

The Thirty-Fifth International Conference on Solid Waste Technology and Management

Annapolis, MD (Washington, DC area), USA

March 22 – March 25, 2020

AGENDA

(updated February 4, 2020)

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- Mervat El-Hoz, University of Balamand, **Lebanon**
- Pascal Gatete, Depot Kalisimbi LTD, **Rwanda**
- Prof. Dr. Sadhan Kumar Ghosh, Dean, Faculty of Engineering & Technology, Jadavpur University and President, International Society of Waste Management, Air and Water, **India**
- Serpil Guran, Rutgers EcoComplex, **USA**
- Yitzhak Hadar, Hebrew University, **Israel**
- Kazuei Ishii, Hokkaido University, **Japan**
- Maria Liubarskaia, Saint-Petersburg State University of Economics, **Russia**
- Prof. Tateda Masafumi, Toyama Prefectural University, **Japan**
- Dr. Sara Ojeda-Benitez, Universidad Autonoma de Baja California, **Mexico**
- Kristyn Oldendorf, Baltimore City, Department of Public Works, **USA**
- Chukwu Onu, Southern University A & M College, **USA**
- Dr. Lakshmi Raghupathy, TERI School of Advanced Studies (TERI-SAS), **India**

CONFERENCE SUMMARY

SUNDAY, MARCH 22, 2020

- Pre-Conference Tour of Annapolis
- Professional Education Course
- Opening Reception

MONDAY, MARCH 23, 2020

Opening Plenary

Oral Presentations

- 1A Composting/Biological Treatment
- 1B Environmental Impacts 1
- 1C Case Studies 1

- 2A Waste Generation
- 2B Special Wastes
- 2C Ash
- 2D Chemical and Biological Treatment

- 3A Energy Recovery 1
- 3B Landfill 1
- 3C Agricultural Wastes 1

- 4A Electronic Wastes
- 4B Food Wastes
- 4C Use of Wastes in Construction 1
- 4D Research Advances

Poster Session 1

TUESDAY, MARCH 24, 2020

Oral Presentations

- 5A Agricultural Wastes 2
- 5B Education and Policy
- 5C Waste Impacts on Soils
- 5D Integrated MSW Management
- 5E Special Topics

- 6A Use of Wastes in Construction 2
- 6B Case Studies 2
- 6C Energy Recovery 2
- 6D Environmental Impacts 2

Poster Session 2

Oral Presentations

- 7A Use of Wastes in Construction 3
- 7B Landfill 2

Closing Reception

WEDNESDAY, MARCH 25, 2020

Technical Field Trips

DETAILED AGENDA

SUNDAY, MARCH 22

12:00 p.m. - 6:00 p.m.

Conference check-in and registration

1:00 p.m. - 5:00 p.m.

Guided Tour of Annapolis: A walking tour which includes the US Naval Academy, Historic Annapolis and the Maryland State House plus a narrated sightseeing cruise of Annapolis Harbor and the banks of the US Naval Academy
(additional fee)

1:00 p.m. - 5:00 p.m.

Professional Education Course:

Catalytic Conversion and Recycling of Waste Plastics

Instructor: *Gennaro Maffia*, Manhattan College, USA

Currently over 90% of used plastics are not directly recycled and end up in US landfills or incinerators. As more composite plastic materials are developed, this problem will only get worse. Technologies for waste plastics to petrochemicals that can be used in the production of new convert plastics and materials have been developed in the US, Japan, and Korea. A review of the technologies associated with the catalytic conversion of waste plastics back into benzene, toluene and xylene (BTX) will be presented including patented technology assigned to the Idaho National Laboratory of the US DOE and developed by faculty and students at Manhattan College.

5:00 p.m. - 6:00 p.m.

Welcome Reception

MONDAY, MARCH 23

8:00 a.m. - 5:30 p.m.

Conference check-in and registration

8:00 a.m. - 8:45 a.m.

Coffee

8:45 a.m. - 10:15 a.m.

Opening Plenary

Welcome: Roy McGrath, IOM, CAE, Director/CEO, Maryland Environmental Service, USA

Keynote Address: Stephanie C. Bolyard, Environmental Research & Education Foundation (EREF), USA

Plenary Presentation:

Sadhan Kumar Ghosh, President, International Society of Waste Management, Air and Water, & Mechanical Engineering Dept., Jadavpur University, **India**

10:20 a.m. – 11:30 a.m.

Sessions 1

SESSION 1A

Composting/Biological Treatment

The Case for a Single-Serve Compostable Coffee Capsule, *Tim Goodman*, NatureWorks, **United States**

Home Composting at Apartment Buildings, *Jonathan Plitmann*, Hebrew University of Jerusalem, **Israel**

Fecal Sludge Management in Bangladesh, *Mohammad Habibur Rahman*, Bangladesh University of Engineering & Technology (BUET), Dhaka, *Alauddin Ahmed*, Buet, **Bangladesh**

Biodegradation of Poultry Feather by Non Dermatophytic Filamentous Keratinolytic Fungi, *M.M.V. Baig*, Yeshwant College, Nanded, **India**

SESSION 1B

Environmental Impacts 1

Review of GHG's Contribution to Climate Change from Waste Management Practices and Mitigation Opportunities, *Shamim Ahsan*, Metropolitan State University of Denver, **United States**

Environmental Impacts of Sandstone Quarrying and Its Waste: A Case Study of Jodhpur, India, *Abhishek Singhal*, Tampere University, *Sudha Goel*, Indian Institute of Technology Kharagpur, **Finland**

A Comparative Life Cycle Assessment for a Single Stream and Drop Off Glass waste Collection: A Case Study of the City of Guelph, Canada, *Bassim Abbassi*, University of Guelph, School of Engineering, *Katherine Gatzos*, University of Guelph, School of Engineering, **Canada**

Effects of the Operations of Power Plants on Ambient Noise, Air and Water Quality on Affected Community, *Festus Osei Ampadu*, Kwame Nkrumah University of Science and Technology, **Ghana**

Assessment of Plastic Pollution Control Strategy for Sustainable Development in Emerging Economics, *Desmond Eseoghene Ighravwe*, University of Johannesburg, *Daniel Mashao*, University of Johannesburg, **South Africa**

SESSION 1C
Case Studies 1

Governance Failure in Public Service Delivery; A Study of Solid Waste Management in Kathmandu Metropolitan City, Nepal, *Indra Prasad Dahal*, University of Saskatchewan, **Canada**

Consume Less, Generate Less (waste): How Two Universities are Trying to Make a Difference, *Anita Zavodska*, Barry University, *Anne Morrissey*, Dublin City University, **USA**

A Situational Analysis of Municipal Solid Waste Management Practices in Sara-i-Alamgir City, Pakistan, *Khalid Iqbal*, University of Gujrat, *Muhammad Ali*, King Abdullah University of Science & Technology, Saudi Arabia, **Pakistan**

Evaluation of Solid Waste Generation, Categories and Disposal Option in Developing Country: A Case Study of Nigeria, *Augustine Oluwatoyin Ojo*, ABC Sanitation Solutions Ltd, **Nigeria**

The Challenges and Opportunities in Municipal Solid Waste Management: in the case of Shashemene Town, West Arsi Zone, Oromia Regional State, Ethiopia, *Mohammedamin Kuluse*, Arsi University, *Abdella Gure*, Wondo Genet College of Forestry & Natural Resources Hawassa University, **Ethiopia**

11:30 a.m. – 11:50 a.m.
Break

11:50 a.m. – 1:10 p.m.
Sessions 2

SESSION 2A
Waste Generation

An Analytical Study of Effects of Households Size and Family Income on Per Capita Solid Waste Generation in Urban Centres of Developing Countries, *Haruna Abdu Usman*, Abubakar Tafawa Balewa University Bauchi, *Kawuwa Abubakar Sarkile*, Abubakar Tafawa Balewa University Bauchi, *Muhammad Danladi*, Abubakar Tafawa Balewa University Bauchi, **Nigeria**

The Impact of Tourism on Solid Waste Generation in the Brazilian Municipality of Florianópolis, *Julio Dias*, Santa Catarina State University, *Carlos De Rolt*, Santa Catarina State University - UDESC, *Adriano De Amarante*, Santa Catarina State University - UDESC, **Brazil**

A Study on Household and Clinical Waste Composition in Sulaimani City, Kurdistan

Region/Iraq, Twana Tahir, Komar University of Science and Technology, *Ako Hama*, Komar University of Science and Technology, **Iraq**

Impact of Gross Domestic Product (GDP) Change on Municipal Solid Waste (MSW) Generation in Maputo, *Amad Gani*, Universidade do Porto / Universidade Pedagógica de Maputo, *Antonio Dias*, Universidade do Porto, *Antonio Monjane*, Faculdade de Ciências Naturais e Matemática, Campus de Lhanguene, Av. de Mocambique, km1, Maputo, **Mozambique**

Mobility of Solid Waste Constituents: From The Urban to Rural Areas, *Olufemi Oyedele*, Fame Oyster and Co, **Nigeria**

Marine Debris Prevention in Baltimore City, *Kristyn Oldendorf*, Baltimore City Department of Public Works, **United States**

SESSION 2B *Special Wastes*

Enhancement of the Geotechnical and Geochemical Properties of Gold Tailings by BOF Slag and Class F Fly Ash, *Eutricia Mkhonto*, University of Johannesburg, *Tebogo Mashifana*, University of Johannesburg, *Thandiwe Sithole*, University of Johannesburg, **South Africa**

Cement and Fly Ash Stabilised Gold Mine Tailings for the Development of New Material, *Eutricia Mkhonto*, University of Johannesburg, *Tebogo Mashifana*, University of Johannesburg, *Thandiwe Sithole*, University of Johannesburg, **South Africa**

Bioelectrochemical Treatment of Real Petroleum Refinery Oily Sludge Associated with Energy Generation in Microbial Fuel Cell, *Zainab Ziad Ismail*, University of Baghdad, *Rusul*, Khazaal, **Iraq**

Marine Debris Management in Brazil, *Enedir Ghisi*, Federal University of Santa Catarina, *Liseane Padilha Thives*, Federal University of Santa Catarina, *João Francisco Thives da Luz Fontes*, Federal University of Santa Catarina, **Brazil**

Economic Potential of Gold Mine Waste: A Case Study of Consolidated Murchison Mine Waste, *Rembuluwani Solly Ravele*, University of Venda, *Jason Ogola*, University of Venda, *Humbulani Rejune Mundalamo*, University of Venda, **South Africa**

SESSION 2C *Ash*

Mechanical and Chemical Quantification of Pozzolanic Activity of Municipal Sewage Sludge Ash, *Xiaochao Tan g*, Widener University, *Matt Howren*, Widener University, **United States**

Extraction of Silica (Si) and Alumina (Al) from Coal Combustion Residues Using Ammonium

Sulphate and Citric Acid, *Vidyadhar Gedam*, NITIE Mumbai, **India**

Comparative Study of the Characterization of Bottom Ash Medical Incinerator in Kuwait with Other Studies, *Saleh Al-Muzaini*, Kuwait Institute for Scientific Research, **Kuwait**

SESSION 2D

Chemical and Biological Treatment

Environmental Remediation of Contaminated Water Supplies, *Gennaro Maffia*, Manhattan College, Chemical Engineering, *Sonia Ethakkan*, Manhattan College, Chemical Engineering, *Aser Ibrahim*, Manhattan College, Chemical Engineering, **United States**

Catalytic Conversion and Recycling of Waste Plastics, *Gennaro Maffia*, Manhattan College, Chemical Engineering, *Sonia Ethakkan*, Manhattan College, Chemical Engineering, *Aser Ibrahim*, Manhattan College, Chemical Engineering, **United States**

Electronic Waste Evaluation in Brazil and Biodegradation of Printed Circuit Boards, *Adilson Roberto Gonçalves*, IPBEN - UNESP, *Priscila Benar*, Federal Institute at São Paulo, Hortolândia campus, *Stephany Fernandes Cavalcante*, Federal Institute at São Paulo, Hortolândia campus, **Brasil**

Liquid Extraction of Chlorophenols from Wastewater with Hydrophobic Deep Eutectic Solvents, *Idowu Adeyemi*, Khalifa University, **United Arab Emirates**

1:10 p.m. - 2:05 p.m.

Awards Luncheon

Presentation of the Russell Ackoff Award, Roy F. Weston Award, Iraj Zandi Award and Student Paper Award

2:05 p.m. – 3:55 p.m.

Sessions 3

SESSION 3A

Energy Recovery 1

Catalyzing Energy and Resource Recovery from MSW, *Douglas Wicks*, US Department of Energy, *Dora Lopez*, Booz Allen Hamilton, **United States**

A Technology of High-Temperature Steam Generation in Waste to Energy System for Hydrogen Production, *Sunhee Oh*, Korea Institute of Energy Research, *ChongPyo Cho*, *Seong-Ryong Park*, **South Korea**

Gas Production Behavior from Gas Hydrates by Depressurization Method, *Anupama Kumari*, Indian Institute of Technology, Roorkee, *Chandrajit Balomajumder*, Indian Institute of Technology, Roorkee, *A K Misra*, Ghrtc, Ongc Panvel, **India**

The Performance of Varying PTFE Coated Fabric Cloth on Electricity Production Using Synthetic Wastewater With Aid of Activated Carbon Air- Cathode, *Malesela Benny Molala*, University of Johannesburg, *Sydney du Plessis*, University of Johannesburg, *Robert Huberts*, University of Johannesburg, **South Africa**

The Feasibility Study of Wastewater Treatment Bio-sludge Recycling as Biomass Fuel, *Min Her Leu*, Kun Shan University, *Tsung-Tsan Li*, *Pei-Yin Hong*, **Taiwan, ROC**

SESSION 3B

Landfill

A Study of the Constraint to the Development of Sanitary Landfill in Nigeria - A Case Study of Benin Metropolis, *Dennis Iyeye Igbinomwanhia*, National Center for Energy and Environment, University of Benin, *Sunday Kelvin Chukwuyenum*, University of Benin, *Oghenekevwe Ernest Abel*, University of Benin, *Rasaki Promise*, *Onaivi Augustine Monday*, **Nigeria**

Health Effect of Landfill Location: A Case Study of Olusosun Landfill Lagos, Nigeria, *Augustine Oluwatoyin Ojo*, ABC Sanitation Solutions Ltd, **Nigeria**

Mathematical Simulation of Phases In Anaerobic Bioreactor Landfill for Organic Municipal Solid Waste, *Sandip Mali*, Pimpri Chinchwad College of Engineering, *Priyanka Shinde*, Department of Technology, Savitriai Phule Pune University, **India**

Biochar from Orange Peel Used as an Adsorbent of Ammonium Nitrogen from Landfill Leachate, *Larissa Firmino de Lima*, Parana Federal University, *Carlos Eduardo Rodrigues Braquilha*, Parana Federal University, *Cristina Borba Braga*, Parana Federal University, **Brazil**

Bench Test Evaluation of Leachate Scale Prevention, *Ivan Cooper*, Civil & Environmental Consultants, Inc., *Michael Keen*, Civil & Environmental Consultants, Inc., **US**

SESSION 3C

Agricultural Wastes 1

Utilization of Torula Yeast/Zymomonas Mobilis as Main/Reciprocal for Degradation of Municipal Organic Waste as Feed for Goats, *Chikezie Kanu Nkutere*, Federal Polytechnic Oke, **Nigeria**

Rice Husk and Rice Straw Biochar for Treating Municipal and Industrial Wastewater, *Bassim Abbassi*, University of Guelph, School of Engineering, *Ramesh Rudra*, University of Guelph, *Faisal Shahin*, University of Guelph, *Eman Alsayed*, *Shiv Prasher*, **Canada**

Lignins Converted to Valuable Materials in Biorefinery Concept, *Adilson Roberto Gonçalves*, IPBEN - UNESP, *Ana Júlia Traiba Silveira*, IPBEN - UNESP, *Larissa Cristina Silva*, IPBEN - UNESP, *Tárik Chaves Taha*, **Brasil**

Biodegradable Plastic from Banana Waste, *Shady F. Hassan*, Chemical Engineering Department

- Cairo University, *Fatma El-Zahraa Hanafy Ashour*, Chemical Engineering Department - Cairo University, *Ehab Fouad Abadir*, Chemical Engineering Department - Cairo University, **Egypt**

Improvement of the Hydrolysis and Acidogenesis of the Organic Fraction of Municipal Solid Wastes With Fungal Enzymes, *Maria Del Rosario Mancera Sandoval*, Universidad Autonoma Metropolitana/ Iztapalapa, *Octavio Loera*, Universidad Autonoma Metropolitana/ Iztapalapa, *Florina Ramirez Vives*, Universidad Autonoma Metropolitana/ Iztapalapa, **Mexico**

3:55 p.m. – 4:15 p.m.

Break

4:15 p.m. – 5:55 p.m.

Sessions 4

SESSION 4A

Electronic Wastes

Current Status and Challenges of Electronic Waste Management in India, *Ayub Sohail*, Aligarh Muslim University Aligarh UP India, *Fatima Sabeela*, Aligarh Muslim University Aligarh UP India, **India**

The Economic Benefit and Health Hazard Inherent in an Informal E-Waste Management in Nigeria, *Augustine Oluwatoyin Ojo*, ABC Sanitation Solutions Ltd, **Nigeria**

E-Waste Management in Bangladesh --- Its Potentials and Challenges, *Rowshan Mamta*, Bangladesh University of Engineering and Technology (BUET), *Fahmida Gulshan*, Bangladesh University of Engineering and Technology (BUET), **Bangladesh**

Recycling of Electronic Waste; Environmental Impact Assessment Study, *Hassan El Shimi*, Chemical Engineering Department, Cairo University, *Shakinaz El Shelrawy*, Chemical Engineering Department, Cairo University, *Hanem Sibak*, Chemical Engineering Department, Cairo University, **EGYPT**

Knowledge, Perceptions and Practices of Electronic Waste Management Among Consumers in the Absence of a Formal Management System in Kampala, Uganda, *Rebecca Nuwematsiko*, Makerere University School of Public Health, *Frederick Oporia*, Makerere University School of Public Health, *David Musoke*, Makerere University School of Public Health, *Juliet Nabirye*, *Ali Halage*, *Esther Buregyey*, **Uganda**

SESSION 4B

Food Wastes

Aerobic Bio-Degradation of Food Waste: Analysis and Applications of New Food Waste Disposal Technology, *Rachel Burch*, University of Delaware, *Savannah Sipes*, University of Delaware, *Daniel Cha*, University of Delaware, *Michael Chajes*, **United States**

Post-Consumer Food Waste: A Potential Ingredient in Aquafeed, *Mohamad Abiad*, American University of Beirut, *Nivin Nasser*, American University of Beirut, *Imad Saoud*, American University of Beirut, **Lebanon**

Effect of Membrane Removal on the Production of Calcium Oxide From Eggshells Via Calcination, *Samuel Tomi Aina*, University of Pretoria, *Vuyo Mjimba*, Human Sciences Research Council, *Deon Brink*, University of Pretoria, Pretoria, South Africa, *Barend Du Plessis* Chemical Engineering Department University of Pretoria, **South Africa**

Application of Circular Economy Concept for a Food Processing Activity, *N. Zidan*, Cairo University, *S.T. El Sheltawy*, Cairo University, *F. I. Barakat*, Cairo University, **Egypt**

SESSION 4C

Use of Wastes in Construction 1

The Circular Economy and Health Protection in the Czech Republic, *Magdalena Zimova*, Czech University of Life Sciences Prague, *Anita Zavodska*, Barry University, **Czech Republic**

An Ontological Analysis of Construction and Demolition Waste Management, *Shwetmala Kashyap*, Ramaiah Public Policy Center, *Arkalgud Ramaprasad*, University of Illinois at Chciago/ Ramaiah Public Policy Center, **India**

Isolation, Characterisation, Identification, Acclimatization and Evaluation of Arsenic Resistance Ability of Newly Isolated Bacterial Strain-Bacillus Cereus AVV2, *Vipul Kumar Yadav*, School of Biochemical Engineering, IIT (BHU) Varanasi, *Vishal Mishra*, School of Biochemical Engineering, IIT (BHU), Varanasi 221005, **India**

Structural, Dielectric and Attenuation Properties of Silica Lime Glass-Polymer Nano-Composites at Microwave Frequency, *Abubakar Yakubu*, Kebbi State University of Science And Technology, *Zulkifli Abbas*, Universiti Putra Malaysia, **Nigeria**

Estimation Mismanged Plastic Waste Using Machining Learning Algorithms, *Desmond Eseoghene Ighravwe*, University of Johannesburg, *Daniel Mashao*, University of Johannesburg, **South Africa**

SESSION 4D

Research Advances

An Ontological Analysis of Construction and Demolition Waste Management, *Shwetmala Kashyap*, Ramaiah Public Policy Center, *Arkalgud Ramaprasad*, University of Illinois at Chciago/ Ramaiah Public Policy Center, **India**

Isolation, Characterisation, Identification, Acclimatization and Evaluation of Arsenic Resistance

Ability of Newly Isolated Bacterial Strain-Bacillus Cereus AVV2, *Vipul Kumar Yadav*, School of Biochemical Engineering, IIT (BHU) Varanasi, *Vishal Mishra*, School of Biochemical Engineering, IIT (BHU), Varanasi 221005, **India**

Structural, Dielectric and Attenuation Properties of Silica Lime Glass-Polymer Nano-Composites at Microwave Frequency, *Abubakar Yakubu*, Kebbi State University of Science And Technology, *Zulkifli Abbas*, Universiti Putra Malaysia, **Nigeria**

Estimation Mismanged Plastic Waste Using Machining Learning Algorithms, *Desmond Eseoghene Ighravwe*, University of Johannesburg, *Daniel Mashao*, University of Johannesburg, **South Africa**

Household Storage and Disposal Practices of Pharmaceutical Wastes in Soweto (Johannesburg): A Pilot Survey, *Isaac Tebogo Rampedi*, University of Johannesburg, *Benele Magagula*, University of Johannesburg Department of Geography Environmental Management Energy Studies, **South Africa**

6:00 p.m. – 7:00 p.m

Posters 1

POSTER SESSION 1

Tannery Sludge Composting Disposal and Tagetes erecta Planting, *Yanxia Li*, Beijing Normal University, *Siyu An*, Beijing Normal University, *Linshu Jiang*, Beijing University of Agriculture, *Xingcai Chen*, *Baiyang Hu*, **China**

A Prospective of Coal Fly Ash Conversion to Zeolite Membrane for Wastewater Treatment Application, *Ozioma Nwachukwu*, Dept. of Civil & Environmental Eng., Southern University and A&M College, *Chukwu Onu*, Dept. of Civil & Environmental Eng., Southern University and A&M College, **United States**

Small Strain Characteristics of Porous SLA Specimens, *April Weintraub*, Tufts University, *Chris Swan*, Tufts University, **United States**

Assessment of Knowledge and Attitude Among Healthcare Workers on Medical Waste Management in Healthcare Facilities: a Systematic Review, *France Raphela*, Central University of Technology, Free State, **South Africa**

Abandoned Gold Mine Tailings: An Alternative Raw Material for South Africa's Glass Industry, *Godwin Uchenna Okereafor*, University of Johannesburg, *Mamookho Elizabeth Makhatha*, University of Johannesburg, *Lukhanyo Mekuto*, University of Johannesburg, *Vuyo Mavumengwana*, **South Africa**

Enhancing Anaerobic Digestion of Solid Organic Wastes for Biogas Production Through

Additives, *Kai-Chee Loh*, National University of Singapore, *Le Zhang*, NUS Environmental Research Institute, **Singapore**

New York City's Comprehensive Solid Waste Handling Solution, *Glen Johnson*, Greeley and Hansen, LLC, **United States**

Biodegradable Plastic from Banana Waste, *Shady F. Hassan*, Chemical Engineering Department - Cairo University, *Fatma El-Zahraa Hanafy Ashour*, Chemical Engineering Department - Cairo University, *Ehab Fouad Abadir*, Chemical Engineering Department - Cairo University, **Egypt**

Biodegradable Plastic from Agricultural Wastes, *Shady F. Hassan*, Chemical Engineering Department - Cairo University, *Ehab Fouad Abadir*, Chemical Engineering Department - Cairo University, *Fatma El-Zahraa Hanafy Ashour*, Chemical Engineering Department - Cairo University, **Egypt**

Use of Admixtures for Enhancing Pelletization and Strength of Aggregate Manufactured Using Overburden Soil, *Manjari T*, Indian Institute of Technology Madras, *Ramamurthy K*, Indian Institute of Technology Madras, **India**

Energy and Bio-Resources Recovery from Food Waste Using Hydrothermal Methods, *Henagmeh Bayat*, New Mexico State University, *Umakanta Jena*, New Mexico State University, **United States**

Effects of the Operations of Power Plants on Ambient Noise, Air and Water Quality on Affected Community, *Festus Osei Ampadu*, Kwame Nkrumah University of Science and Technology, **Ghana**

Economic Potential of Gold Mine Waste: A Case Study of Consolidated Murchison Mine Waste, *Rembuluwani Solly Ravele*, University of Venda, *Jason Ogola*, University of Venda, *Humbulani Rejune Mundalamo*, University of Venda, **South Africa**

Problems on Long-Term Operation of Landfill Sites Under Climate Change in Japan, *Kazuei Ishii*, Hokkaido University, *Fumitaka Koyama*, Hokkaido University, *Masahiro Sato*, Hokkaido University, **Japan**

Study of Effecting Factors on the Viscosity of Anaerobic Digested Sludge at a Biogas Plant for Food Waste, *Masahiro Sato*, Hokkaido University, *Daiki Kakiuchi*, *Tatsuya Koidzumi*, Hitachi Cement Co., Ltd, *Kazuei Ishii*, *Satoru Ochiai*, **Japan**

6:30 p.m. – 7:30 p.m
Reception

Information and discussion table on US Department of Energy's (DOE's) Advanced Research Projects Agency-Energy (ARPA-E) - a Research Funding organization that brings together academics, businesses, entrepreneurs and free thinkers to take on challenging topics related to

US Energy Security and Economic competitiveness.

TUESDAY, MARCH 24

8:00 a.m. - 5:30 p.m.

Conference check-in and registration

8:30 a.m. – 9:00 a.m.

Coffee

9:00 a.m. - 10:20 a.m.

Sessions 5

SESSION 5A

Agricultural Wastes 2

Smart Agriculture to detect Humidity, Ph, Nutrient Value of Soil using IOT, *Dipak Ranjan Jana*, Bapatla Women's Engineering College, *Bhargavi Manthena*, Bapatla Women's Engineering College, *Yamini Kokkiligadda*, Bapatla Women's Engineering College, *Rishitha Muddana*, *Thulasi Priya Kurapati*, **India**

The Dry Season Feed Potentials of Shed Leaves (Theobroma Cacao, Cassia Simea, Terminalia Catappa and Tectona Grandis), *Victor Olusegun Akinwande*, Tai Solarin University of Education, *Adejoke Adeneye Mako*, Tai Solarin University of Education Ijagun, Ijebu-Ode, *Nasirat Akinlolu*, Tai Solarin University of Education, Ijagun. Ijebu-Ode, *O. A. Subair*, **Nigeria**

Agricultural Waste Management and Risk Management, *Kakha Nadiradze*, Association for Farmers Rights Defense, AFRD, *Nana Phirosmanashvili*, Association for Farmers Rights Defense, AFRD, *Mariam Goginashvili*, Tbilisi State University, MBA Student, **Georgia**

The Dynamics of Farm Waste Management in South Western Nigeria: Issues and Challenges, *Anthony Olusanya*, Osun State University, **Nigeria**

Biodegradation of Fruit Waste by Pectinolytic Enzymes of Soil Fungi, *Ravi D. Barde*, SGB College, Purna, Maharashtra India, **India**

Design and Performance Assessment of Solid Waste as an Organic Fertilizer From Arum Leaf Extract During Electricity Generation System, *Md. Afzol*, Dr. Mahbubur Rahman Mollah College, *Md. Kamrul Alam*, Jagannath University, *Md. Emran quayum*, University of Dhaka, **Bangladesh**

Biodegradable Plastic from Agricultural Wastes, *Shady F. Hassan*, Chemical Engineering Department - Cairo University, *Ehab Fouad Abadir*, Chemical Engineering Department - Cairo University, *Fatma El-Zahraa Hanafy Ashour*, Chemical Engineering Department - Cairo University, **Egypt**

SESSION 5B
Education and Policy

Teaching Solid Waste Management to Environmental Public Health Students Through Personal Waste Audit, Energy Saving, and Self-Reflection Analysis, *Susan Mirlohi*, California State University Fresno, **United States**

Attitude of Households Towards Waste Collecting Companies in Pepsicola, Kathmandu, *Ashish Khanal*, Blue Waste to Value Pvt. Ltd., **Nepal**

Comparison Study on Reports of China's National Sword Policy in China and the US, *Abulajiang Atila*, Stony Brook University, *David Tonjes*, Stony Brook University, *Bhawana Zende*, Stony Brook University, *Gang He*, **United States**

Effects of National Sword Policy on Material Recovery Facilities in US, *Bhawana Zende*, Stony Brook University, *Atila Abulajiang*, Stony Brook University, **United States**

SESSION 5C
Waste Impacts on Soils

The Use of Cement-By-Pass-Dust (CBPD) to Stabilize an Expansive Soil, *Yahia Mohamedzein*, Sultan Qaboos University, *Khalil Al-Hashmi*, Sultan Qaboos University, *Hossam Hassan*, Sultan Qaboos University, **Oman**

Impact of Contamination by Disposed Detergents on the Geotechnical Properties of Sandy Soils, *Abdulla Sharo*, Jordan University of Science and Technology, *Ahmed Alawneh*, Jordan University of Science and Technology, *Osama Nusier*, Jordan University of Science and Technology, *Baraa' H. Daradkah*, **Jordan**

Stabilization of Slime and Fly Ash OB Dump with the Use of Jute Geotextile – Two Case Studies, *Pradip Choudhury*, National Jute Board, *Arvind Kumar*, National Jute Board, *Kishan Singh Gughtyal*, National Jute Board, **India**

Effectiveness of Red Mud in Combination with Sewage-Sludge to Improve Growth, Oil Yield and Quality of Cymbopogon Citratus (D.C.) Stapf. and Chrysopogon Zizanioides (L.) Roberty, *Meenu Gautam*, Banaras Hindu University, *Madhoolika Agrawal*, Banaras Hindu University, **India**

Study on Strength and Deformation Characteristics of Expansive Soils Treated with Lime-Biomass Ash, *Deheng Zhang*, Department of Architecture Civil Engineering, Nanjing Institute of Technology, *Shulin Sun*, Hohai University, *Fang Li*, Hohai University, **China**

SESSION 5D
Integrated MSW Management

Waste Treatment and Environmental Engineering: Fundamentals, *Satya Narayan*

Mukhopadhyay, Retired Prof. of I.I.T.Delhi, **India**

Comparative Study of Solid Waste Characteristics and Management Practices in Two Towns of Punjab Province of Pakistan, *Khalid Iqbal*, University of Gujrat, *Madeha Rafi*, Bloomfield Hall School, *Noreen Tayyaba*, University of Gujrat, **Pakistan**

Cost Estimation of Waste Disposal in Healthcare Facilities - A Case Study, *Vithika Vyas*, Manipal University, *Akhilendra Bhushan Gupta*, MNIT, **India**

SESSION 5E

Special Topics

Assessment of Occupational Risks Associated with Solid Wastes Management in Selected Nigerian Urban Centres: Implications for Sustainable Development Goals. *Anthony Kola-Olusanya*, Osun State University, *Adetunji Kehinde*, *John Agbonifo*, *Michael Arove*, *Udo Osisioyu*, *Olawale Olayide*, *Bosedede Akanbi*, *Chioma Onyige*, *Kayode Samuel*, *Basirat Bello*, **Nigeria**

Unbalancing of Wheel in the Axial and Thermal Effect on Wheel Tyre on Moving Vehicle: Automatic Detection with Andon and Buzzer with Remedy, *Dipak Ranjan Jana*, Bapatla Women's Engineering College, *Rishitha Muddana*, Bapatla Women's Engineering College, *Thulasi Priya Kurapati*, Bapatla Women's Engineering College, *Bhargavi Manthena*, *Yamini Kokkiligadda*, **India**

10:20 a.m. – 10:50 a.m.

Break

10:50 a.m. – 12:35 p.m.

Sessions 6

SESSION 6A

Uses of Wastes in Construction 2

Effect of Recycled Polyethylene Terephthalate Insertion in Hot Mix Asphalt, *José Wilson dos Santos Ferreira*, University of Brasília, *Michéle Dal Toé Casagrande*, University of Brasília, **Brazil**

Reuse of WFGD Gypsum as Construction Material: A Feasibility Study, *Thandiwe Sithole*, University of Johannesburg, *Dumisane Mahlangu*, University of Johannesburg, *Tebogo Mashifana*, University of Johannesburg, **South Africa**

Rehabilitation of Ferrous Foundry Sand Through Geopolymerisation and its Potential Application as a Construction Material, *Thandiwe Sithole*, University of Johannesburg, *Tebogo Mashifana*, University of Johannesburg, **South Africa**

Use of Admixtures for Enhancing Pelletization and Strength of Aggregate Manufactured Using Overburden Soil, *Manjari T*, Indian Institute of Technology Madras, *Ramamurthy K*, Indian Institute of Technology Madras, **India**

Effect of Curing Regime on the Mechanical Properties of Recycled Aggregate Concrete, *Roz-Ud-Din Nassar*, American University of Ras Al Khaimah, **United Arab Emirates**

Effect of Different Types of Filler Materials on Rutting of Asphalt Concrete Mixtures Using Wheel Tracking Test, *Taisir Khedaywi*, Jordan University of Science and Technology, *Saeed Alyaseen*, Yarmouk University, **Jordan**

SESSION 6B *Case Studies 2*

Cleaning Up After Ourselves: Solid Waste Management in Katmandu, Nepal, and Saskatoon, Saskatchewan, Canada, *Indra Prasad Dahal*, University of Saskatchewan, **Canada**

Exploring the Facts Associated with Waste Management in Semi-Urban Areas of India by Household Social Survey, *Chandana N*, Indian Institute of Technology Bombay, *Bakul Rao*, Indian Institute of Technology Bombay, *Meghraj garad*, Indian Institute of Technology Bombay, *Megha Yashawant Nikam*, *Kanchan Prakash Malkhede*, *Hemlata Dilip Suryawanshi*, **India**

New York City's Comprehensive Solid Waste Handling Solution, *Glen Johnson*, Greeley and Hansen, LLC, **United States**

Waste Managment and Culture of Indifference in Owo Region, Ondo State, Nigeria, *Bamikole Samuel Omosulu*, Rufus Giwa Polytechnic, *Lekan Raifu Ogunmodede*, Rufus Giwa Polytechnic, **Nigeria**

Solid Waste Management in Africa, *Hanem Sibak*, Cairo University, *Ahmed Refaat*, Cairo University, *Shakinaz ElSheltawy*, Cairo University, **Egypt**

Deriving Municipal Solid Waste Miles for an Indian Metropolitan City: A case of Pune City, *Amruta Garud*, IIT Bombay, *Bakul Rao*, IIT Bombay, **India**

Model of Solid Waste Management for Developing Cities: The Case of Accra, Ghana, *Richard Amponsah*, Africa Environmental Sanitation Consult, *Kodwo Miezah*, Kwame Nkrumah University of Science and Technology, Kumasi, **Ghana**

Solid Waste Management Practices and Life Expectancy in Developing Regions: Implications for Sustainable Development in Nigeria, *Bosedede Akanbi*, Osun State University, Osogbo, *Anthony Kola-Olusanya*, Osun State University, Osogbo, **Nigeria**

Solid Waste Management for Clean Water Provision: The Prospects of Waterways Restoration in Sub-Saharan Africa, *Henschel Julius Peters*, University of Science and Technology Portharcourt Rivers State, *Lambert Nneji Iwu*, Federal University of Technology Owerri, Imo State, Nigeria,

Callistus Chibuike Agbaleje, Imo State University, Owerri, *Daniel Ogechukwu Ejiofor*, *Joel Chijioke Ejiofor*, **Nigeria**

International Approaches to Waste Management: Case Study of India, *Ketan Shah*, The University of Texas at Arlington, *Melanie Sattler*, The University of Texas at Arlington, **United States**

SESSION 6C ***Energy Recovery 2***

Enhanced Resource Recovery & Fugitive Emissions Control, *Michael Landato*, L&J Technologies, *Alex Jucas*, L&J Technologies/Shand & Jurs Biogas, **United States**

Pretreatment of Agricultural Wastes to Improve Biogas Production, *Jyothilakshmi Ramaswamy*, M. S. Ramaiah Institute of Technology, *Sumangala Patil*, M.S. Engineering College, *Dr. Sandhya Jaykumar*, Nodal Officer, *Dr. Sadhan Kumar Ghosh*, Jadhavpur University Kolkata, *Dr. K S Badarinarayan*, MSEC, **India**

Enhanced Production of Hydrogen Rich Gas Via the Pyrolysis of Empty Fruit Bunch, *Emmanuel Olisa*, Australis Institute of Technology and Education, *Salmiaton Ali*, Universiti Putra Malaysia, **Australia**

Energy and Bio-Resources Recovery from Food Waste Using Hydrothermal Methods, *Henagmeh Bayat*, New Mexico State University, *Umakanta Jena*, New Mexico State University, **United States**

Production of Methane by Municipal Solid Waste – Peroxide Application, *Miraj Baldha*, Pandit Deendayal Petroleum University, *Meetkumar Govani*, Pandit Deendayal Petroleum University, *Om Rakholia*, Pandit Deendayal Petroleum University, **India**

Study on Thermal Utilization of Energy Crop Miscanthus Giganteus by Small Biomass-Burner, *Satoru Ochiai*, Hokkaido University, *Masahiro Sato*, Hokkaido University, *Kazuei Ishii*, Hokkaido University, *Toru Furuichito*, Hokkaido University, **Japan**

SESSION 6D ***Environmental Impacts 2***

Investigation of Environmental and Socio-Economic Impacts of Coal Mining at Tshikondeni Exxaro Mine, Limpopo Province, South Africa, *Phumudzo Gift Munyai*, University, *Jason Samuel Ogola*, University, *Lufuno Reginald Kone*, University, **South Africa**

Greenhouse Gases Emissions Control In Asphalt Plants, *Liseane Padilha Thives*, Federal University of Santa Catarina, *Enedir Ghisi*, Federal University of Santa Catarina, **Brazil**

Groundwater Resource Evaluation of Dangila Area (Amen River catchment), North Western Ethiopia, Molla Mitiku Kebetie, Amhara Design and Supervision Works Enterprise, **Ethiopia**

Simulations Removal of Lead and Cadmium from Contaminated Water Using Alkali Activated Fly Ash Material - Permeable Reactive Barrier (AAM-PRB), *Hossein Rostami*, Thomas Jefferson University, *Fernando Tovia*, Thomas Jefferson University, *Mozhgan Bahadary*, Community College of Philadelphia, **United States**

12:35 p.m. – 1:35 p.m.

Poster Session 2

POSTER SESSION 2

Assessment of Metal Content of Waste Laptop Computers and Estimation of Their Recovery Potential in Randburg Central Business District of Johannesburg, South Africa, *Godwin Uchenna Okerefor*, University of Johannesburg, *Lukhanyo Mekuto*, University of Johannesburg, **South Africa**

Energy Consumption Analysis Between Scrap Tires Manufacturing and Co-Processing in Brazilian Cement Plants, *Rafaela Jeffe Mondadori*, Federal University of Santa Catarina, *Vitor Schweitzer Thiesen*, Federal University of Santa Catarina, *Carlos Eduardo Figur*, Federal University of Santa Catarina, *Sérgio Luiz Sevigiani Filho*, *Liseane Padilha Thives*, *Cláudio Cesar Zimmermann*, **Brazil**

Acoustic Performance of Recycled Aggregates from Civil Construction, *Guilherme Estacia Ambros*, Federal University of Santa Catarina, *Henrique Juarez Zandonai*, Federal University of Santa Catarina, *Júlia Valentina Bonelli*, Federal University of Santa Catarina, *Julia Rataichesk Fiates*, *Cláudio Cesar Zimmermann*, *Seane Padilha Thives*, *Dr. Fernando Pelisser*, **Brazil**

Recycling Options of Arum Leaf Waste During Bioelectrical Characterization and Nanoparticles (Nps) Production: Economic and Environmental Effects, *Obaidullah Nayan*, Dr. Mahbubur Rahman Mollah College, *Afzol Hossain*, Dr. Mahbubur Rahman Mollah College, **Bangladesh**

Application of Expanded Granular Sludge Bed with Dewatered Sludge-Fly Ash Biofilm Process to Treat 2-Chlorophenol in Wastewater, *Yen-Hui Lin*, Central Taiwan University of Science and Technology, **Taiwan**

Fluorene Degradation in Sand by Conventional and Catalytic Ozonation, *Jaime Dueñas Moreno*, Lab. Ing. Química Ambiental SEPI-ESIQIE del Instituto Politécnico Nacional, *Tatyana Poznyak*, Lab. Ing. Química Ambiental SEPI-ESIQIE del Instituto Politécnico Nacional, *Julia L. Rodríguez Santillán*, Lab. Ing. Química Ambiental SEPI-ESIQIE del Instituto Politécnico Nacional, *Isaac Chairez Oria*, **México**

Reclaimed Asphalt Pavement as a Substitution Aggregates in Roller Compacted Concrete Pavement Mixes, *Solomon Debbarma*, Indian Institute of Technology Roorkee, *G.D. Ransinchung R.N.*, Indian Institute of Technology Roorkee, *Surya Kant Sahdeo*, Indian Institute of Technology Roorkee, **India**

Influence of the Light Source on the Chlorella Vulgaris Biomass Growth in the Culture Medium Supplemented with Anaerobic Digestate, *Marcin Debowski*, University of Warmia and Mazury in Olsztyn, *Marta Kisielewska*, University of Warmia and Mazury in Olsztyn, *Joanna Kazimierowicz*, Bialystok University of Technology, *Marcin Zielinski*, **Poland**

Influence of the Pretreatment Methods of Anaerobic Digestate On the Efficiency of Microalgae Biomass Cultivation, *Marcin Zielinski*, University of Warmia and Mazury in Olsztyn, *Marta Kisielewska*, University of Warmia and Mazury in Olsztyn, *Marcin Debowski*, University of Warmia and Mazury in Olsztyn, *Piera Quattrocelli*, *Anna Bordiean*, *Joanna Kazimierowicz*, **Poland**

Effect of Membrane Removal on the Production of Calcium Oxide From Eggshells Via Calcination, *Samuel Tomi Aina*, University of Pretoria, *Vuyo Mjimba*, Human Sciences Research Council, *Deon Brink*, University of Pretoria, Pretoria, South Africa, *Barend Du Plessis* *Chemical Engineering Department University of Pretoria*, **South Africa**

Exploring the Facts Associated with Waste Management in Semi-Urban Areas of India by Household Social Survey, *Chandana N*, Indian Institute of Technology Bombay, *Bakul Rao*, Indian Institute of Technology Bombay, *Meghraj garad*, Indian Institute of Technology Bombay, *Megha Yashawant Nikam*, *Kanchan Prakash Malkhede*, *Hemlata Dilip Suryawanshi*, **India**

Assessment of Plastic Pollution Control Strategy for Sustainable Development in Emerging Economics, *Desmond Eseoghene Ighravwe*, University of Johannesburg, *Daniel Mashao*, University of Johannesburg, **South Africa**

Estimation Mismanaged Plastic Waste Using Machining Learning Algorithms, *Desmond Eseoghene Ighravwe*, University of Johannesburg, *Daniel Mashao*, University of Johannesburg, **South Africa**

A Simple Three-Dimensional Numerical Model to Predict Leachate Generation in Landfill Sites for Climate Change Mitigation Measures, *Kazuei Ishii*, Hokkaido University, *Natsuki Hiraoka*, Hokkaido University, *Masahiro Sato*, Hokkaido University, **Japan**

Forecast of Time Series Applied to Industrial Production of Catalysts for Forecasting of Waste Generation, *Marco Figueiredo*, Universidade do Estado do Rio de Janeiro, *Marcelo Provenza*, Universidade do Estado do Rio de Janeiro, **Brasil**

1:35 p.m. – 2:35 p.m.

Luncheon

2:35 p.m. – 4:25 p.m.

Sessions 7

SESSION 7A

Use of Wastes in Construction 3

Effect of Crumb Rubber and Low Density Polyethylene on Flexible Pavements, *Prakash Munnoli*, S.D.M College of Engineering and Technology, *Ishan Soodan*, S.D.M College of Engineering & Technology, **India**

Use of Marble Slurry and Crusher Waste for Sustainable Buildings., *Vithika Vyas*, Manipal University, *Ashok Kumar Vyas*, Malaviya National Institute of Technology, **India**

SESSION 7B

Landfill 2

Removal of Ammonia Nitrogen and Cod by Combination of Electrochemical and Advanced Oxidation Process for Landfill Leachate, *V. Himabindu*, Institute of Science and Technology, JNTUH, *D. Bhagawan*, *G. Shankariah*, *P. Kiran kumar*, *S. Vijaya Krishna*, *L. Sushma*, **India**

Waste Containment by Bentonite/Sand Seal, *Haluk Akgün*, Middle East Technical University (METU), **TURKEY**

5:00 p.m. – 6:00 p.m.

Closing Reception

WEDNESDAY MARCH 25

8:00 a.m. – 9:00 a.m.

Conference check-in and registration

8:00 a.m. – 9:00 a.m.

Coffee

9:00a.m. – 2:00 p.m.

Technical Field Trips (choose 1)

Field Trip 1 – to be announced

Field Trip 2 – to be announced