



**CSIR-Central Mechanical Engineering Research Institute**

## **Press release on Technology Transfer of Plasma Disposal of Plastic Waste and Generation of Syngas for Power Generation**

The technology of Plasma Pyrolysis, an innovative technology for transforming high calorific plastic waste into a valuable synthetic gas (syngas) by means of thermal plasma has been developed by a team of Scientists of CSIR-CMERI in the leadership of Dr P K Chatterjee and Dr Biswajit Ruj.

*The technology has been transferred to a Kolkata based company namely M/s Positronics India by the Director, CSIR-CMERI Prof(Dr) Harish Hirani on 23<sup>rd</sup> August 2016 in the conference hall of CMERI, Durgapur.*

Plastic have been one of the materials with the fastest growth because of their wide range of applications due to versatility and relatively low cost. Since the duration of life of plastic products is relatively small, there is a vast plastic waste stream that reaches each year to the final recipient creating a serious environmental problem. To alleviate part our energy crisis and environmental degradation, it has become imperative to make use of appropriate technologies for recovery of resources from plastic waste.

Plasma pyrolysis, an innovative technology has been developed by CSIR-CMERI for transforming high calorific plastic waste into a valuable synthetic gas (syngas) by means of thermal plasma. The process developed is a drastic non-incineration thermal process, which uses extremely high temperature in an oxygen-starved environment to completely decompose input plastic waste into syngas. capacity plasma arc pyrolyser for treatment of plastic waste as well as energy recovery options from plastic waste has been indigenously designed, developed, installed and studied its performance at the CSIR-Central Mechanical Engineering Research Institute, Durgapur. Research results and techno-economic study indicated that the developed plasma pyrolyser may be a useful way of plastic waste treatment for energy recovery.

The innovation provides the following advantages:

- Volume reduction of the waste streams
- Byproduct Syngas is a clean fuel
- The extreme conditions of plasma kill stable bacteria
- Reduce the need for landfill
- Supply excess electricity for sale



Plasticwaste Plasma Gasifier (20 kg/hr.)