

**REPORT from ISWA 2011 WORLD CONGRESS  
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Dr. Efstratios Kalogirou from the Earth Engineering Center, Columbia University and the President of SYNERGIA (WTERT Greece) participated, in the successful **World Congress of International Solid Waste Association**, held between 17<sup>th</sup>&20<sup>th</sup> October 2011 in Daegu, Korea, with a total participation of around 600 participants from all over the world .

The Conference was co-organized by ISWA, Ministry of Environment of Korea, and Korea Society of Waste Management. Many Local companies like GS Caltex, Samsung, Posco, Sudokwow Landfill Site, Kowaste, Halla Energy & Environment sponsored the congress.

The Keynote speakers where Mr. Seung –Joon Yoon, President of Korea Environmental Industry and Technology Institute, Prof. Hiroshi Takatsuki from Kyoto University of Japan, Mr. Choudhury Rudra Mohany from UN DESA and Mr. Charitha Herath, Chairman in Central Environment Authority of Sri Lanka. More than 400 oral presentations in four parallel sessions in 3 days and 250 posters where presented in the scientific fields of Waste Collection & Transport, Climate Change & Waste Prevention , Innovative ideas for Recycling, Practises and Challenges of 3Rs, Advanced Thermal Treatment and Waste to Energy, MBT, Hazardous Waste, E-waste Landfill, etc.

Dr. Kalogirou started the Advanced Thermal Treatment and Energy Recovery session, Waste and presented the common presentation with Professor Nickolas Themelis and Mrs. Yoonjung Seo entitled : **«The Global WTERT Council & WTE in the Republic of Korea»**. He also co-chaired 2 waste to energy sessions.

In brief the Global WTERT Council (GWC) is currently formed. It will assist in the creation of new WTERT national organizations and coordinate the activities of existing ones in achieving the common goal:

- to identify the best available technologies for the treatment of various waste materials
- to conduct additional academic research as required
- and to disseminate this information by means of publications, the multilingual WTERT web pages, and periodic meetings and conferences, at the national and international levels.

GWC will consist of the heads of the national WTER organizations. Its first meeting will be held in conjunction with the next WTER-U.S. bi-annual meeting at Columbia University (October 18-19, 2012). Only 19% of the MSW of the Republic of Korea is landfilled. This country has now the 3rd most sustainable waste management in Asia (after Japan and Singapore).

Among the most interesting presentations were from Mr. Soon-Mo Hwang from GS Platech, Korea, "*Hydrogen Production – Fuel Cell Power by Plasma Gasification of Municipal Solid Waste*", Mr. Jorgen Haukohl from Ramboll, "*Energy and Greenhouse gas balances of solid waste incineration*", Mr. Daisuke Saku from Japan, "*Application of the advanced technology to Waste to energy plant in China*", Mr. Edmund Fleck, from Martin GmbH, "*Enhanced Use of Energy and recycling of rest Products in Waste To Energy Plants*", Mr. Ole Hedegaard Madsen, from Babcock Willcox & Volund, "*A new concept to improve the electrical efficiency based on the combustion process in the waste fuel bed on a grate*", Mr. Athanasios Bourtsalas from Imperial College, "*Waste Management in Greece and China and Potential for Waste to Energy*", Mrs. Bettina Kamuk, from Ramboll, "*How to get the public acceptance when locating a WTE facility, A case of Copenhagen*", Mr. Katsuya Kamamoto, from Japan, "*Energy from Waste, Technologies & Policy*", Prof. Paul Brunner from Austria, "*Final Sinks as a Necessary Element of sustainable waste management*", etc.

Also Dr. Kalogirou contacted the sister WTER/Korea Organization, which is under establishment, and discussed all details of cooperation via the Global WTER Council. The WTER/Korea Chairman is Professor Seo, Yong-Chil, from Yonsei University of Korea (Department of Environmental Engineering). He is the coordinator also of the Governmental Human Resource Development Project for Energy from Waste & Recycling.

### **A Technical Tour in GS Platech took place on 20<sup>th</sup> October.**

The pilot plasma Gasification & Vitrification (PGV) plant, has a capacity of 10 tpd of as received MSW and is located in Cheongsong (8000 hours of annual operation, since January 2009). The technology is based in plasma torch system and produces synthetic gas for various applications like high purity (20m<sup>3</sup>/hr, 99.9999%) hydrogen, or alternatively Diesel, power, ethanol, steam. It is the first hollow cathode plasma torch in Korea. Non – Transferred Plasma Torch (200kWx2 units) and cyclonic plasma gasification and vitrification technology, produces 50 kW fuel cell power. The CAPEX was 3 million USD and the operational cost around 200 USD/ton. The furnace temperature is 1430 C, pressure -10 mmH<sub>2</sub>O (-0.1 bar) and temperature in post combustion Chamber is 920C.

Finally the company plan to develop on 2012, an 110 tpa PVG Plant with feed Refused Plastic Fuel (RPF), in order to supply heat and steam in vicinities through CHP generation

Below some indicative photos of the event:



Picture 1. Dr. Kalogirou in EXCO Congress Venue, Korea



Picture 2. Dr. Kalogirou and Mr. Bourtsalas in GS Plotech



Picture 3. Presentation of Dr. Kalogirou



Picture 4. Presentation of Mr. Soon-Mo Hwang from GS Plotech,



Picture 5. Presentation of Mr. Jorgen Haukojl from Ramboll



Picture 6. Chairs in WTE session, Dr. Kalogirou and Professor Yong Seung Yun from Korea



Picture 7. Professor Seo, Yong –Chil , Chairman of WTERT/Korea and Dr. Kalogirou



Picture 8. Mr. Soon-Mo Hwang, Dr. Kalogirou , Mr. Bourtsalas on PVG GS Platech Plant



Picture 9. Plasma torches at PVG GS Platech Plant



Picture 10. Plasma arch at PVG GS Platech Plant



Picture 11. Vitrificated ash at PVG GS Platech Plant