This trend is set to continue. The global population is expected to increase to more than 9 billion people by the year 2050. The economies of newly industrializing countries are growing rapidly. At the same time, intensive resource use has impacts on the environment, ranging from the release of greenhouse gases and pollutants into the air, water and soil to damage to ecosystems and biodiversity. There is a need for a strategy towards sustainable growth and a resource-efficient economy.

- WIV.1. *Waste management and resource efficiency policies in the EU*
Wolff G. (BE)
- WIV.2. *EU flagship initiative for sustainable growth and German resource efficiency programme*
Rummler T., Janz A. (DE)
- WIV.3. *DYNAMIX – a new European project on policy mixes for decoupling resource use from economic growth*
Gruenig M., Hirschnitz-Garbers M., Martinuzzi A., Montevecchi F., Sedlacko M. (AT)
- WIV.4. *The Riskcycle Project: R+D contribution for innovations in the field of risk-based management of chemicals and pro-ducts*
Bilitewski B. (DE)

Round Table Discussion

Thursday, September 13th – Afternoon

19:00 – 20:30 Room – Imperial I

SESSION 19: Medical Waste Production and Characterization

Chairmen: D. Komilis (GR) & S. Mahnik (AT)

- 19.1. *Hazardous medical waste generation rates of different categories of health-care facilities in Greece*
Komilis D., Fouki A., Arampatzi D., Papadopoulos D. (GR)
- 19.2. *The examination of a benchmark project - comparison of waste amounts of different Austrian hospitals*
Mahnik S., Horinek G. (AT)
- 19.3. *A separation of infectious from uninfected healthcare waste – selected examples for a separation at the Jena university hospital*
Hoffmann M. (DE)
- 19.4. *Evaluation of different leaching methods for the characterization of bottom ash from incinerated hospital waste*
Timotheatou E., Anastasiadou K., Gidaracos E. (GR)
- 19.5. *Solidification/stabilization of ash from medical waste incineration into geopolymers*
Tzanakos K., Mimilidou A., Anastasiadou K., Stratakis A., Gidaracos E. (GR)

Discussion

Thursday, September 13th – Afternoon

19:00 – 20:30 Room – Imperial II

SESSION 20: Waste – Contaminant –
Hazard Monitoring

Chairman: N. Moussiopoulos (GR)

- 20.1. *Emissions and impact on air quality from the use of alternative fuels by a cement factory in Thessaloniki*
Moussiopoulos N., Baniyas G., Douros I., Michailidou A.V., Tsegas G. (GR)
- 20.2. *Fabrication of a laccase biosensor embedded on a fluidic microreactor for hazardous waste monitoring*
González J.C., Unigarro E.A., Sierra R., Osma J.F. (CO)
- 20.3. *A chemical sensor utilizing near infrared spectroscopy: developing a spectra database*
Klavarioti M., Kostarelos K., Ghandehari M. (USA)
- 20.4. *Determination of oxidation kinetics at low temperatures in a differential reactor as basis for the evaluation of the self heating potential of garage waste*
Kern H., Held K., Spijker C., Raupenstrauch H. (AT)
- 20.5. *Explosion prevention in waste treatment facilities - studies on the explosive behaviour of dusts occurring in waste treatment facilities*
Held K., Kern H., Raupenstrauch H. (AT)

Discussion

Thursday, September 13th – Afternoon

19:00 – 20:30 Room – Imperial III

SESSION 21: Thermal Treatment

Chairman: H. Raupenstrauch (AT)

- 21.1. *Chances and limitations of pyrolysis*
Bilitewski B. (DE)
- 21.2. *Evaluation of the CO₂ storage capacity of different types of steel slag subjected to accelerated carbonation*
Baclocchi R., Costa G., Di Gianfilippo M., Polettini A., Pomi R., Stamazzo A. (IT)
- 21.3. *Investigation on accelerated carbonation of MSW incineration bottom ash for application of biogas purification*
Lin W.Y., Wang J.-Y. (SG)
- 21.4. *Spontaneous ignition of waste material*
Raupenstrauch H. (AT)
- 21.5. *Microwave pyrolysis as a method to glass fibre recovery from used blades of wind turbines*
Foltynowicz Z., Åkesson D., Christeen J., Skrifvars M. (PL)

Discussion

Friday, September 14th – Morning

8:00 – 9:00

Registration

9:00 – 10:00

Keynote Speakers

Room – Grand Imperial

Chairman: H.A. Van der Sloot (NL)



Prof. Dr. R. Cossu
University of Padua
(Italy)

**“Urban Mining and Sustainable Landfilling in
Solid Waste Management”**



Prof. Dr. G. Rettenberger
Trier University of Applied
Sciences
(Germany)

**“Gaseous Emissions from Hazardous Waste
Landfills – Occurrence, Investigations,
Methods, Results, Impact, Prevention”**

Discussion

Friday, September 14th – Morning

10:00 – 11:30 & Room – Imperial I

12:00 – 14:00

Sp. SESSION III: Mineral and Metallurgical
Waste Management in
Greece (*in Greek*)
Διαχείριση Μεταλλευτικών
και Μεταλλουργικών
Αποβλήτων στην Ελλάδα

Chairmen: Margarita Karavasili,
*Ministry for the Environment
and Climate Change (GR)*
Panagiotis Merkos,
*Spec. Agency of Environmental
Inspectors (GR)*
Sonia Eleftheriadou,
*Spec. Agency of Environmental
Inspectors (GR)*

- III.1. *Mining and metallurgical waste management in Greece*
Eleftheriadou S. (GR)
- III.2. *Evaluation of the soil, water and plant Cr(VI) and other metal contamination at the Assopos-Thiva basin and C. Evia: sources and solutions*
Economou-Eliopoulos M., Megremi I., Atsarou C., Theodoratou Ch., Vasilatos Ch. (GR)
- III.3. *Reclamation of old tailing disposal area of Olympias Halkidiki mine*
Alifragkis D., Voulgaridou E., Daftsis E., Characlias I. (GR)
- III.4. *The metallurgical plant of LARCO*
Tomazinaki C. (GR)

Round Table Discussion

Friday, September 14th – Morning

10:00 – 11:30 Room – Grand Imperial

SESSION 22: Landfilling

Chairman: L. Alibardi (IT)

- 22.1. *A procedure minimizing the wasting of space for the siting of hazardous waste landfills as part of a solid waste management system*
De Feo G., De Gisi S. (IT)
- 22.2. *Building an integrated toolbox for the environmental health impact assessment of landfill mining operations*
Smolders R., Spooren J., Quaghebeur M., Weltens R., Berghmans P. (BE)
- 22.3. *Evolution of landfill gas mitigation and protection measures in Australia*
Nash J.M., Thom M., Holden D.I. (AU)
- 22.4. *Aerobic stabilization and thermo-compaction of tannery sludge for a sustainable landfill disposal*
Alibardi L., Cossu R. (IT)
- 22.5. *On treatment of hazardous organic substances from leachate in a cold humid climate*
Hagenlund G., Lorentzen S. (NO)

Discussion

Friday, September 14th – Morning

10:00 – 11:30 Room – Imperial II

SESSION 23: Bio-processes

Chairmen: T.-I. Ohm (KR) & A. Xenidis (GR)

- 23.1. *Biowastes to remediate contaminated sites and industrial effluents*
Montoneri E., Tomasso L., Tabasso S., Ginepro M. (IT)
- 23.2. *Anaerobic digestion of cheese whey wastewater through a two stage system*
Stamatelatou K., Giantsiou N., Diamantis V., Alexandridis C., Alexandridis A., Aivasidis A. (GR)
- 23.3. *Comparison of the performances of the biosorbents produced from forestry waste and activated carbons on the chromium removal from electroplating effluent*
Santos F. A., Lima P. H. E., Idrees M., Nome F., Fielder H.D., Pires M. (BR)
- 23.4. *Treatment of wastewaters generated in a surfactant enhanced washing of soils in an aerobic biofilter inoculated with a consortium of hydrocarbon degraders*
Zacarías-Salinas M., García E.I., Torres L.G. (MX)
- 23.5. *Co-composting of egg shell, cow dung and sawdust using passive aeration bin*
Karnchanawong S., Tadkeaw N. (TH)

Discussion

Friday, September 14th – Morning

10:00 – 11:30 Room – Imperial III

SESSION 24: Management Practices II

Chairmen: T. Curran (UK) & H. Friege (DE)

24.1. *Dangerous substances and valuable resources – two sides of one coin*
Friege H. (DE)

24.2. *Improving environmental sustainability in developing and emerging countries by upgrading solid waste management techniques*
Collivignarelli C., Vaccari M., Stella S., Torretta V. (IT)

24.3. *Waste minimization and prevention activities in insular communities - the case studies of Paralimni municipality in Cyprus*
Zorpas A.A., Lasaridi K., Voukkali I., Chroni C., Loizia P., Fitiri L. (CY)

24.4. *Developing a closed loop industrial network for sustainable construction*
Curran T., Williams I.D., Kent A., Lambourne M. (UK)

24.5. *Optimization of waste management system and facility location to reduce transportation cost and environmental impact*
Nicosia F.G., Inturri, Luciano A., Viotti P., Mancini G. (IT)

Discussion

.....
11:30 – 12:00 Coffee Break
.....

Friday, September 14th – Morning

12:00 – 14:00 Room – Imperial II

SESSION 25: Sludge Management and Treatment

Chairmen: E. Diamadopoulos (GR) & A. Giannis (SG)

- 25.1. *Sewage sludge as a precursor for bio-char production*
Agrafioti E., Bouras G., Kalderis D., Diamadopoulos E. (GR)
- 25.2. *Electrokinetic dewatering of sewage sludge in vertical electric field: effect of potential gradient*
Giannis A., Lim R.K., Wang J.-Y. (SG)
- 25.3. *The use of neutralisation sludge in the process of reclamation and in the building industry*
Urbánek B., Vodickova E. (CZ)
- 25.4. *Preliminary performance assessment of asphalt concrete with paint sludge from automotive industries*
Ruffino B., Dalmazzo D., Riviera P.P., Santagata E., Zanetti M.C. (IT)
- 25.5. *Toxicity assessment of solidified/stabilized chemical sludge from textile wastewater treatment plants*
Patel H., Pandey S. (IN)
- 25.6. *Dehydrated sewage sludge hygienization by a combined method of thermophilic aerobic stabilization & vermicomposting*
Oikonomou E.K., Guitonas A., Efthimiadis T. (GR)

Discussion

Friday, September 14th – Morning

12:00 – 14:00 **Room** – Imperial III

SESSION 26: Case Studies of
Contaminated Sites

Chairmen: P. Kassomenos (GR)
S. Pensaert (BE)

- 26.1. *Remediation of a former chlor-alkali site in The Netherlands*
Pensaert S., Gerbrandts B. (BE)
- 26.2. *Case study - hydrogeological assessment and remediation solution for hazardous waste site*
Carty G., Madden W., Garvey K., Cronin D., Herlihy S. (IE)
- 26.3. *Remediation of the Stugsundsudden site in Söderhamn Sweden*
Pensaert S., Nollet H. (BE)
- 26.4. *Preliminary orientation environmental liability assessment study – results of a full scale industrial installation in the Asopos river basin area*
Panagopoulos I., Karayannis A., Hadjidakis D., Karkantzios I., Velissariou A., Zarides C., Gouvalias G., Kassomenos P. (GR)
- 26.5. *The Avenue Coking works remediation*
Pensaert S., De Becker G. (BE)

Discussion

Friday, September 14th – Morning

12:00 – 14:00 Room – Grand Imperial

SESSION 27: Wastewater Treatment

Chairmen: N. Kabay (TR) & T. Lekkas (GR)

- 27.1. *Zn²⁺ removal from wastewater using rice husk as adsorbent*
Galletti C., Russo N., Fino D. (IT)
- 27.2. *Treatment of industrial wastewater using the electrocoagulation – electroflotation technology*
Koutsaftis D., Polychronopoulou E., Chalarakis L. (GR)
- 27.3. *A comparative study for removal of phenol and bisphenol A from water by polymer adsorbents - studies of adsorption equilibrium and kinetics*
Ipek I., Çağlar Ç., Gunay S., Yaşar Ç., Kabay N., Yuksel M. (TR)
- 27.4. *Development of technology for liquid hazardous wastes treatment*
Chusov A.N., Molodkina L.M., Andriano-va M.J., Kolosova D.D., Fedorov M.P. (RU)
- 27.5. *Hexavalent chromium removal in anaerobic process from industrial wastes*
García-González V., Bernal-Martínez A., Cuevas-Rodríguez G. (MX)
- 27.6. *Dynamic adsorption of TNT-contaminated industrial waste water on pine bark*
Chusova O., Nehrenheim E., Odlare M. (SE)

Discussion

14:00 – 16:00 Lunch Break

Friday, September 14th – Afternoon

16:00 – 16:30 Poster Session

16:30 – 17:00 Keynote Speaker
Room – Grand Imperial

Chairman: D. Barceló (SP)



Prof. Dr. B. Bilitewski
Technical University of Dresden
(Germany)

“Hazardous Additives in Products – a Risk or
a Perceived Risk?”

Discussion

Friday, September 14th – Afternoon

17:00 – 18:30 Room –Grand Imperial

SESSION 28: Chemical Processes

Chairmen: F. Kastanek (CZ) &
D. Mantzavinos (GR)

- 28.1. *Hydrogen peroxide promoted catalytic wet air oxidation of methylene blue over $Fe_2O_3/\gamma-Al_2O_3$ catalyst*
Ersöz G., Atalay S. (TR)
- 28.2. *Photocatalytic degradation of bisphenol A (BPA) by immobilized ZnO or TiO_2 on glass plates*
Zacharakis A., Chatzisyneon E., Frontistis Z., Mantzavinos D. (GR)
- 28.3. *Removal of faecal indicator pathogens from waters and wastewaters by photo-electrocatalytic oxidation on TiO_2/Ti -films under simulated solar radiation*
Sofianos S.S., Politi E., Chatzisyneon E., Xekoukoulotakis N.P., Katsaounis A., Mantzavinos D., Venieri D. (GR)
- 28.4. *Performance of different perovskites for the catalytic wet air oxidation of industrial wastewaters*
Bernardi M., Dogliotti M.B., Barletta L., Deorsola F.A., Russo N., Fino D.(IT)
- 28.5. *Extraction of polychlorinated biphenyls from oils using polar aprotic solvents*
Kastanek P., Kastanek F., Maleterova Y., Solcova O., Sobek J., Hajek M. (CZ)

Discussion

Friday, September 14th – Afternoon

17:00 – 18:30 Room – Imperial I

SESSION 29: Characterization and
Treatment of Contaminated
Sediments

Chairmen: A Polettini (IT) & R. Pomi (IT)

29.1. *Assessment of heavy metal and PAH contamination in Greek surficial sediments by using SQGs and pollution indicators*

Hahladakis J., Vasilaki G.,
Smaragdaki E., Gidakos E. (GR)

29.2. *Analytical characterization and separation treatment of dredged sediments from small Italian harbours*

Dastoli S., De Gioannis G., Morelli M., Muntoni A., Peretti R., Polettini A., Pomi R., Romano E., Serici A., Stramazzo A., Villani B., Zucca A. (IT)

29.3. *Speciation of heavy metals in sediment samples collected from lake Koumoundourou and Elefsis bay*

Hahladakis J., Vasilaki G.,
Smaragdaki E., Gidakos E. (GR)

29.4. *Opportunistic beach nourishment in Greece - a possible source of heavy metals in eroding beaches*

Foteinis S., Kallithrakas-Kontos N.G.,
Synolakis C. (GR)

29.5. *Controlling pollution risk of an important drinking water reservoir in a strong human altered and climatic induced semi-arid environment*

Tzoraki O., Dörflinger G., Dimitriou C., Polykarpou P. (GR)

Discussion

Friday, September 14th – Afternoon

17:00 – 18:30 Room – Imperial II

SESSION 30: Fly Ash

Chairmen: K. Kuraš (CZ)

30.1. *Characterization of hydrated lime-fly ash mortars*

Maravelaki P., Lionakis E., Kostakis G., (GR)

30.2. *Integrated soft synthesis of zeolites using wastes as raw materials*

Cardoso A.M., Thomaz E., Horn M.B., Azevedo C.M.N., Pires A.M., Senandes L.F. (BR)

30.3. *Reuse of COSMOS filler, obtained by municipal solid waste incineration fly ash inertisation, in plastic materials*

Bosio A., Ardesi R., Zacco A., Brisotto M., Gianoncelli A., Gelfi M., Depero L.E., Bontempi E. (IT)

30.4. *Deposition of fly ash to unprotected ground in the Czech Republic*

Kubal M., Taufer O., Bucharová J., Kuraš M. (CZ)

30.5. *Enhancement of surface properties of waste oil fly ash by chemical treatment*

Shawabkeh R., Khan M.J., Al-Juhani A.A., Al-Abdul Wahhab H.I., Hussein I.A. (SA)

Discussion

Friday, September 14th – Afternoon

17:00 – 18:30 Room – Imperial III

SESSION 31: Energy from Waste

Chairmen: C. Dornack (DE)

31.1. *Integrated solid waste management with utilization of RDF*

Kara M., Tabak Y., Günay E., Yildiz Ş., Enç V., Durgut U. (TR)

31.2. *Energy recovery from sludges: selection of case studies in Sub-Saharan Africa*

Torretta V., Caruson P., Conti F., Leonardi M., Ruggieri G. (IT)

31.3. *Nitrogen and sulphur in biogas systems*

Dornack C. (DE)

31.4. *Thermal recycling of plastic waste and biomass in a pyrolysis-gasification system*

Forbid G.T., Busch G., Dornack C., Ghogomu J.N. (DE)

31.5. *Characterization of pyrolysis oil from municipal solid waste*

Liu Y., Wang J., Dong Z., Tay J.-H. (SG)

Discussion

18:30 – 19:00 Coffee Break

Friday, September 14th – Afternoon

19:00 – 20:30 **Closing Session**
Room – Grand Imperial

Chairman: G. Rettenberger (DE)



Prof. Dr. R. Stegmann
*Nanyang Technological
University
(Singapore)*

“Developments in Waste Management”

ROUND TABLE DISCUSSION: The Future of Waste Management in Europe

B. Bilitewski (DE) – R. Cossu (IT) –
A. Martinuzzi (AT) – T. Wolff (BE) –
R. Stegmann (SG)

Poster Awards

Evaluating Committee:

W. Calmano (DE)
E. Diamadopoulos (GR)
K.E. Lorber (AT)

Closing

.....
21:30 – **Gala Dinner**
.....

Saturday, September 15th

10:00 – 17:00

Excursion to the magnificent Falasarna Beach (West Crete) – Lunch Included.

Posters

Posters

From Wednesday 12th to Friday 14th September 2012 (*poster exhibition will be open all day long during the Conference*)

- P1.** *Waste lubricant oil management in Portugal: the experience of an extended producer responsibility approach*
Pires A., Martinho G. (PT)
- P2.** *Characterization of biochar produced from spent coffee waste*
Pappa P., Pelleri F.-M., Gidakos E. (GR)
- P3.** *Steel slag characterization as aggregate in concrete*
Sorlini S., Rondi L., Collivignarelli C., Abbá A. (IT)
- P4.** *BTEX, MTBE and TAME removal from aqueous solutions using natural adsorbents: column experiments*
Aivalioti M., Gidakos E. (GR)
- P5.** *Modelling of the porous material dehydration process*
Amosov P. (RU)
- P6.** *Sustainable healthcare waste management: ethical, legal and practical challenges*
Nichols A., Bennallick M., Manzi S., Grose J., Pahl S., Richardson J. (UK)

Posters

- P7.** *Mineralogical and chemical evolution of hydrated phases in the pozzolanic reactions of ternary system: activated clay waste / fly ash / $\text{Ca}(\text{OH})_2$*
De Soto I.S., Ramirez M., Vigil De La Villa R., Garcia R., Goñi S., Frias M. (SP)
- P8.** *New tanning technologies based on valorization of industrial wastes*
Crudu M., Deselnicu V., Ioannidis I., Albu L. (RO)
- P9.** *Approaches to reducing heavy metal discharges in tannery effluent*
Deselnicu V., Crudu M., Ioannidis I., Deselnicu DC. (RO)
- P10.** *Effects of feed strategy, temperature and microaeration of a SBBR applied to sulphate wastewater treatment*
Cestari A.I., Canto C.S.A., Ratusznei S.M., Rodrigues J.A.D., Zaiat M., Foresti E. (BR)
- P11.** *Vacuum thermal treatment of PCB contaminated pole transformers using voltage adjuster*
Ohm T.I., An H.S., Park S.S., Kim K.H., Chae J.S., Moon S.H. (KR)
- P12.** *Evaluation of asbestos derived zeolite as an adsorbent for Pb(II) and Cd(II) removal from aqueous solutions*
Kapenis V., Pellerá F.-M., Anastasiadou K., Pentari D., Gidarakos E. (GR)

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- P13.** *Extractive removal of vanadium and molybdenum from spent hydride-sulfurization catalyst*
Rojas-Rodríguez A.D., López-Castillo N.N., Cruz-Gómez M.J. (MX)
- P14.** *Low-cost removal of heavy metals from wastewaters with commercial coffee residues*
Kyzas G.Z., Mitropoulos A.Ch. (GR)
- P15.** *Determination of mercury(I) and mercury(II) in binary aqueous mixtures using titrimetric analysis*
Elijošiutė E., Griškonis E., Jankūnaitė D., Denafas G. (LT)
- P16.** *Development of magnetic nanoparticles for Cr(VI) removal from drinking water integrated by a magnetic separation system*
Simeonidis K., Tziomaki M., Samaras T., Angelakeris M., Mitrakas M., Monty C., Martinez-Bouveta C., Balcells L., Andritsos N. (GR)
- P17.** *Treatment and recovery of mercury from discharged artificial light sources by thermal desorption technology*
Chang T.C., Fan K.S., Chen C.M., You S.J. (ROC)

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- P18.** *Optimization of chemical leaching process for the removal of arsenic, chromium and copper from CCA-treated eucalyptus wood wastes*
Ferrarini S. F., Dos Santos H.S., Miranda L. G., Azevedo C.M.N., Pires M., Maia S.M. (BR)
- P19.** *Detoxification of water containing phenol by catalytic oxidation with air and hydrogen peroxide over Cu/13X catalyst*
Wittine O., Vasić-Rački Đ., Zrnčević S. (CR)
- P20.** *Effect of sodium acetate as pH amendment on the co-composting of food and horticultural waste*
Giannis A., Chen M., Stegmann R., Wang J.-Y. (SG)
- P21.** *Health risks by contamination of soil by toxic agents*
Matějů L., Zimová M., Melicherčík J., Cidlinová A., Němcová V. (CZ)
- P22.** *Minimizing the risks of heavy metals from the platinum group biological waste from hospitals*
Zimova M., Wittingerova Z., Cidlinova A., Mateju L., Petruzalkova A., Wranova K., Šulcová H. (CZ)
- P23.** *Olive mill waste application on soil: effect on soil microbial activity and its relation to soil chemical properties*
Kavvadias V., Papadopoulou M., Doula M.K., Theocharopoulos S. (GR)

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- P24.** *Disposal of olive oil mills wastes in evaporation ponds: a serious threat for soil quality*
Doula M.K., Theocharopoulos S., Kavvadias V., Lolos P. (GR)
- P25.** *Fate of endocrine disrupting compounds (EDCs) and non-steroidal anti-inflammatory drugs (NSAIDs) during anaerobic digestion of sewage sludge*
Samaras V.G., Bertoli K.A., Spirou N.P., Stasinakis A.S., Thomaidis N.S., Lekkas T.D. (GR)
- P26.** *Comparison of mesophilic and thermophilic sludge anaerobic digestion: role of sludge retention time, reactor's configuration and sonolysis pre-treatment on process performance*
Samaras V.G., Mathiopoulou A.I., Sirigou I.E., Stasinakis A.S., Lekkas T.D. (GR)
- P27.** *Pseudo-total and extractable non-process elements in green liquor dregs*
Mäkelä M., Pöykiö R., Manskinen K., Nurmesniemi H., Dahl O., Watkins G., Husgafvel R. (FI)
- P28.** *Arsenic retention modelling in constructed wetlands treating groundwater*
Llorens E., Obradors J., Poch M. (SP)

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- P29.** *Complex dielectric permittivity and electrical conductivity measurements as a diagnostic tool for the detection of heavy metals adsorbed in bentonite samples*
Saltas V., Lydakis-Simantiris N., Soupios P., Vallianatos F. (GR)
- P30.** *Time evolution of a landfill leachate affected aquifer in Elaionas area, Athens*
Kypritidou Z., Argyrazi A. (GR)
- P31.** *Impact of bioreactor landfill aeration on in situ removal of ammoniacal nitrogen*
Pivnenko K., Gidarakos E. (GR)
- P32.** *Effect of short-term aging on copper redistribution in soils amended with compost*
Gusiatin Z.M., Kulikowska D., Bulkowska K., Pokoj T., Klimiuk E., Woronecka J. (PL)
- P33.** *Implementation of bioremediation technology to olive oil mill wastes disposal area*
Moreno J.L., Doula M.K., Sánchez-Moreno M.A., García C., Kavvadias V., Theocharopoulos S. (SP)
- P34.** *Proposed tool for soil monitoring for olive oil mills wastes disposal areas*
Chliaoutakis A., Kydonakis A., Doula M.K., Kavvadias V., Sarris A., Theocharopoulos S. (GR)

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- P35.** *Proposal of a methodology for assessment of soil ecological status at contaminated sites: a comparative analysis of key-indicating parameters for soil function*
Ribé V., Gren L., Nehrenheim E., Odlare M. (SE)
- P36.** *Study of the bioaccessibility, mobility and distribution of lead and cadmium in soil amended with drinking-water treatment residuals*
Rosa L.R., Nakadi F.V., Da Veiga M.A.M.S. (BR)
- P37.** *Potential problems of biogas production in Poland at rural plants*
Foltynowicz Z., Papajewska M. (PL)
- P38.** *The effect of molasses and glycerine phase on biogas production from energy crops silages*
Pokój T., Bulkowska K., Gusiatin Z.M., Klimiuk E., Dubis B., Karolewski S. (PL)
- P39.** *Slow pyrolysis of banana culture waste: leaves and pseudostem*
Fernandes E.R.K., Marangoni C., Medeiros S.H.W., Souza O., Sellin N. (BR)
- P40.** *Evaluation of MBR performance treating wastewater at the industrial park of Heraklion*
Babatsouli P., Palogos I., Venieri D., Kalogerakis N. (GR)

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- P41.** *Investigating the recycling of agricultural biomass waste in construction materials*
Techniti S., Anastasiadou K., Vamvuka D., Gidaracos E. (GR)
- P42.** *Biogas production and digestate composition of Sida Hermaphrodita and mixture of Medicago Sativa with Phleum Pratense anaerobic digestion*
Bulkowska K., Pokój T., Gusiatin Z.M., Klimiuk E., Dubis B., Ostaszewska E. (PL)
- P43.** *The influence of crop silage type as a main substrate on biogas production*
Bulkowska K., Pokój T., Gusiatin Z.M., Klimiuk E., Chaberek A. (PL)
- P44.** *Characterization methodology for small waste electrical and electronic equipment in Portugal*
Martinho G., Pires A., Saraiva L., Ribeiro R. (PT)
- P45.** *Bioethanol production from lingo-cellulosic residues: effect of feed concentration on the recuperation phase by pervaporation*
Bello R.H., Souza O., Sellin N., Medeiros S.H.W., Marangoni C. (BR)
- P46.** *Pig manure treatment by filtration*
Kowalski Z., Makara A. (PL)

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- P47.** *Fate of nitrogen compounds in an innovative single up-flow aerobic/anoxic bioreactor for treatment of a real industrial estate wastewater*
Asadi A., Ziantizadeh A.A.L., Rezaei N. (IR)
- P48.** *Rejection of endocrine disruptors from water and treated wastewater by reverse osmosis*
Vakondios N., Diamadopoulos E. (GR)
- P49.** *Development of a 3-dimensional pilot-scale physical model for demonstration of enhanced in-situ bioremediation in New-foundland and Labrador, Canada*
Zhu Z.W., Zhang B.Y., Chen B., Jing L., Lin W.Y. (CA)
- P50.** *Application of in well air sparging techno-logy for the removal of petroleum conta-minants (BTEx)*
Gatsios E., Kousaiti A., Gidarakos E. (GR)
- P51.** *Optimization of the domestic used cooking oil to biodiesel chain - the European project RecOil*
Tsoutsos T., Paraíba O., Tournaki S., Marques A., Manning E., Antunes D. (GR)
- P52.** *Winery liquid waste characteristics from insular communities and proposed treat-ment method*
Zorpas A.A., Lasaridi K., Voukkali I., Loizia P. (CY)

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- P53.** *Adsorption of ammonium ions (NH_4^+) onto bioadsorbent: case of cotton waste*
Pliassas E., Pivnenko K., Gidarakos E. (GR)
- P54.** *Analysis and evaluation of healthcare waste management practices in Gaza Strip*
Caniato C., Vaccari M., Collivignarelli C., Abbá A. (IT)
- P55.** *Application of accelerated carbonation treatment on alkaline residues*
Cappai G., De Gioannis G., De Giudici G., Muntoni A., Piredda M. (IT)
- P56.** *Removal of some endocrine disrupting compounds (dimethyl phthalate and diethyl phthalate) from water by polymer adsorbents*
Solak S., Arda M., Yüksel M., Uygun G., Ozlem M., Kabay N., Yüksel M. (TR)
- P57.** *Photodegradation of methylparaben in various environmental aqueous solutions by 254 nm irradiation*
Tsourounaki K., Aroniada G., Psillakis E. (GR)
- P58.** *Electroplating waste inertization in vitreous matrices from São Paulo city*
Mattos C.S., Mello-Castanho S.R.H. (BR)
- P59.** *Medical electronic waste: optional way to add value*
Pidone L.A., Silva A.C., Mello-Castanho S.R.H. (BR)

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- P60.** *Mesophilic anaerobic CO-digestion of olive pomace leachate and municipal sewage in a pilot scale upflow sludge blanket reactor (UASBR)*
Katsoni A., Mantzavinos D., Diamadopoulos E. (GR)
- P61.** *Pyrolysis characteristics and kinetics of municipal solid wastes in Singapore*
Wang J., Liu Y, Yan R., Dong Z., Tay J.-H. (SG)
- P62.** *A methodology to assess poultry dejection deodorizing*
Dall'Ara A., Paterlini V., Raspi C., Billi L., Sangiorgi S. (IT)
- P63.** *Use of organic-mineral substance based on brown coal on heavy metal immobilization in copper mine soils*
Pusz A. (PL)
- P64.** *Oli-PHA A novel and efficient method for the production of polyhydroxyalkanoate polymer-based packaging from olive oil waste water*
Cinelli P., Lazzeri A., Anguillesi I., Bugnicourt E. (IT)

CONFERENCE STRUCTURE

Tuesday 11/9/2012 evening	Welcome Gathering at the Old Venetian Port of Chania – Access to the Maritime Museum of Chania			
Wednesday 12/9/2012 morning	Opening Ceremony Keynote Speaker 1 - Keynote Speaker 2			
	Session 1: Industrial and hazardous waste legislation	Session 2: Metallurgy and scrap metals	Session 3: Modeling	Special Session I: Sea & Waste; the case of shipwrecks
Wednesday 12/9/2012 afternoon	Poster Session Keynote Speaker 3			
	Session 4: Asbestos	Session 5: Recovery opportunities	Session 6: Heavy metal contamination	WORKSHOP I: Diffusion of Waste-Related Cleaner Technologies: How R&D Contributes to Sustainable Solutions
	Session 7: Hazardous substances in the food chain	Session 8: Leaching issues	Session 9: Automotive shredder residues	WORKSHOP II: IWWG Task Group: Industrial Waste Management
Thursday 13/9/2012 morning	Keynote Speaker 4 - Keynote Speaker 5			
	Session 10: Contaminant release and transport	Session 11: Waste / material characterization	Session 12: Mining issues	Special Session II: Hazardous Medical Waste Management (in Greek)
	Session 13: Management practices I	Session 14: National case studies	Session 15: Bio-energy production perspectives	Διαχείριση Επικίνδυνων Ιατρικών Αποβλήτων
Thursday 13/9/2012 afternoon	Poster Session Keynote Speaker 6			
	Session 16: Medical waste management & treatment	Session 17: Groundwaters	Session 18: Non wasted waste	WORKSHOP III: WEEE Recovery and Recycling
	Session 19: Medical waste production & characterization	Session 20: Waste - contaminant – hazard monitoring	Session 21: Thermal treatment	WORKSHOP IV: Waste Management and Resource Efficiency Policies
Friday 14/9/2012 morning	Keynote Speaker 7 - Keynote Speaker 8			
	Session 22: Landfilling	Session 23: Bio-processes	Session 24: Management practices II	Special Session III: Mineral and Metallurgical Waste Management in Greece (in Greek)
	Session 25: Sludge management and treatment	Session 26: Case studies of contaminated sites	Session 27: Wastewater treatment	Διαχείριση Μεταλλευτικών και Μεταλλουργικών Αποβλήτων στην Ελλάδα
Friday 14/9/2012 afternoon	Poster Session Keynote Speaker 9			
	Session 28: Chemical processes	Session 29: Characterization and treatment of contaminated sediments	Session 30: Fly ash	Session 31: Energy from waste
	Closing Ceremony ROUND TABLE DISCUSSION: The Future of Waste Management in Europe Poster Awards – Closing			
Friday 14/9/2012 evening	Gala Dinner			
Saturday 15/9/2012 morning	Excursion			