

## Augmenting Solid Waste Management System at Anushaktinagar:

DCSEM has installed a Plasma reactor named “Asher” on trial basis for processing of solid waste in colony. With effect from 01.02.2021 the operation & performance of the machine monitored over the period of the next 3 to 4 months. The machine is manufactured in Malaysia by M/s PAMERAI SDN.BHD and Chennai based M/s Kutty & Nathan are the authorized distributor for many countries including India. The machine is running successfully in 16 countries across the globe including at Changi airport Singapore. The trials of the machine for waste processing at Anushaktinagar is first of its kind in India.

The “ASHER” uses a plasma reactor for the generation of artificial plasma and ionized gas is used as a catalyst for temperature build up in the chamber. The artificial plasma is created via strong magnetic field that is calculated and formulated to very high Tesla. This plasma effectively bakes and dries the waste, reducing it up to 96% of its original weight.

The “ASHER” System:

The simplified process would be:

1. Stoke of fire within the chamber with dry feedstock (cardboards, wood etc.).
2. Turn on the blower fan that will pull in neutral air into the chamber, allow refractory chamber heat to build up to 150~200°C within 2 hours.
3. Open chamber door and put in trash/waste (sorting/segregation not necessary), close and secure chamber door. Continue feeding trash/ waste every 45-60 minutes.
4. Heat in the refractory chamber will dry out the trash/waste until brittle and reduce it to ash. The ash will collect at the bottom ash tray. Items that cannot be reduced to ash will also collect at the bottom ash tray (metal, glass, concrete).
5. Moisture content and gases released from the disintegration of the trash/ waste matter will either evaporate or travel through the effluent filtration system. Toxic gases etc. will be trapped within the Nanogreen water solution and the IP formulated carbons.
6. The toxins trapped in the Nanogreen water solution will be further scrubbed and reused within the system. 1-1.5 liters of water needs to be refilled per hour.

