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11th World Congress and Expo on

Recycling

June 13-14, 2019
Edinburgh, Scotland



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11th World Congress and Expo on

Recycling

June 13-14, 2019 Edinburgh, Scotland

DATE & VENUE

AGENDA

Title: Opportunities for recycling and reuse of FRP composites for construction in a circular economy

Lawrence C Bank
City University of
New York, USA

Sustainability and green engineering have evolved into a more comprehensive framework known as the Circular Economy. The importance to this shift in thinking to the FRP composites for construction industry will be discussed. The aerospace and automotive sectors of the composites industry are moving rapidly to embrace the circular economy concepts such as design for reuse, adaptability, modularity, recycling, reclamation, life cycle assessment, materials flow analysis and industrial ecology.

Technological advances in resource recovery and recycling

Brajendra Mishra
NSF Center for Resource
Recovery & Recycling,
USA

Metals and materials production from primary sources, such as ore, are highly energy intensive, expensive and environmentally unfriendly. Materials are non-renewable and, therefore, their supply is limited. Post-consumer as well as manufacturing wastes are valuable secondary resources. Most structural and functional materials used today, can be reprocessed and put back into service at a much lower cost and energy consumption through conscious recycling and recovery programs.

Recycling and combating air pollution in Naryn

Shabnam S. Lutafali
University of Central Asia

Town of Naryn is a poster child for recycling and creating sustainable environment. In the last 10 years the town's population has grown from about 35,000 to 53,000 with little planning to address the population's needs for civic services including recycling and garbage collection. The problem is inflamed by open garbage burning; some garbage (batteries etc.) is poisonous, and when burnt, emit poisons in the atmosphere. Additionally, the coal burning power plant further pollutes the environment. This has negative health consequences for citizens.

SPEAKER SLOTS AVAILABLE

Investigation of biogas generation from of a vegetable and cattle market of Bangladesh under daily feed condition

Md. Abdul Jalil
Bangladesh University of
Engineering &
Technology (BUET)

The results of two sets of laboratory experiments on biogas generation from the wastes of a rural vegetable and cattle market of Bangladesh under daily feed condition at ambient temperature are reported in this paper. Only the easily biodegradable wastes were used as the feed for biogas production. Cow dung, fish waste, ginger, cursed lobe, guava, and banana leaf were found to be the major biodegradable wastes of the market. Daily average composition of the wastes was used in the experiments.

Rethinking recycling as an environmental solution and wider business for circular economy. The curitiba case study for C&D waste

BORGES,
Federal University of
Paraná,
Brazil

Earth's natural resources are finite and should be used in a rational and balanced way. To be environmentally sustainable, resources must be efficiently and effectively managed. In waste streams these can be repaired, recycled, reused. The recycling provides a link between reuse and mitigation of environmental problems saving resources and producing new products providing a win-win and wider solution that enables more efficient use of resources, stimulating the growth of economic and social development.

Sustainable waste management and effect of crucial external & Internal factors: A Comparative review of Malaysia, Indonesia and Singapore in accordance with the International law

Khalid Mehmood Shad,
University of Malaya,
Malaysia.

In Southeast Asia, waste issues are growing at a great pace. The annual waste increase with growing population and economic advancement, with rare sanitary landfill and recycling facilities, is enormous. Waste reduction, reuse, and recycling in developed nations, for example, Singapore have fundamentally intervened these issues, yet the developing countries, like Indonesia and Malaysia, are not still much concerned about its consequences.

SPEAKER SLOTS AVAILABLE

Process concept based on pyrolysis for integration of Shredder light fractions (SLF) in the recycling of waste electrical and electronic equipment.

Fabian Diaz
RWTH- Aachen
University,
Germany.

Yearly production of rest fractions like shredder light fractions (SLF) in the preconditioning of waste electric and electronic equipment (WEEE) accounts almost the 4.22% in a state of the art preprocessing company for this sort of wastes. This amount together with other shredder residues e.g. automobile recycling industry accounts the 4% of the total waste generated in Europe (2.5 billion tons)..

Solid wastes recycled, reused for the increased in the wealth management

Raagini Jaain
Geetanjali Envirotech,
India

Our rapid bioremediation process through the usage of GE bio-culture on fresh waste and old waste stabilizes the waste faster with 40% reduction in volume and with near-zero emission of harmful gases into the atmosphere and no leachate (A leachate is any liquid that, in the course of passing through matter, extracts soluble or suspended solids, or any other component of the material through which it has passed). The contamination of soil and groundwater from leachate is hence prevented.

Cost-benefit analysis of agricultural waste recycling in Taiwan

Esher Hsu
National Taipei
University,
Taiwan

Along with the development of circular economy, the waste recycling of agriculture in Taiwan has received much attention. Major recycling types of agricultural waste including energy recovery and compost which can not only reduce waste pollution, but also create economic benefits. However, the cost efficiency of agricultural waste recycling has been argued in Taiwan. This paper intends to evaluate the feasibility of recycling agricultural waste in Taiwan through cost-benefit analysis of different recycling types, and further provides policy suggestions of recycling.

SPEAKER SLOTS AVAILABLE

Recycling dredged sediment and potential energy harvest by nitrate induced biostimulation

Dickson Y.S. YAN,
THEi,
Hong Kong

Marine and river sediments have been subject to urban, industrial, agricultural and various anthropogenic contaminations. High concentration of nutrients and pollutants are often found, resulting in sticky sediment. One of the common practices to deal with the sediment in Hong Kong is regular dredging and followed up either marine dumping or landfill disposal depending on the contamination level of the sediment. Recycling sediment is not a common way, not until recent years.

Related Scientific Session: Reduce, Reuse, Recycle and Recovery

Filomena Compagno
Terracina Zero Waste
Committee, Italy

Terracina is a bath town of 46.000 inhabitants. In 2015 it became a Zero Waste Municipality with a Zero Waste Observatory. In the same year Terracina adopted the door-to-door collection reaching 59,17% of Recycling, while in 2016 it reached 73%, becoming the first “Comune Riciclone” of Latium. How was it possible to reach this important goal? It was possible because the local City Administration works together with citizens, local sanitation transfer station and associations, including our Zero Waste Committee.

Status of Solid Waste & Society in India: Challenges for Future

Jagbir Singh
University of Delhi,
India

India is rapidly shifting from agricultural-based nation to industrial and services-oriented country. About 31.2% population is now living in urban areas. As per census 2011, over 377 million urban people are living in 7,935 towns/cities. India is a vast country divided into 29 States and 7 Union Territories (UTs). There are three mega cities - Greater Mumbai, Delhi, and Kolkata—having population of more than 10 million, 53 cities have more than 1 million population, and 415 cities having population 100,000 or more.

SPEAKER SLOTS AVAILABLE

Evaluation and analysis of municipal solid wastes in Tehran, Iran

Mohammad Hadi,
Tehran University of Medical
Sciences (TUMS)

Waste management for municipal solid waste is considered a public health services, providing citizens with a system of disposing of their waste in an environmentally sound and economically feasible way. The amount and composition of waste generated comprise the basic information needed for the planning, operation and optimization of waste management systems. In this study, paper and plastic quantity changes in the MSW (municipal solid waste) of the region 10 of Tehran city were evaluated. This study was conducted in 6 months, in the summer and autumn seasons, at the region 10 of Tehran city.

Recycling aluminum chips derived from mechanical sawing by powder metallurgy techniques

Adriana Esguerra Arce
CIMSER,
Colombia

Statement of the Problem: A vast amount of resources are used in mining and refining virgin metals. This process poses environmental risks, due to the potential release of harmful substances into the soil, air, and water. Aside from this, metals are non-renewable resources, meaning that there is finite amount of them in the earth. Sawing is the most common technique used to break down metals before manufacturing processes, and it produces a considerable amount of wasted aluminium in form of chips. These chips are small and semi continuous, so they are not suitable for recycling by melting.

Reuse of duralumin chips by means of powder metallurgy

Johanna Esguerra Arce,
CIMSER,
Colombia

The extraction of metals has negative environmental effects, including emissions of carbon dioxide and hazardous gases, and the destruction of natural landscapes (Gaustad et al., 2012). The recycling of non-ferrous metals has a series of benefits, such as reducing the extraction of virgin minerals, thus preserving non-renewable resources. Machining is one of the processes used to manufacture engineering parts, with advantages such as good tolerances and excellent surface finishes. However, it is a process for removing material which produces waste products in the form of chips.

SPEAKER SLOTS AVAILABLE

Solid waste management: challenges and opportunities in Delhi

Virat Jolli,
University of Delhi,
India

Municipal solid waste (MSW) is poorly managed in India. It is a major problem of urban areas which affect quality of life. Delhi being a metropolitan city experience serious challenge to manage solid waste. Delhi generates approximately 9500 tonnes of waste per day, out of which only 80% of it is transported to designated landfill sites. Solid waste is comprised of recyclable and biodegradable waste material, if it is managed professionally; it can open avenues for recycling industry which has immense potential for employment generation.

Recycling and recyclability index for end-of-life jeeps

NOEMI TORRE,
University of Asia and the
Pacific,
Philippines

Each year, millions of motor vehicles reach their end-of-life. The Recyclability Index of End-of-Life of these vehicles is a rating system to quantify the recyclability and recovery of the vehicles. Through this measure, one can determine the environmental impact of the vehicle. The computation of which is elaborated in the ISO 22628 (International Organization for Standardization). The ISO, is a federation of national standards acknowledged worldwide.

A new recycling mode of WEEE under the background of "Internet +" in China

Li Peng
Xi'an University of
Technology,
China

With the technological innovation and market expansion, the update of electric and electronic equipment (EEE) is continuously accelerate. China is the largest emerging market region in the world with both global manufacturing and consuming market. Rapid economic growth, coupled with urbanization and growing demand for consumer, is expected to increase the consumption of EEE, thus increase the waste electric and electronic equipment (WEEE) rapidly in this region, posing a severe threat to the environment and sustainable economic growth.

SPEAKER SLOTS AVAILABLE

Industrial-based kinetic modelling of Scrap Tyre Pyrolysis through the Modified Chemical Percolation Devolatilization (M-CPD)

Vincent Tan
Monash University,
Australia

The disposal of waste tyres has been an inevitable problem around the world. Approximately 800 million used tyres are dumped annually, with a projected growth rate of 2%. Pyrolysis is as an attractive thermochemical technique for recycling the abundance of waste tyres while at the same time allowing energy fuel production.

Recycled eggshells and fish scales waste for the removal of inorganic contaminants from water

Morlu G. F. Stevens
Botswana International
University of Science and
Technology

Most inhabitants of urban and most especially rural areas in most part of Africa do not have access to the expensive conventional treatment technologies that are usually employed to purify water for use for household or daily purposes. This infers that their health is at risk as a result of possibly consuming or their animals, water that is contaminated with high concentration of inorganic contaminants.

Preparation of RDF plates to replace fossil fuels

Mehrdad Hadipour
University of Kharazmi,
Iran

Today, with increasing population and urban development, human need for consumables has increased. Consumption growth has led to production and disposal problems, due to the lack of suitable and suitable space for landfill and the release of pollutants such as greenhouse gases due to unconventional waste, to find better waste disposal facilities with less negative environmental impacts In addition, the issue of energy shortages is a matter of day, and the use of other energies, such as energy recovery, is considered as an alternative fuel.

Leaching process for recovery of base and precious metals from crushed waste printed circuit boards (WPCBs)

Nanthanat Sriprasert,
Maharakham University,
Thailand

This research aimed to study various factors that influenced on the efficiency of leaching process and to assess the optimum conditions to achieve the efficient leaching method for base and precious metals from crushed waste printed circuit boards (WPCBs). Electrolyte solution receiving from leaching approach aim to further be used for base and precious metals recovery or refining processes.

Use of grapevine pruning residues as a renewable energy solution, remedies heavy metal contaminated vineyard soils in Iran

Siamak Shirani
Bidabadi,
Plant Biotechnology and
Horticultural Sciences.

The heavy metal contamination in vineyard soils rises due to human activities and has become a noticeable environmental problem because it poses a serious threat not only to human health by entering into food chains, but also to environmental security by leaching into groundwater.

Recycling and utilisation of solid organic wastes in agriculture for sustainable environment

Prabhu Prasadini P,
ANGR Agricultural
University,
India

The solid waste produced in urban areas of India is approximately is about 62 million tonnes per year, and is expected to increase by 4% per year out of which nearly 50% of the total waste is organic (McKinsey Global Institute 2010). With landfills ranking third in terms of greenhouse gas emissions in India, the vision for waste management in India is the recycling and reuse of wastes as resources. Improper handling of solid wastes results in serious environmental pollution of soil, water and air. Proper waste management generates useful by-products and creates a circular economy.

Evaluation of the reduction of stabilization times of closed sites for the final disposal of Urban solid waste, through the recirculation of inoculated leachates.

**Dayanira Jovita
Gutiérrez Hernández,
National Autonomous
University of Mexico,
Mexico**

The garbage is disposed in a dump in the open air, is the most common way to eliminate municipal solid waste in Mexico, such is the case of the former ex drump called "Bordo Xochiaca" which has received more than 1,200 ton of municipal solid waste from Mexico city, who has operated since 1975, but in 2006 was definitely closed and sanitized, today this site is a mall and sport center.

Radiation degrading effects on butyl rubber compounds properties

**Sandra R. Scagliusi,
IPEN/CNEN,
Brazil**

The understanding of Chemistry involved in degradation induced radiation is becoming more and more relevant in re-use of polymerical materials, as well in beneficial radiation uses. Degrading radiation effects have been considered from viewpoint of controlled degradation for isoprene/isobutene in rubbers for recycling purposes. Butyl rubber (IIR) is an isobutylene/isoprene copolymer, with a lot of applications even in tires air-chambers.

Recycling of cellulosic waste to prepare construction materials

**Hugo Alberto
Quintero Navarro,
National Autonomous
University of Mexico,
Mexico**

During the manufacturing of paper products, waste is generated that requires proper reuse or recycling, among which is the sludge from its WWTPs composed mainly of cellulosic waste. The sludge consists of organic fibers, inorganic materials, and about 60% water. Daily production and the limited capacity of sanitary landfills cause social and environmental problems.

SPEAKER SLOTS AVAILABLE

Sustainable development and environment of biomass from agriculture residues

Abdeen Omer,
Energy Research Institute
(ERI),
UK

The demand for energy continued to outstrip supply and necessitated the development of biomass option. Residues were the most popular forms of renewable energy and currently biofuel production became much promising. Agricultural wastes contained high moisture content and could be decomposed easily by microbes. Agricultural wastes were abundantly available globally and could be converted to energy and useful chemicals by a number of microorganisms.

SPEAKER SLOTS AVAILABLE

08:30-09:00 **Registrations**

09:00-09:30 **Introduction**

09:30-09:50 COFFEE BREAK

09:50-11:50 Meeting Hall 01 **KEYNOTE LECTURES**

	MEETING HALL 01	MEETING HALL 02
11:50-13:10	Talks On: Solid Waste Management Paper Recycling Municipal solid waste Recycling Demolition waste Recycling	Talks On: Agriculture Waste Recycling Recycling Market Biodegradable waste Recycling Organic Waste Recycling

13:10-13:15 GROUP PHOTO

13:15-14:00 LUNCH BREAK

	MEETING HALL 01	MEETING HALL 02
14:00-16:00	Talks On: Waste Management Techniques Waste Water Recycling Commercial waste Recycling Hazardous waste management	Talks On: Plastic recycling Physical recycling Waste plastic pyrolysis to fuel oil Chemical recycling

16:00-16:20 COFFEE BREAK

MEETING HALL 01 (16:20-17:00)	MEETING HALL 01 (17:00-18:00)
Young Researchers in Recycling conference	Workshop

09:00-10:30
Meeting Hall 01

KEYNOTE LECTURES

10:30-10:50 COFFEE BREAK

	MEETING HALL 01	MEETING HALL 02
10:50-12:50	<p>Talks On: E-Waste Recycling And Management</p> <p>Electronic waste (e-waste) Recycling</p> <p>Radioactive waste</p> <p>Hazardous waste</p>	<p>Talks On: Home Waste Management</p> <p>Recycling: Eco-Balance</p> <p>Food waste Recycling</p> <p>Household waste Recycling</p>

12:50-13:35 LUNCH BREAK

	MEETING HALL 01	MEETING HALL 02
13:35-15:55	<p>Talks On: Metal Recycling</p> <p>Biomedical waste Recycling</p> <p>Marine debris Recycling</p> <p>Mineral waste Recycling</p>	<p>Talks On: Chemical Waste Recycling</p> <p>Sewage Treatment</p> <p>Inorganic waste Recycling</p> <p>Industrial waste treatment</p>

15:55-16:15 COFFEE BREAK

	MEETING HALL 01 (16:20-17:00)	MEETING HALL 01 (17:00-18:00)
	Poster Presentations for Recycling Conference	Workshop

Awards & Closing Ceremony

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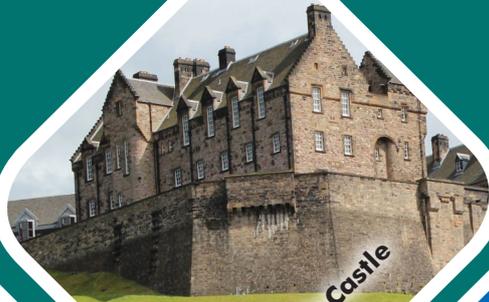
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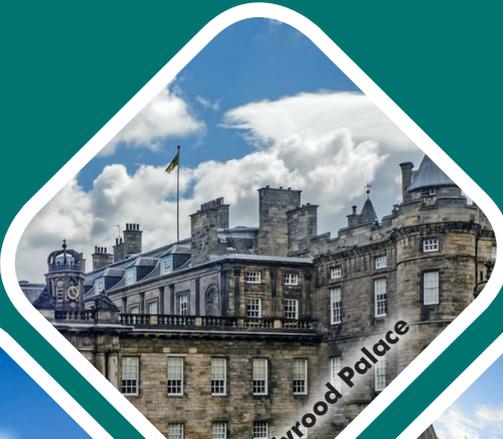
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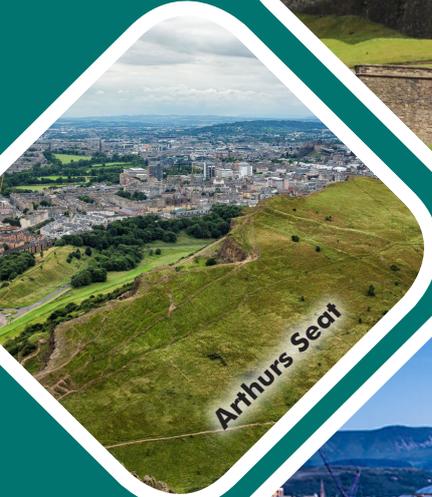
Edinburgh Attractions



Edinburgh Castle



Holyrood Palace



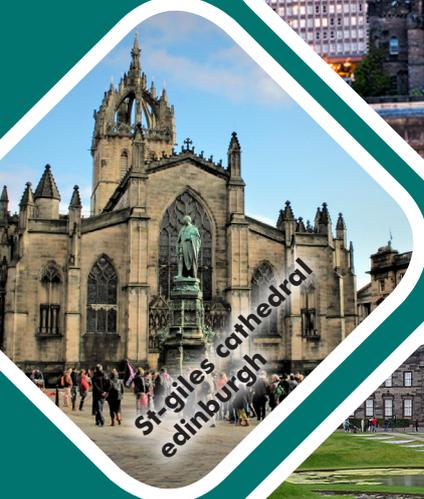
Arthur's Seat



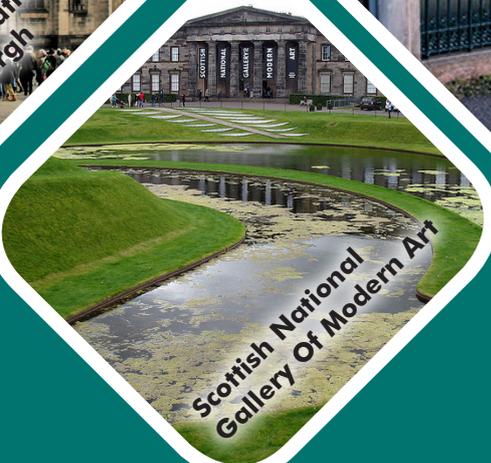
Calton Hill



Old Town



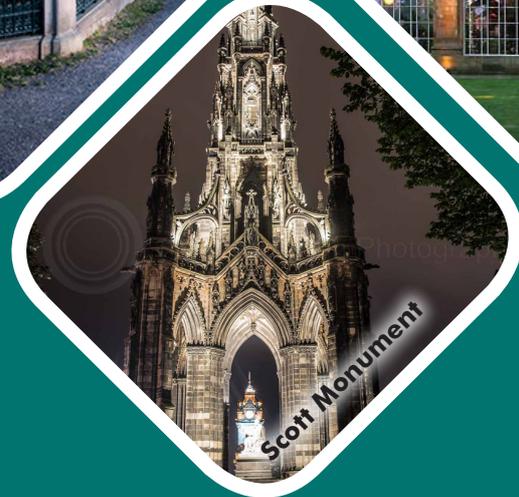
St Giles Cathedral
Edinburgh



Scottish National
Gallery of Modern Art



Royal Botanical
Garden



Scott Monument

GLIMPSES OF RECYCLING CONFERENCE 2018

