

CARBONIZATION AND GASIFICATION OF BIOMASS AND POWER GENERATION SYSTEM

ABSTRACT OF THE DISCLOSURE

Biomass, including waste biomass, is gasified by a process in which the biomass is first carbonized, and the char and pyrolysis gas from the carbonizer are respectively fed to a high temperature gasifying part and a gas reformer part of a two-stage gasifier. A gasifying agent is continuously fed to the gasifying part, and intermittently fed to the gas reformer, to maintain the temperature required to avoid tar formation in the gas reformer stage. Multiple carbonization chambers are operated in rotation. When the carbonization/gasification apparatus is used to provide fuel to an electric power generator set, exhaust heat from the generator power plant is fed back to the carbonizer, and can be supplemented by exchange of heat from the gas delivered to generator power plant from the outlet of the gasifier.

Figure 1