

TWO STAGE PYROLYSIS OF ORGANIC WASTE

ABSTRACT

Organic waste is treated by pyrolysis or by anaerobic digestion followed by pyrolysis of the digestate. The pyrolysis is performed in two staged reactors. The second stage reactor treats char produced in the first stage. The temperature of the first stage reactor is preferably 450 degrees C or less. The temperature of the second stage reactor is higher than the temperature of the first stage, for example by 50 degrees C or more. Optionally, there may be a char cooler, a water sprayer, or both downstream of the char outlet of the second reactor. In an exemplary system, a digestate outlet is connected to the inlet of the first pyrolysis reactor. A pyrolysis liquid outlet of the first pyrolysis reactor is connected to the digester. Char produced in the second pyrolysis reactor may be used as a soil amendment.