

ABSTRACT

Disclosed is a biomass gasification island process under high temperature and atmospheric pressure; the process comprises: pre-treatment and storage of the biomass, gasification of the biomass in a gasifier, cooling, washing and dust extraction of gasified raw gas, and storage of fresh gas. The gasification of the biomass in the gasifier employs an external heat source to provide heat and controls the reaction temperature in the gasifier to be 1300-1750°C; the gasifier employs slag tapping; the raw gas is cooled by a chilling tower and through sensible heat recovery by a two-stage waste heat boiler; the cooled raw gas is subjected to treatment by washing and electric precipitation; the resulting fresh gas is stored in a gas holder; the whole gasification island device runs with a negative pressure or positive pressure of 0-50 KPa. The present process employs an external heat source for gasification, thereby improving the quality of raw gas.