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(54) **METHODS AND APPARATUS FOR CATALYTIC HYDROTHERMAL GASIFICATION OF BIOMASS**

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(58) **Field of Classification Search** 423/650
See application file for complete search history.

(57) **ABSTRACT**

Continuous processing of wet biomass feedstock by catalytic hydrothermal gasification must address catalyst fouling and poisoning. One solution can involve heating the wet biomass with a heating unit to a temperature sufficient for organic constituents in the feedstock to decompose, for precipitates of inorganic wastes to form, for preheating the wet feedstock in preparation for subsequent separation of sulfur contaminants, or combinations thereof. Treatment further includes separating the precipitates out of the wet feedstock, removing sulfur contaminants, or both using a solids separation unit and a sulfur separation unit, respectively. Having removed much of the inorganic wastes and the sulfur that can cause poisoning and fouling, the wet biomass feedstock can be exposed to the heterogeneous catalyst for gasification.

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10 Claims, 1 Drawing Sheet

