

# CSIR-Central Mechanical Engineering Research Institute Mahatma Gandhi Avenue, Durgapur - 713209

# Plasma Arc assisted Hospital Solid Waste Disposal Plant:

## Defination

Any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biological samples.

### Preamble and Novelty

- High temperature (~2500-3000°C) plasma arc assisted eco-friendly disposal of Hospital Solid Waste (HSW) with high waste destruction efficiency (~85-90%) by mass and combustion efficiency (>99%).
- The level of toxin emission from HSW treatment plant lies below the CPCB standard of toxic gases emission.
- This process route of hospital waste destruction is safe, hygienic, efficient and easy to control and in compliance with Hospital Waste Management Rules prescribed by CPCB.
- Major system components include plasma gasifier, secondary chamber, electrode and a gas cleaning unit comprise of catalytic converter, scrubber, booster drive, chimney.
- Capacity of the plasma gasifier of HSW plant: 15 kg/h



Plasma Arc assisted Hospital Solid Waste Disposal Pilot Plant at CSIR-CMERI



~ 21 Kg HSW

Waste destruction with respect to volume

About 90% volume reduction



~ 2 Kg Slag

#### Deployment

- The developed technology is already tested at laboratory level with different controlling parameters. Ready for field deployment.
- Various healthcare organisation like Hospital, health centre can avail this technology for safe disposal of HSW.
- Governments, NGOs can utilise this technology to build a commercially available waste management facility.

Circus?

For further details please contact Dr. Amit Ganguly, Senior Principal Scientist Phone: 9434214863; E-mail: a\_ganguly@cmeri.res.in