

Low-cost incinerator for disposal of hospital wastes

Researchers at De Montfort University, Lincolnshire, the United Kingdom, have designed a simple low-cost incinerator for safe disposal of hospital wastes. This unit does not require a power source and the only moving parts are a hinged trapdoor to insert the waste and a door for clearing the residue. It would be ideal for use in developing countries and remote rural areas.

The present incinerators are fuelled by wood, but further development will enable diesel to be used. Built of standard bricks the 1 m² incinerator is lined with firebricks and fitted with a lid and steel chimney. Air flow into the unit is induced by the chimney and controlled by an air inlet, obviating the need for an electrically driven blower. Pressure in the combustion chamber is kept below atmospheric pressure, to prevent exit of gaseous emissions.

A secondary combustion zone before the chimney ensures complete combustion of all the gases as they pass through the chimney. Initial firing of the incinerator, by burning wood, brings the furnace temperature to the required minimum of 850°C within two hours from cold start. Burning waste sustains this temperature, with minimal addition of wood, provided that the waste being fed contains less than 3 l/h of water. During trials, satisfactory results were obtained.

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