

# The Thirty-Fourth International Conference on Solid Waste Technology and Management

Annapolis, MD (Washington, DC area), USA

March 31 – April 3, 2019

## AGENDA

(updated March 7, 2019)

Department of Civil Engineering  
Widener University  
1 University Place  
Chester, PA 19013-5792 USA  
Phone: 610-499-4042  
Fax: 610-499-4461  
Email: [solid.waste@widener.edu](mailto:solid.waste@widener.edu)  
[solid-waste.org](http://solid-waste.org)

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University of Pennsylvania

Chair: Ronald L. Mersky  
Widener University

Manager: Laleh Majnoon Jahromi  
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- Pascal Gatete, Depot Pharmaceutique et Materiel Medical Kalisimbi, Rwanda
- Sadhan Kumar Ghosh, Jadavpur University, India
- Serpil Guran, Rutgers EcoComplex, USA
- Yitzhak Hadar, The Hebrew University of Jerusalem, Israel
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- Maria Liubarskaia, Saint-Petersburg State University of Economics, Russia
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- Chukwu Onu, Southern University and A & M College, USA
- Lakshmi Raghupathy, TERI University, India
- Krishna R. Reddy, University of Illinois, USA
- Masafumi Tateda, Toyama Prefectural University, Japan

# CONFERENCE SUMMARY

## SUNDAY, MARCH 31, 2019

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

## MONDAY, APRIL 1, 2019

Opening Plenary

### Oral Presentations

- 1A Landfill 1
- 1B Waste Generation and Composition
- 1C Use of Wastes in Construction 1
- 1D Public Education and Involvement
  
- 2A Policy and Regulations
- 2B Construction and Demolition Wastes
- 2C Geotechnical Use of Wastes
- 2D Biological Treatment
- 2E Energy Recovery
  
- 3A Agricultural Wastes
- 3B Ash
- 3C Facilities Siting
- 3D Case Studies 1
- 3E Environmental Assessment 1
  
- 4A Landfill 2
- 4B Use of Wastes in Construction 2
- 4C Electronic Wastes
- 4D Plastics Wastes
- 4E Contaminated Sites 1

Poster Session 1

## TUESDAY, APRIL 2, 2019

### Oral Presentations

- 5A Waste Collection
- 5B Landfill 3
- 5C Policy and Management
- 5D Tire/Rubber Wastes
- 5E Health Care Wastes
  
- 6A Environmental Assessment 2
- 6B Biological and Chemical Treatment
- 6C Contaminated Sites 2
- 6D Special Wastes 1
- 6E Sludge

Poster Session 2

### Oral Presentations

- 7A Case Studies 2
- 7B Special Wastes 2
- 7C Use of Wastes in Construction 3

Closing Reception

## WEDNESDAY, APRIL 3, 2019

Technical Field Trips

# DETAILED AGENDA

## SUNDAY, MARCH 31

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  
(additional fee)

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

Professional Education Course:

Garbo-flex: A New Technology for Converting Waste Plastic Polyolefin Catalytically to Liquid Chemicals- Benzene, Toluene, Xylene- and Fuel Gas

Instructors, *Gennaro Maffia, Amanda Peterman and Xufang (Katie) Liu*, Manhattan College, USA

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

Welcome Reception

## MONDAY, APRIL 1

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. – 10:00 a.m.

Opening Plenary

### **Welcome:**

*Roy McGrath, IOM, CAE, Director/CEO, Maryland Environmental Service*

*Speaker to be announced, Mid-Atlantic Region, US EPA*

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

### **Plenary Presentations:**

Waste & Circular Carbon Economy, *Serpil Guran*, Rutgers EcoComplex, USA

Long Term Strategy to attain Zero Plastic Wastes in the Environment, *Lakshmi Raghupathy*, TERI School of Advanced Studies, **India**

Sustainable Waste Management in Ribboning and Retting Process of Jute – an alternative to Plastics, *Sadhan Kumar Ghosh*, President, International Society of Waste Management, Air and Water, & Mechanical Engineering Dept., Jadavpur University, **India**

10:05 a.m. – 11:30 a.m.

**Sessions 1**

## **SESSION 1A**

### ***Landfill 1***

Status of Solid Waste Landfill in Benin Metropolis, Nigeria, *Dennis Iyeke Igbinomwanhia*, University of Benin, *Ohikhokhai Gift Aizebeoje*, University of Benin, *Osaghale Andrew Ehizogie*, University of Benin, **Nigeria**

Impacts of Temperature on Waste Stabilization and Settlement, *Paul Van Geel*, Carleton University, *Courtney Berquist*, Carleton University, **Canada**

The Effect of Landfill Gas on Vegetation in Landfill Biocover Systems, *Dinu Sankalpa Attalage*, University of Calgary, *Joseph Patrick Hettiaratchi*, University of Calgary, *Hiva Jalilzadeh*, University of Calgary, *Erfan Irandoost*, *Eranda Bartholomeuz*, **Canada**

Mitigation of Fugitive Landfill Emissions using BOF Slag in Landfill Cover, *Jyoti Chetri*, University of Illinois at Chicago, *Krishna Reddy*, University of Illinois at Chicago, **USA**

## **SESSION 1B**

### ***Waste Generation and Composition***

Comparative Study of Solid Waste Characteristics and Management Practices in Two Towns of Punjab Province of Pakistan, *Khalid Iqbal*, Office of Research, Innovation and Commercialization (ORIC), University of Gujrat, Gujrat (50700), Punjab, Pakistan, *Madeeha Rafi*, Bloomfield Hall School, Bhimber Road, Near Government Postgraduate Zamindar College, Star Colony, Gujrat (50700), Punjab, Pakistan, *Tayyaba Noreen*, Department of Geography, University of Gujrat, Gujrat (50700), Punjab, Pakistan, **Pakistan**

Grain-Class-Specific Water Contents of Different Waste Streams, *Kay Johnen*, RWTH Aachen University - Department of Processing and Recycling, *Alexander Feil*, RWTH Aachen University - Department of Processing and Recycling, **Germany**

Generation and Characterization of Solid Waste in a Peri-Urban Community in Sub-Saharan Africa, *Olubunmi Mokuolu*, University of Ilorin, *Medinat Abdulsalam*, University of Ilorin, **Nigeria**

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

Catarina State University - UDESC, *Adriano Amarante*, Santa Catarina State University - UDESC, **Brazil**

Solid Waste Generation and Management in Schools Within Samaru Kaduna State Nigeria, *Fatima Badiru Ibrahim*, Department of Water Resources & Environmental Engineering, Ahmadu Bello University, Zaria, *Khadijat Abdulkareem Abdulraheem*, Department of Water Resources & Environmental Engineering, Ahmadu Bello University, Zaria, *Ahmed M. Baba*, Department of Water Resources & Environmental Engineering, Ahmadu Bello University, Zaria, **Nigeria**

## SESSION 1C

### *Use of Wastes in Construction 1*

Structural Performance of Concrete Elements Constructed Using Recycled Concrete Aggregate and Recycled Tyre Steel Fibres, *Hynda Aoun-Klalib*, Nottingham Trent University, *Nicholas Barnes*, Waldeck, Digital Strategy Consultancy Solutions, *Bahareh Kaveh*, Nottingham Trent University, **UK**

Viscosities of Waste Modified Trinidad Asphaltic Materials, *Rehana Ali*, The University of Trinidad and Tobago, *Rean Maharaj*, The University of Trinidad and Tobago, *Nazim Mohamed*, The University of Trinidad and Tobago, **Trinidad and Tobago**

Durability Performance of Flat Panel Display Glass Concrete, *Grady Mathews IV*, Penn State Harrisburg, *Robert Bylone Jr.*, Pennsylvania Recycling Markets Center Inc., *Harry Nash*, High Concrete Group, LLC, *Dr. Shirley Clark*, **USA**

Utilization of Industrial By-Products in Self-Compacting Concrete, *Nikita Gupta*, Thapar Institute of Engineering & Technology, *Rafat Siddique*, Thapar Institute of Engineering & Technology, **India**

## SESSION 1D

### *Public Education and Involvement*

Evaluation of Swachh Bharat Mission Slogan on Solid Waste Management in India, *Ashootosh Mandpe*, Csir-National Environmental Engineering Research Institute (Csir-Neeri), Nagpur, *Sunil Kumar*, Csir-National Environmental Engineering Research Institute (Csir-Neeri), Nagpur, **India**

Recycling and Reducing Waste in Schools, *Suzana Namusonga*, Handmaids Sisters, **Zambia**

Household Preferences and Willingness to Pay for Waste Management Services in Rural Nigeria, *Richardson Kojo Edeme*, University of Nigeria, *Nelson Nkalu*, University of Nigeria, **Nigeria**

Household Solid Waste Management in Monrovia, Liberia: Influencing factors, Characteristics, and Management Solutions, *Victor Emer David Jr*, Chongqing University, **China**

Using the Young to Realize Solid Waste Management Goals in Municipals in Developing Countries, *Joan Chepkoech Tonui*, Kenyatta University, **Kenya**

Attitudes and Behaviour of Residents towards the Management and Recycling of Municipal Solid Wastes in Olievenhoutbosch, South Africa, *Ndivhewafhi Oscar Makhale*, University of Johannesburg, *Isaac Tebogo Rampedi*, University of Johannesburg, **South Africa**

11:30 a.m. – 11:50 a.m.  
Break

11:50 a.m. – 1:10 p.m.  
**Sessions 2**

## **SESSION 2A** ***Policy and Regulations***

Governance Failure in Public Service Delivery; A Study of Solid Waste Management in Kathmandu Metropolitan City, Nepal, *Indra Prasad Dahal*, Nepal Rural Development and Environment Protection Council, **Nepal**

Addressing Tire Dumps through Legislation, *Michael Grappe*, Arkansas Department Of Environmental Quality, **USA**

How Policies Can Support Small Businesses in Community Waste Collection – Case Studies from Mbeya, Tanzania and Baltimore, Maryland, *Kristyn Oldendorf*, Baltimore City Department of Public Works, **USA**

Solid Waste Issues in the Palestinian Authority Area of the West Bank, *Ivan Cooper*, Civil & Environmental Engineers, Inc., Eng. Monther Hind, Palestinian Wastewater Engineers Group (PWEG), **USA**

An Assessment of Policy Related to Municipal Solid Waste Management in Botswana, *Daniel Mmereki*, Department for Management of Science and Technology Development, Ton Duc Thang University, *Kgosiesele Velempini*, University of Botswana, *Larona Mosime-Serero*, Botswana Qualification Authority, **Vietnam**

Development of Municipal Solid Waste Policy in Lebanon, *Mervat El-Hoz*, The University of Balamand, **Lebanon**

## **SESSION 2B** ***Construction and Demolition Wastes***

Estimation of Construction Waste with Rectangular Prism and Pyramidal Shape Method in Urban Areas of Pakistan, *Jawad Rafi*, Al Khayarin International, Al Thumama, Doha, Qatar, *Muhammad Rafi*, Royal Haskoning & Khatib & Alami and Partners, Sultanate of Oman

(former), *Mukaram Mushtaq*, Department of Computer Sciences, University of Gujrat, Gujrat (50700), Punjab, Pakistan, **Qatar**

Best Practices for Reducing, Reusing, and Recycling Construction and Demolition Materials, *Diana Gutierrez*, Straughan Environmental, Inc., **USA**

Utilization of waste concrete aggregates in bituminous mixes, *Pushpinder Singh*, Punjab Engineering College, Chandigarh, *S.K. Singh*, Punjab Engineering College, Chandigarh, **India**

Recovery of Exterior Insulation Finishing Systems Containing EPS as Part of a Circular Economy, *Martin Simons*, RWTH Aachen University Department of Processing and Recycling, *Alexander Feil*, RWTH Aachen University Department of Processing and Recycling, **Germany**

Recovery of Exterior Insulation Finishing Systems Containing EPS as Part of a Circular Economy, *Martin Simons*, RWTH Aachen University Department of Processing and Recycling, *Alexander Feil*, RWTH Aachen University Department of Processing and Recycling, **Germany**

The Reuse of Waste in the Brazilian Construction Industry, *Marienne do Rocio de Mello Maron da Costa*, Federal University of Paraná, *Luiz Felipe Cordeiro*, Federal University of Paraná, *Michael Isaac Gabriel Santos*, University of São Paulo / Straton Public Policies Management Consulting, *Marisa, Soares, Borges*, **Brazil**

## SESSION 2C

### *Geotechnical Use of Wastes*

Dry Density-Water Content Curves for High Plasticity Clays Treated with Fly Ash, Stone Dust and Combinations, *Darga Kumar Nandyala*, J N T University Hyderabad, **India**

Crushed Solid Wastes Based Geopolymer Cements and Nano-Geomaterials and the Rheology of Treated Soils for Pavement Construction, *Kennedy Onyelowe*, Michael Okpara University of Agriculture, Umudike, Umuahia, Abia State, Nigeria, *Duc Bui Van*, Hanoi University of Mining and Geology, Hanoi, *Manh Nguyen Van*, Hanoi University of Mining and Geology, **Nigeria**

Mechanical Behavior of a Reinforced Clay Soil with Açai (*Euterpe oleracea*) Fibers, *Matheus Machado Lopes*, Universidade de Brasília, *Victória Gomes de Oliveira*, Universidade de Brasília, *Michéle Dal Toé Casagrande*, Universidade de Brasília, **Brazil**

Experimental Research on a New Solid Waste Stabilizer KC of Stabilizing Chloride Soil, *Yin Cheng*, China Academy of Transportation Sciences, *Jing Chen*, China Academy of Transportation Sciences, *Ya-fei Li*, China Academy of Transportation Sciences, *Luo Dai-song*, **China**

Experimental research on a new solid waste stabilizer KC of stabilizing chloride soil, *Yin Cheng*, China Academy of Transportation Sciences, *Jing Chen*, China Academy of Transportation Sciences, *Ya-fei Li*, China Academy of Transportation Sciences, *Luo Dai-song*, **China**

Characteristics of Apparent Electrical Resistivity on Compacted Clays Mixed with Lime and Fly



Ash, Fang Li, Hohai University; Jiangsu Province Nanjing Engineering Vocational College, Shulin Sun, Hohai University, deheng zhang, Nanjing Institute of Technology, **P.R. China**

## **SESSION 2D**

### ***Biological Treatment***

Vermicomposting of Different Organic Materials Using the Epigeic Earthworm Eisenia Foetida, Yvonne Indrani Ramnarain, Ministry of Agriculture, Abdullah Ansari, University of Guyana, Lydia Ori, University of Suriname, **Suriname**

Application of Mixed Organic Waste for Effective Septage Treatment through In-vessel Co-composting, Anu Rachel Thomas, Indian Institute of Technology Madras, Martin Kranert, University of Stuttgart, Ligy Philip, Indian Institute of Technology Madras, **NIL, India**

Assessment of the Effects of Beauveria Bassiana (Hypocreales) inoculum on the Composting of Vegetable Wastes, Felix Nchu, Cape Peninsula University of Technology, Nomfusi Ntsobi, Cape Peninsula University of Technology, **South Africa**

Biodegradable Waste management techniques for Apartments complexes and Gated communities for Metro cities- Best Practices of Bruhat Bengaluru Mahanagarapalike(ULB of Bengaluru City), jothilakshmi Ramaswamy, M. S. ramaiah Institute of Technology, Sumangala Patil, M.S. College of Engineering, **India**

Investigation of Biosolid-Compost Produced by High-Temperature Fermentation Process, Jih-Hsing Chang, Chaoyang University of Technology, Saroj Adhikari, Chaoyang University of Technology, Ding-Quan Ng, Chaoyang University of Technology, Shan-Yi Shen, **Taiwan**

Impact of Seasonal and Regional Influences on the Quality of Separately Collected Biological Waste, Melanie Brune, RWTH Aachen University - I.A.R., Christoph Jansen, RWTH Aachen University - I.A.R., Alexander Feil, RWTH Aachen University - I.A.R., **Germany**

## **SESSION 2E**

### ***Energy Recovery***

Trial Calculation to Obtain the Upper Price Limit for a Complete Electricity Generation System Based on Waste Incineration, Masafumi Tateda, Toyama Prefectural University, Ryoko Sekifuji, Toyama Prefectural University, **Japan**

Challenging Situation to Optimise 100% Pet Coke With 15% Tsr: A Case Study at Ambujanagar, Bibekananda Mohapatra, National Council for Cement & Building Materials, Pravesh Kumar Sharma, Ambuja Cements Ltd., Ramsinh Chauhan, Ambuja Cements Ltd., Mr. Atul Kumar Chaturvedi, Ms. Reshu Chauhan, Mr. Sukuru Ramarao, **India**

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**

#### ***Agricultural Wastes***

Assessment of Environmental Impact and Nutrient Content of Oil Palm Slurry in Livestock Nutrition in Nigeria, *Adejoke Adeneye Mako*, Tai Solarin University of Education, Ijagun, *Oluwanike Abiola-Olagunju*, Lead City University, Ibadan, *Victor Olusegun Akinwande*, Tai Solarin University of Education, Ijagun, **Nigeria**

Novel Application of Ultrasonic Pretreatment of Giant Reed Co-Digested with Chicken Manure for Biogas Recovery, *Zainab Ismail*, University of Baghdad, *Nazik Noori*, University of Baghdad, **Iraq**

Reverse Logistics of Agrochemical Packaging in Brazil: Case Study, *Ariane Braga Oliveira*, Unesp, *Bruno Fernando Gianelli*, Instituto Federal de São Paulo, *Sandro Donnini Mancini*, Unesp, **Brazil**

Feasibility Analysis of Different Agricultural Waste Management Techniques for Northern India, *Nawazish Parwez*, IIT Kharagpur, *Hitesh Vyas*, IIT Kharagpur, **India**

Effect of Crop Residue, Poultry Manure, Cow Dung and Sawdust as a Growth Media in the Production of Physic Nut (*Jatropha curcas* L.) Seedlings in Samaru Zaria, Nigeria, *Usman Ibrahim*, Ahmadu Bello University, Zaria, *I. L. Hamma*, Federal University, Kashere, Gombe State, *I.J. Dantata*, Federal University, Gashua, Yobe State, **Nigeria**

Utilisation of Agricultural Wastes for Wealth Generation in Nigeria, *Temitayo Ogunsakin*, Fame Oyster & Co. Nigeria, **Nigeria**

Development of Solid Waste as a Organic Fertilizer from Arum Leaf Extract During Electricity Generation System, *Md.Afzol Hossain*, Dr. Mahbubur Rahman Mollah College, *Kamrul Alam Khan*, Jagannath University, *Md. Emran Quayum*, University of Dhaka, **Bangladesh**

Characteristics of Wood Pellets Mixed with Torrefied Rice Straw, *Kazuei Ishii*, Hokkaido University, *Toru Furuichi*, Hokkaido University, *Ryosuke Kizuka*, Hokkaido University, *Masahiro Sato*, *Satoru Ochiai*, **Japan**

## SESSION 3B

### *Ash*

Effects of Silica Fume on Strength and Microstructure Characteristics of a Municipal Sewage Sludge Ash as Supplementary Cementitious Material, *Xiaochao Tang*, Widener University, *Ian Nordfors*, Widener University, **USA**

Study on the Use of Post Processed MSWI Ash in Concrete and Mortar, *Grady Mathews IV*, Penn State Harrisburg, *Reem Alsinan*, Penn State Harrisburg, *Michael Young*, Penn State Harrisburg, **USA**

## SESSION 3C

### *Facilities Siting*

Identifying the Waste Potential and Optimizing the Location(s) for Waste-to-Value-Added Facilities to Generate Electricity in the State of Illinois, *USA*, *Mahdi Vaezi*, Northern Illinois University, *Veerendra Chowdary Chidipothu*, Northern Illinois University, **USA**

Municipal Solid Waste Disposal Site Selection of Panauti Municipality using GIS model, *Aanchal Khadka*, Central department of environmental science, Tribhuvan university, Kathmandu, Nepal, *Alka Sapkota*, Himalayan Whitehouse International College, **Nepal**

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

A Model to Compare Municipal Solid Waste Storage and Collection Systems, *Megan Cullison*, Widener University, *Olivia Weaver*, Widener University, *Christian Antisell*, Widener University, *Crystal Hershey*, *James Moreno*, *Serena Turco*, **USA**

## SESSION 3D

### *Case Studies*

Some Aspects of Household Food Waste Generation and Treatments Options: A Case Study of Mamelodi and Montana in the City of Tshwane Metropolitan Municipality in South Africa, *Morwesi Silvia Ramotse*, University of Johannesburg, *Isaac Tebogo Rampedi*, University of Johannesburg, **South Africa**

The Practices and Challenges for Municipal Solid Waste Management in Temeke Municipality, Dar Es Salam, Tanzani, *Ahmed Lubwama*, The Open University, Tanzania, **Tanzania**

Establishment of Eco-Solid Waste Management Park in Palompon, Leyte, Philippines, *Maribel Munsayac*, Environmental Management Bureau Region Office Viii, *Reggie Urmeneta*, Environmental Management Bureau Region Office Viii, **Philippines**

Characterization and Existing Practices of Solid Waste Management on Roadsides: A Case Study of Tribhuvan and Araniko Highways, Nepal, *Priyanka Aryal*, Central Department of Environmental Science, Tribhuvan University, Nepal, *Kedar Rijal*, Central Department of

Environmental Science, Tribhuvan University, Nepal, *Saroj Adhikari*, Central Department of Environmental Science, Tribhuvan University, Nepal, **Nepal**

Characterization and Existing Practices of Solid Waste Management on Roadsides: A Case Study of Tribhuvan and Araniko Highways, Nepal, *Priyanka Aryal*, Central Department of Environmental Science, Tribhuvan University, Nepal, *Kedar Rijal*, Central Department of Environmental Science, Tribhuvan University, Nepal, *Saroj Adhikari*, Central Department of Environmental Science, Tribhuvan University, Nepal, **Nepal**

Evaluation of Solid Waste Generation, Categories and Disposal Option in developing Countries: A case Study of Nigeria, *Augustine Oluwatoyin Ojo*, ABC Sanitation Solutions Ltd, **Nigeria**

Solid Waste Management in Liberia : The Case of Monrovia, *Margaret M. Beyslow*, Environmental Protection Agency of Liberia, *Abayomi Grant*, Environmental Protection Agency of Liberia, *Mark E. Tambah*, Prime Research Inc., **Liberia**

An Assessment of Solid Waste Management Practices:A Casestudy for East Delhi, India, *Dharav Singh Randhawa*, National Institute of Technology, Patna, *Aashna Kathpalia*, Jamia Millia Islamia, *Shailender Kumar Mandal*, National Institute Of Technology, Patna, **India**

### **SESSION 3E**

#### ***Environmental Assessment 1***

The Impact of the Maintenance Phase in a Life Cycle Assessment of Houses, *EneDir Ghisi*, Federal University of Santa Catarina, *Andrea Invidiata*, **Brazil**

Piecewise Nonlinear Regression: A statistical Method for the Analysis of Experimental Adsorption Data by the Intraparticle-Diffusion Models, *Mohammad Elkhairy*, Alexandria University, **Egypt**

Single-Use Plastics: How Prepared Are Ireland and the US for Sustainability? *Anita Zavodska*, Barry University, *Anne Morrissey*, **USA**

Research Needs for Resource Efficient Technologies, *Lakshmi Raghupathy*, Teri School of Advanced Studies, **India**

3:55 p.m. – 4:15 p.m.

**Break**

4:15 p.m. – 5:55 p.m.

**Sessions 4**

### **SESSION 4A**

#### ***Landfill 2***

Methanotrophic Methane Oxidation in New Biogeochemical Landfill Cover System, *Raksha Rai*, University of Illinois at Chicago, *Krishna Reddy*, University of Illinois at Chicago, **USA**

New Coupled Thermo-Hydro-Bio-Mechanical Model for Optimized Design and Operation of Bioreactor Landfills, *Girish Kumar*, University of Illinois at Chicago, *Krishna Reddy*, University of Illinois at Chicago, **USA**

Evaluation of Unsaturated Hydraulic Behavior of Evapotranspiration (ET) Cover through Field Instrumentation and Numerical Modeling, *Md Jobair Bin Alam*, University of Texas at Arlington, *Prabesh Bhandari*, University of Texas at Arlington, *Farnaz Seraj*, University of Texas at Arlington, **USA**

The Effect of Soil Type and Vegetation on Methane Oxidation Efficiency of Landfill Covers Under Wet and Dry Conditions, *Dinu Sankalpa Attalage*, University of Calgary, *Joseph Patrick Hettiaratchi*, University of Calgary, *Hiva Jalilzadeh*, University of Calgary, *Eranda Bartholomeuz*, **Canada**

Reactions Between Leachate and Possible Clay Types, *Ibrahim Adewuyi Oyediran*, University of Ibadan, Nigeria, *David Ayodele Olalusi*, University of Ibadan, Nigeria, **Nigeria**

Assesment of Impact Landfill Leachate on Groundwater Quality, *Saleh Al-Muzaini*, Kuwait Institute for Scientific Research, **Kuwait**

#### **SESSION 4B**

##### *Use of Wastes in Construction 2*

Portland Composite Cement: An Sustainable Product in Indian Scenario, *Bibekananda Mohapatra*, National Council for Cement & Building Materials, *Pravesh Kumar Sharma*, Ambuja Cements Ltd., *Varsha Liju*, National Council for Cement and Building Materials, *Sanjeev Chaturvedi*, National Council for Cement & Building Materials, **India**

Compressive Strengths of Concretes Containing Synthetic Lightweight Aggregate Made from Waste Materials, *Christopher Swan*, Tufts University, *Rory Buckman*, Tufts University, *Morgan McKiernan*, Tufts University, **USA**

Performance of Concrete with Recycled Plastic Waste for Flood Defence Barrier Systems, *Bahareh Kaveh*, Nottingham Trent University, *Hynda Aoun-Klalib*, Nottingham Trent University, *Tom Kemp*, Green consultants, **UK**

A Study on Performance of Pervious Concrete Pavement incorporating waste materials and its Life Cycle Cost Analysis: A Review, *Surya Kant Sahdeo*, IIT Roorkee, *G.D. Ransinchung R.N.*, IIT Roorkee, *Sumit Nandi*, IIT Roorkee, **India**

Effect of RAP on Characteristics of Flexible Pavements : A Review, *Kumari Monu*, Indian Institute of Technology, Roorkee, India, *G.D Ransinchung R.N.*, Indian Institute of Technology, Roorkee, India, **India**

The Economic Benefit and Health Hazards Inherent in Informal e-waste Management in Nigeria, *Augustine Oluwatoyin Ojo*, ABC Sanitation Solutions Ltd, **Nigeria**

Study of The Compressive Strength of Chb Using Pili (Canarium Ovatum) Shell As Partial

Replacement to Sand, *Manny Anthony Taguba*, National University, *Allan Alzona*, National University, **Philippines**

Experimental Validation of Optimized and Predicted Compressive Strength of Superplasticized Hair Fiber Reinforced Concrete Generated from Central Composite Design and Artificial Neural Network, *Franz Santos*, National University, *Manny Anthony Taguba*, National University, *Aiman Kamal*, National University, *Khaira Zarene Annani*, *Allan Alzona*, **Philippines**

#### **SESSION 4C** *Electronic Wastes*

Recovery Rare Earth and Synthesis of Perovskite Ndfe<sub>3</sub> Nanoparticles Based on Waste Permanent Magnet for Catalytic Application, *Hai Huynh Trung*, Hanoi University of Science and Technology, *Huy Pham Khanh Huy*, Hanoi University of Mining and Geology, **Vietnam**

E-Wastes Management in Nigeria: Challenges and Prospects, *Fatima Badiru Ibrahim*, Ahmadu Bello University Zaria, *Abubakar Ismail*, Ahmadu Bello University Zaria, **Nigeria**

Recycling and Recovery of Plastics from Waste Electrical and Electronic Equipments (WEEE) towards Value-added formulation, *Lakshmi Raghupathy*, Teri School of Advanced Studies, *Smita Mohanthy*, LARPM. CIPET, Bhubaneshwar, **India**

#### **SESSION 4D** *Plastics Wastes*

Plastic Waste Management and Public Health Concerns in Bangladesh, *Mohammad Habibur Rahman*, Buet and Dwasa, *Alauddin Ahmed*, ITN-Buet, **Bangladesh**

Effective Plastic Waste Management in Developing Nations, *Olufemi Oyedele*, Government of the State of Osun, **Nigeria**

A Sustainable Approach for Post-Consumer PET Bottles Recovery and Reduction in Nigeria, *Olaide Monsor Aderoju*, Department of Geo-sciences, Environmental Spatial Planning, Faculty of Sciences, University of Porto, *Antonio Guerner Dias*, Department of Geo-sciences, Environmental Spatial Planning, Faculty of Sciences, University of Porto, *Peter C Ekweozoh*, Department of Environmental Science & Technology, Federal Ministry of Science & Technology, *Iquo Offiong*, **Portugal**

Assessing the Feasibility of Deposit Refund System for Managing Household Plastic Waste in the Nhyiaeso Sub-Metro in the Kumasi Metropolis, Ghana, *Frimpong Obeng*, Indian Institute of technology Hyderabad, *Shashidhar*, Indian Institute of technology Hyderabad, **Ghana**

Zero Plastics – The Plastics Chemistry, *Lakshmi Raghupathy*, Teri School of Advanced Studies, **India**

**SESSION 4E**  
***Contaminated Sites 1***

Identification of Metal Tolerant Plant Species for Sustainable Phytomanagement of Bauxite Residue Dumps, *Meenu Gautam*, Institute of Science, Banaras Hindu University, Varanasi, *Madhoolika Agrawal*, Institute of Science, Banaras Hindu University, Varanasi, **India**

Assessment of Groundwater Quality around Municipal Solid Waste Dumpsite in Southwest Nigeria, *Adedayo Adekunle Badejo*, Federal University of Agriculture, Abeokuta, *Geoffery Nwosu*, Federal University of Agriculture, Abeokuta, *Shileola Akindoju*, Funaab, *Adekunle, A.A.*, **Nigeria**

Upward Electrokinetic Remediation (UEKR) for Contaminated Sediments with Heavy Metals, *Arulpoomalai A*, Indian Institute of technology Hyderabad, *Shashidhar T*, Indian Institute of technology Hyderabad, **India**

Upward Electrokinetic Remediation (UEKR) for Contaminated Sediments with Heavy Metals, *Arulpoomalai A*, Indian Institute of technology Hyderabad, *Shashidhar T*, Indian Institute of technology Hyderabad, **India**

6:00 p.m. – 7:00 p.m  
**Posters 1**

6:30 p.m. – 7:30 p.m  
**Reception**

**POSTER SESSION 1**

Alternatives for Red Mud Reuse in Civil Engineering Construction Materials after Environmental Accidents in Brazil, *Liseane Padilha Thives*, Federal University of Santa Catarina, *João Francisco Thives da Luz Fontes*, Federal University of Santa Catarina, *Mayara S.S. Lima*, Federal University of Santa Catarina, **Brazil**

Causes of Contamination of Soil, *Sevinc Hacıyeva*, BSU, *Elmina Gadirova*, BSU, *Emina Yolchuyeva*, BSU, **Azerbaijan**

Investigation of Solid Waste on the Difference of Surface Morphology of the Zn/Cu Based Electrodes Arum Leaf Extract Electrochemical Cell, *Md. Obaidullah Nayan*, Dr. Mahbubur Rahman Mollah College, *Md. Afzol Hossain*, Dr. Mahbubur Rahman Mollah College, **Bangladesh**

The Density of Matrices Made from Collagen Nanofibrils, *Gennaro Maffia*, Manhattan College, *Amanda Peterman*, Manhattan College, **USA**

An Assessment of Policy Related to Municipal Solid Waste Management in Botswana, *Daniel Mmerekhi*, Department for Management of Science and Technology Development, Ton Duc Thang University, *Kgosiesele Velepini*, University of Botswana, *Larona Mosime-Serero*, Botswana Qualification Authority, **Vietnam**

Analysis of Selective Collect Program in East Side of São Paulo/Brazil: an exploratory study, João Alexandre Paschoalin Filho, Universidade Nove de Julho, Eliana Gonçalves da Luz, Tatiana Tucunduva Philippi Cortese, Univerersidade Nove de Julho, Ana Cristina de Faria, Antônio Jose Guerner Dias, **Brazil**

Enhanced Biogas Production from Fecal Sludge by Trace Metal Supplementation, Bikash Adhikari, Kathmandu University, Sampada Dhungana, Kathmandu University, **Nepal**

Mechanical Behavior of a Reinforced Clay Soil with Açaí (Euterpe oleracea) Fibers, Matheus Machado Lopes, Universidade de Brasília, Victória Gomes de Oliveira, Universidade de Brasília, Michéle Dal Toé Casagrande, Universidade de Brasília, **Brazil**

Solid Waste Environmental Impact in Yemen, Ahmed ALGabal, Ministry of Water & Environment, **Yemen**

Analysis of the Compressive Strength by the addition of Cement for Different Types of Iron Ore Tailings, Matheus Machado Lopes, Universidade de Brasília, Thaís Guimarães dos Santos, André Augusto Nóbrega Dantas, Gabriel da Cunha Cotrim, **Brazil**

Effect of the Amount of Moisture on the Performance of Fly Ash Produced from a Power Plant for CO<sub>2</sub> Capture, Wooteck Kwon, Korea Institute of Ceramic Engineering & Technology, Jung Hyun Kim, Korea Institute of Ceramic Engineering & Technology, Won-seok Chang, Korea District Heating Corp., Mun-sei Oh, Seon-young Cho, Seong-yong Park, **Rep. of Korea**

A Viable Mechanical-Biological Waste Treatment Technology, Glen Tobiason, Zweckverband Abfallbehandlung Kahlenberg, **Germany**

The Reuse of Waste in the Brazilian Construction Industry, Marianne do Rocio de Mello Maron da Costa, Federal University of Paraná, Luiz Felipe Cordeiro, Federal University of Paraná, Michael Isaac Gabriel Santos, University of São Paulo / Straton Public Policies Management Consulting, Marisa, Soares, Borges, **Brazil**

## **TUESDAY, APRIL 2**

8:00 a.m. - 5:30 p.m.  
Conference check-in and registration

8:00 a.m. – 8:30 a.m.  
Coffee

9:00 a.m. - 10:20 a.m.  
**Sessions 5**



**SESSION 5A**  
***Waste Collection***

An Optimal Solid Waste Collection Fee Based on Area Characteristics Using Hedonic Pricing Approach, *Komwit Siritorn*, Songkhla Rajabhat University, *Chompoonuh K. Permpoonwiwat*, Srinakharinwirot University, **Thailand**

Development of Linear Optimization Model for Dry Waste Collection Center at Bangalore City, INDIA, *Prakash Gowdra*, Ramaiah Institute of Technology, *Vivekanand Venkataraman*, Ramaiah Institute of Technology, *Judith Krupa*, Hirepro Consulting, *Joel John Koshy*, *Mohammed Sharukh*, *Bharath Reddy Mandara*, **India**

Geoprocessing Tool for Location of Partially-Burried Containers for Point-to-Point Municipal Solid Waste Collection on Administrative Regions with Sanitation Deficit and Low Income in Brasilia, Brazil, *Camila Lopes dos Santos*, Urban Cleaning Service of the Federal District (SLU/DF), *Victor Silva*, University of Brasilia, *Francisco Contreras*, University of Brasilia, *Caio Dias*, **Brazil**

Linear Programming for Municipal Solid Waste Transportation Routes Optimization and Reduction of Environmental Impacts in Brasilia, Brazil, *Victor Silva*, University of Brasilia, *Camila Santos*, Urban Cleaning Service of the Federal District, *Francisco Contreras*, University of Brasilia, *Caio Dias*, **Brazil**

**SESSION 5B**  
***Landfill 3***

Insight into a Full Scale landfill Mining and Remediation Project, *Kaur-Mikk Pehme*, Estonian University of Life Sciences, *Mait Kriipsalu*, Estonian University of Life Sciences, **Estonia**

Effect of Closed Municipal Solid Waste (MSW) Landfill on Surrounding Water Bodies, *Lokeshwari M*, R.V.College Of Engineering, *Tanay N Bysani*, R.V. College Of Engineering, *Nanjunda Swamy C*, Dr. Ambedkar Institute of Technology, **India**

Seismic Response of Clay Liner -A Pseudo Static Approach, *Sukhmander Singh*, Indian Institute of Technology Roorkee, *Sudipta*, Indian Institute of Technology Roorkee, **United States**

The Inhibitory Effects of Ammonia on Biogas Production, *Majid Sartaj*, University of Ottawa, **Canada**

**SESSION 5C**  
***Policy, Economics and Management***

Smart City Development: A Step towards Solid Waste Management and Sustainable Development, *Anaya Ghosh*, National Institute of Technology, Durgapur, *Sadhan Kumar Ghosh*, Jadavpur University, **India**

A Situational Analysis of Municipal Solid Waste Management Practices in Sara-i-Alamgir City, Pakistan, *Khalid Iqbal*, University of Gujrat, Office of Research, Innovation and Commercialization (ORIC), *Muhammad Ali*, King Abdullah University of Science and Technology, Saudi Arabia, **Pakistan**

Municipal Solid Waste Characterization and Management Techniques In India, *Arshad Husain*, Aligarh Muslim University, *Iram Javed*, Aligarh Muslim University, **India**

How the Commodities Recovery and the Restoration/Disaster Industries Can Work Closer Together for Expanded Business Opportunities, *Stephen Baruch*, The Baruch Group, *Jason Teliszczak*, JTEEnvironmental Consulting Inc., **USA**

Integrated Waste Management through Symbiotic Culture, A Holistic Approach, *Atun Roy Choudhury*, Ramky Enviro Engineers Ltd., *Srinivas K*, Ramky Enviro Engineers Ltd., *Arutchelvan V*, Annamalai University, *Mr. R.M. Goutham*, **India**

Life Cycle Assessment of Alternatives to Reduce the Environmental Impact of Brasilia's Municipal Solid Waste, *Victor Silva*, University of Brasilia, *Francisco Contreras*, University of Brasilia, *Camila Santos*, Brasilia's Urban Cleaning Service, **Brazil**

Analysis of Policy and Regulations Gaps and their Implications on the Application of source separation of Municipal Solid Waste in Kenya, *Philip Wangia*, Kenyatta University, *Michael Koach*, Kenyatta University, **Kenya**

EPA Updates on Sustainable Materials Management Program, *David Iacono*, US EPA Mid-Atlantic, **USA**

#### **SESSION 5D** ***Tire/Rubber Wastes***

Utilization of Scrap Tires and Waste Oil as Supplementary Fuels in Cement Production, *Gizem Eker*, Uludag University, *Vedat Pinarli*, Uludag University, **Turkey**

Recycled Tires: 10 Green Innovative Solutions for Common Civil and Geo-Technical Problems, *Monte Niemi*, TDA Manufacturing, **USA**

After 10 Years Implementation of the Environmental Legislation about Scrap Tires Disposal, What Has Changed in Brazil, *Liseane Padilha Thives*, Federal University of Santa Catarina, *EneDir Ghisi*, Federal University of Santa Catarina, *Gabriela Hammes*, Federal University of Santa Catarina, *Yuri Mello Muller de Oliveira*, **Brazil**

National Tyre/Rubber Recycling Stewardship in Nigeria: The Case of Recycling of Plastic/Tyre Materials to Diesel Fuel in Aba, Abia State of Nigeria, *Iheanyichukwu Innocent Chinyere*, Abia State Polytechnic, *Collins Ogechukwu Ike*, Abia State Polytechnic, **Nigeria**

#### **SESSION 5E** ***Health Care Wastes***

Practices and Challenges of Health Care Risk Waste Management in Thulamela Local Municipality, *Priscilla Pfunzo Nematenda*, University of Venda, *Comfort Foluke Olaniyi*,

University of Venda, *Jason Ogola*, University, *Dr Ntavhanyedzeleni Viginia Mudau*, **South Africa**

The Discarded Pharmaceuticals in Municipal Solid Wastes, *Huan-Jung Fan*, Hungkuang University, *Teng-Tsung Hsieh*, Hungkuang University, *Eiji Furuya*, Meiji University, Kawasaki, *Da Tian Chang*, **Taiwan**

10:20 a.m. – 10:50 a.m.

**Break**

10:50 a.m. – 12:35 p.m.

**Sessions 6**

## **SESSION 6A**

### ***Environmental Assessment 2***

Monitoring the Effects of Industrial Solid Waste Amendments in Agricultural Soil through Morphological and Histological Markers Identified in Certain Tropical and Exotic Earthworms, *Suryasikha Samal*, Orissa University of Agriculture and Technology, **India**

Evaluating Potentialities of Certain Biochemical Markers in Tropical and Exotic Earthworms in Monitoring the Effects of Phosphogypsum and Paper Mill Sludge Used as Soil Amendments in Agricultural Fields, *C.S.K. Mishra*, Orissa University of Agriculture and Technology, **India**

Drinking and Domestic water Use Near an Open Dumpsite in a Peri-urban Community, *Olubunmi Mokuolu*, University of Ilorin, *Ifeoluwa Olaniyi*, University of Ilorin, **Nigeria**

A Pilot Study on EIA Report Quality in the Management and Recycling of Proposed Hazardous Waste Management Projects in The Gauteng Province of South Africa, *Willem Abraham Foord Ceronio*, University of Johannesburg, *Isaac Tebogo Rampedi*, University of Johannesburg, **South Africa**

Dispersion of Heavy Metals from Tshikondeni Exxaro Coal Dump, Limpopo Province, South Africa, *Phumudzo Gift Munyai*, University of Venda, *Jason Samuel Ogola*, University of Venda, *Lufuno Reginald Kone*, University of Venda, **South Africa**

Solid Waste Environmental Impact in Yemen, *Ahmed ALGabal*, Ministry of Water & Environment, **Yemen**

The Nature, Scourge, Hazards and Public Health Implications of Solid Wastes Menace in Africa, *Maria Adaku Obi*, National Hospital Abuja, **Nigeria**

Energy and Climate Impact Assessment of Municipal Solid Waste in Pakistan, *Syeda Adila Batool*, University of the Punjab, *Noor Zahra*, **Pakistan**

Linear Mathematical Model in Solid Waste Management: Case Study of Manila City, *Manny Anthony Taguba*, National University, *Noe Bonga*, National University, *Jordy Midel, Jr.*, National University, *Allan Alzona*, *Edgardo Mendoza Jr.*, *Ma.Lourdes Nadonga*, *Fritz Guevarra*, **Philippines**

**SESSION 6B**  
***Biochemical Treatment***

Solid Waste Management by Chemical and Biochemical Treatment, *Ashok Kumar Jha*,  
University Department of Chemistry, T. M. Bhagalpur University, Bhagalpur, **India**

A Genetic Programming Model for Forecasting Yield and LHV of Syn-Gas Generated via Gasification of MSW in a Fluidised Bed Gasifier, *Anaya Ghosh*, National Institute of Technology, Durgapur, *Biswajit Debnath*, Jadavpur University, *Sadhan Kumar Ghosh*, Jadavpur University, **India**

Enhanced Biogas Production from Fecal Sludge by Trace Metal Supplementation, *Bikash Adhikari*, Kathmandu University, *Sampada Dhungana*, Kathmandu University, **Nepal**

Black Soldier Fly Larvae for Treating Mixed Unsegregated Municipal Solid Waste, *Debasree Purkayastha*, Indian Institute of Technology Roorkee, *Sudipta Sarkar*, Indian Institute of Technology Roorkee, **India**

Black Soldier Fly Larvae for Treating Mixed Unsegregated Municipal Solid Waste, *Debasree Purkayastha*, Indian Institute of Technology Roorkee, *Sudipta Sarkar*, Indian Institute of Technology Roorkee, **India**

A Viable Mechanical-Biological Waste Treatment Technology, *Glen Tobiasson*, Zweckverband Abfallbehandlung Kahlenberg, **Germany**

Development of Sustainable Nutrient Recovering Techniques from Wastewater, *Emma Leeds*, Lafayette College, *Yue Wu*, Lafayette College, *Angie Orellana*, Lafayette College, **USA**

**SESSION 6C**  
***Contaminated Sites 2***

The Next Frontier on PFAS Contamination, Sediment, Surface Water and Fish Tissue, *Harry Behzadi*, SGS, **USA**

The Role of Lipopeptide Biosurfactant on Microbial Remediation of Aged Polycyclic Aromatic Hydrocarbons (PAHs)-Contaminated Soil, *Fisseha Andualem Bezza*, University of Pretoria, *Evans MN Chirwa*, University of Pretoria, **South Africa**

Desorption kinetics of polycyclic aromatic hydrocarbons (PAHs) from contaminated soil and the effect of biosurfactant supplementation on the rapidly desorbing fractions, *Fisseha Andualem Bezza*, University of Pretoria, *Evans MN Chirwa*, University of Pretoria, **South Africa**

**SESSION 6D**  
***Special Wastes***

Investigation through Pareto followed by Ishikawa Analysis for Low Accuracy Product in Turning Operation- A Case Study, *Dipak Ranjan Jana*, Jis College Of Engineering, **India**

Safe Removal and Disposal Procedures of Asbestos Containing Waste In Italy, *Sergio Bellagamba*, Italian Institute for Insurance against Accidents at Work, *Federica Paglietti*, Italian Institute for Insurance against Accidents at Work, *Sergio Malinconico*, Italian Institute for Insurance against Accidents at Work, *Beatrice Conestabile Della Staffa*, *Ivano Lonigro*, *Paolo De Simone*, **Italy**

Utilization of Jarosite in Precast Concrete Paver Blocks, *Sumit Nandi*, Indian Institute of Technology Roorkee (IITR), *G. D. Ransinchung R. N.*, Indian Institute of Technology Roorkee (IITR), *Surya Kant Sahdeo*, Indian Institute of Technology Roorkee (IITR), **India**

Analysis of the Compressive Strength by the addition of Cement for Different Types of Iron Ore Tailings, *Matheus Machado Lopes*, Universidade de Brasília, *Thaís Guimarães dos Santos*, *André Augusto Nóbrega Dantas*, *Gabriel da Cunha Cotrim*, **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**

The Density of Matrices Made from Collagen Nanofibrils, *Gennaro Maffia*, Manhattan College, *Amanda Peterman*, Manhattan College, **USA**

Waste Free Drilling and Oil Production, *Herbert Hofstaetter*, Montanuniversitaet Leoben, *Clemens Holzer*, Montanuniversitaet Leoben, **Austria**

Impact of Aquaculture Waste on Receiving Streams, *Bolaji Sule*, University of Ilorin, *Olayemi Olanlokun*, University of Ilorin, *Gbemi Oladipupo*, Aseda Private School of Science, Ibadan, Nigeria, **Nigeria**

**SESSION 6E**  
***Sludge***

Hydrodynamic Assessment of Up-flow Anaerobic Sludge Solid-State Reactor: CFD and Experimental Validation, *Vigueras-Carmona Sergio Esteban*, Tecnológico de Estudios Superiores de Ecatepec, *Montes-Garcia María Monserrat*, Tecnológico de Estudios Superiores de Ecatepec, *Yañez-Varela Juan Antonio*, Universidad Autónoma Metropolitana- Azcapotzalco, **México**

Estimation of Specific Gravity of Solids for Organic Soils/Sludges to Be Used for Weight Volume Relations, *Dorairaja Raghu*, NJIT, *Swamy Basim*, Central Connecticut State University, **USA**

Effect of Anaerobic Digestion Temperature on Sludge Quality, *Getachew Dagnew/Gebreeyessus*, Kotebe Metropolitan University, **Ethiopia**

Mineralogical characterization of sewage sludge for use as raw material in civil construction, *Maria Ingunza*, Federal University of Rio Grande do Norte-UFRN, *Luis Yermán*, The University of Queensland, *David Williams*, The University of Queensland, **Brazil**

12:35 p.m. – 1:35 p.m.  
**Poster Session 2**

## **POSTER SESSION 2**

Office Waste Management Optimized: How A Centralized Waste Bin System Can Reduce Operating Costs and Enhance Your Organization's Sustainability Credentials, *P. Richard Cook*, Great Forest, Inc., **USA**

Infectious Medical Waste Management: a General Perspective and Issues in Kathmandu Valley of Nepal, *Manoj Bista*, Clean Environment Nepal (CEN) Pvt. Ltd., *Dhruba Baduwal*, Environmentalist Association of Nepal(EAN), **Nepal**

Removal of Nitrogenous Contaminants Present in Diesel Using a Sample of Catalyst Production Residue, *Marco Figueiredo*, State University of Rio de Janeiro, *Luana Baia*, State University of Rio de Janeiro, *Wallace Carvalho*, State University of Rio de Janeiro, *Juliana P. S.Leitão*, *Fábio A. C.Silva*, **Brazil**

Performance Evaluation of Construction and Demolition Debris as Substitute for Aggregate in Portland Concrete, *Claude Villiers*, Florida Gulf Coast University, **USA**

Fate, Disposal and Handling of Medicinal Waste in India- A Case Study, *Jiya Phoghat*, Guru Jambheshwar University of Science & Technology, *Rekha Singh*, University of virginia, *Tony Singh*, University of Virginia, **India**

Pakistan's First Integrated Resource Recovery Center, *Syed Sheraz Ali Shah*, UN-Habitat, **Pakistan**

How the Commodities Recovery and the Restoration/Disaster Industries Can Work Closer Together for Expanded Business Opportunities, *Stephen Baruch*, The Baruch Group, *Jason Teliszczak*, JTEEnvironmental Consulting Inc., **USA**

Analysis of the Permanent Deformation and Loss by Induced Moisture in Asphaltic Mixtures of the Hma Type, Using Recycled Aggregates of Construction and Demolition Waste, *Tayná Macêdo*, Federal University of Sergipe, *Victor Manuel de Queiroz Lourenço*, *Gardênia Rocha Oliveira*, *Joelson Hora Costa*, **Brazil**

Recovery Rare Earth and Synthesis of Perovskite NdFeO<sub>3</sub> Nanoparticles Based on Waste Permanent Magnet for Catalytic Application, *Hai Huynh Trung*, Hanoi University of Science and Technology, *Huy Pham Khanh Huy*, Hanoi University of Mining and Geology, **Vietnam**

Recycled Tires: 10 Green Innovative Solutions for Common Civil and Geo-Technical Problems, *Monte Niemi*, TDA Manufacturing, **USA**

Life Cycle Assessment of Alternatives to Reduce the Environmental Impact of Brasilia's Municipal Solid Waste, *Victor Silva*, University of Brasilia, *Francisco Contreras*, University of Brasilia, *Camila Santos*, Brasilia's Urban Cleaning Service, **Brazil**

Evaluation of Swachh Bharat Mission Slogan on Solid Waste Management in India, *Ashootosh Mandpe*, Csir-National Environmental Engineering Research Institute (Csir-Neeri), Nagpur, *Sunil Kumar*, Csir-National Environmental Engineering Research Institute (Csir-Neeri), Nagpur, **India**

Geoprocessing Tool for Location of Partially-Buried Containers for Point-to-Point Municipal Solid Waste Collection on Administrative Regions with Sanitation Deficit and Low Income in Brasilia, Brazil, *Camila Lopes dos Santos*, Urban Cleaning Service of the Federal District (SLU/DF), *Victor Silva*, University of Brasilia, *Francisco Contreras*, University of Brasilia, *Caio Dias*, **Brazil**

Linear Programming for Municipal Solid Waste Transportation Routes Optimization and Reduction of Environmental Impacts in Brasilia, Brazil, *Victor Silva*, University of Brasilia, *Camila Santos*, Urban Cleaning Service of the Federal District, *Francisco Contreras*, University of Brasilia, *Caio Dias*, **Brazil**

Effect of RAP on Characteristics of Flexible Pavements : A Review, *Kumari Monu*, Indian Institute of Technology, Roorkee, India, *G.D Ransinchung R.N*, Indian Institute of Technology, Roorkee, India, **India**

Evaluation of Physical and Mechanical Parameters of Construction and Demolition Waste for Geotechnical Applications., *Jéssica Menezes*, Federal University of Sergipe, *Erinaldo Cavalcante*, Federal University of Sergipe, *Guilherme Bravo Almeida*, Federal University of Sergipe, **Brazil**

The Waste of Petrochemical and Oil Refining Industries, *Zenfira Agayeva*, Institute of Catalysis and Inorganic Chemistry of ANAS, **Azerbaijan**

National Tyre/Rubber Recycling Stewardship in Nigeria: The Case of Recycling of Plastic/Tyre Materials to Diesel Fuel in Aba, Abia State of Nigeria, *Iheanyichukwu Innocent Chinyere*, Abia State Polytechnic, *Collins Ogechukwu Ike*, Abia State Polytechnic, **Nigeria**

The Conversion and Re-Use of Solid Waste as Organic Fertilizer for Sustainable Development in Nigeria, *Chijioke C. Ikokwu*, Network for Sustainable Development Ltd/GTE, **Nigeria**

Effect of Pressure on the Surfactant Pretreatment of Wastewater Sludge to Maximize the Drainability, *Mohsen Taghavijelouidar*, Seoul National University, *Junboum Park*, Seoul National University, **South Korea**

The Local Governments and Their Roles in Solid Waste Management: Case Study of Abia State, Nigeria, *Ogechukwu Collins Ike*, Abia State Polytechnic, Aba, *Iheanyichukwu Innocent Chinyere*, Abia State Polytechnic, Aba, **Nigeria**

Power Law Parameters as Indicators of the Efficacy of Collagen Dispersions in Environmental Remediation, *Xufang( Katie) Liu*, Manhattan College, *Gennaro (Jerry) Maffia*, Manhattan College, **USA**

Effects of Fly Ash Addition on the Rheological Behaviour of Red Mud Slurry, *Maria P.D. Ingunza*, Federal University of Rio Grande do Norte (UFRN), *David Williams*, The University of Queensland, *Sebastian Q. Olaya*, The University of Queensland, **Brazil**

1:35 p.m. – 2:35 p.m.

**Luncheon**

2:35 p.m. – 4:25 p.m.

**Sessions 7**

## **SESSION 7A**

### ***Case Studies 2***

Environmental, Health and Social Impacts of Dumping and Burning of Municipal Solid Waste in SA, *Roberts H.A.*, Central University of Technology, Free State, **South Africa**

The Local Governments and Their Roles in Solid Waste Management: Case Study of Abia State, Nigeria, *Ogechukwu Collins Ike*, Abia State Polytechnic, Aba, *Iheanyichukwu Innocent Chinyere*, Abia State Polytechnic, Aba, **Nigeria**

Consulting Support and Automatization as the Basic for the Eco-Industrial Park's Development in Russia, *Dmitry Yaroslavtsev*, RWTH Aachen University Department of Processing and Recycling, *Alexander Liubarskaia*, RWTH Aachen University Department of Processing and Recycling, **Russia**

Tracking the Movement of Waste and its Environmental Impact: An Institutional Case Study, *Patrick Caton*, US Naval Academy, *Howard Ernst*, US Naval Academy, *Karen Flack*, US Naval Academy, *Prof. Joseph Smith*, *Prof. Kurtis Swope*, **USA**

Waste Characterisation Studies of Dipaleseng Local Municipality and Victor Khanye Local Municipality, Mpumalanga Province, South Africa, *Chucheka Lawrence Tivani*, Department of Environmental Affairs, **South Africa**

Integrated Waste Management in India, *Lakshmi Raghupathy*, Teri School of Advanced Studies, **India**



**SESSION 7B**  
***Special Wastes 2***

Waste Free Drilling and Oil Production, *Herbert Hofstaetter*, Montanuniversitaet Leoben,  
*Clemens Holzer*, Montanuniversitaet Leoben, **Austria**

The Conversion and Re-Use of Solid Waste as Organic Fertilizer for Sustainable Development in Nigeria, *Chijioke C. Ikokwu*, Network for Sustainable Development Ltd/GTE, **Nigeria**

Power Law Parameters as Indicators of the Efficacy of Collagen Dispersions in Environmental Remediation, *Xufang( Katie) Liu*, Manhattan College, *Gennaro( Jerry) Maffia*, Manhattan College, **USA**

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

**SESSION 7C**  
***Use of Wastes in Construction 3***

Gold Mine Tailings as a Construction Material: A Case Study of the Klein Letaba Gold Tailings Dam, Limpopo Province, South Africa, *Ndivhuwo Nemapate*, University of Venda, **South Africa**

Compressive Strengths of Concretes Containing Synthetic Lightweight Aggregate Made from Waste Materials, *Christopher Swan*, Tufts University, **USA**

5:00 p.m. – 6:00 p.m.  
**Closing Reception**

**WEDNESDAY APRIL 3**

8:00 a.m. – 9:00 a.m.  
Conference check-in and registration

8:00 a.m. – 9:00 a.m.  
Coffee

### **Field Trip 1 - Landfill and Energy-From Waste**

**Facility 1: The Quarantine Road Landfill**, the only municipal landfill in Baltimore City, covers 125 acres and accepts annually approximately 330,000 tons of mixed waste and recycling. It is owned and operated by the City, and is an essential component of the solid waste program. The landfill currently accepts municipal solid waste, ash from solid waste combustion at the Wheelabrator waste-to-energy facility, industrial waste, City-owned wastewater treatment plant screenings and grit, and City-owned water and wastewater treatment plant residues. It also includes a recycling station that accepts: single-stream recycling, electronics, waste oil, antifreeze, tires, scrap metal and white goods. Of special note is the Methane Gas Collection System. The gas is transported and sold to the nearby United States Coast Guard facility which uses it to meet its federal mandates. The City is currently in the permitting process to expand the landfill. In addition, the Department of Public Works is currently conducting a master planning effort to identify options for improving solid waste diversion, recycling, and disposal in the City, known as “Less Waste, Better Baltimore.”

**Facility 2: THE WHEELABRATOR BALTIMORE energy-from-waste facility** uses up to 2,250 tons of postrecycled everyday waste from Baltimore area homes and businesses as a local, sustainable fuel to generate as much as 64 MW of clean, renewable electricity for sale to the local utility — the equivalent of supplying the electrical needs of 40,000 Maryland homes as well as its own operations.

The plant provides steam to the downtown heating loop — which serves more than 255 businesses including M&T Bank Stadium, home of the Baltimore Ravens — in addition to providing power to thousands of Baltimore-area homes, using local waste as fuel to create a local-energy ecosystem that recycles metals, provides power, reduces the need for landfill, and lowers CO<sub>2</sub> emissions.

### **Field Trip 2 - Marine Litter Prevention**

In Baltimore City the health of the harbor is of high importance. The Department of Public Works has several programs focused on preventing trash, sediment, and other pollutants from entering the waterways. Partnerships with non-profit and community partners is an important part of the strategy. This tour, which is a collaboration between the Department of Public Works, Bmore Beautiful, and the Waterfront Partnership, will focus on preventing litter from entering the harbor. This is a bus tour of multiple sites in the city with the theme of keeping trash out of the waterways and harbor. The first stops focus on upstream litter prevention strategies, including municipal trashcans, stormwater inlet screens, a street sweeper in action, and neighborhood beautification. The tour will then continue to the harbor to view Mr. Trash Wheel and litter collection boats (skimmers). Also of note, the Department of Public Works is currently conducting a master planning effort to identify options for improving solid waste diversion, recycling, and disposal in the City, known as “Less Waste, Better Baltimore.”