

Title (en)
REACTOR AND METHOD FOR THE PYROLYSIS OF INDUSTRIAL OR MUNICIPAL WASTE AND FOR THE REDUCTION AND PURIFICATION OF PYROLYSIS GAS FROM HEAVY HYDROCARBONS AND CARBON PARTICLES

Title (de)
REAKTOR UND VERFAHREN ZUR PYROLYSE VON INDUSTRIE- ODER STADTMÜLL UND ZUR REDUKTION UND REINIGUNG VON PYROLYSE GAS AUS SCHWEREN KOHLENWASSERSTOFFEN UND KOHLENSTOFFPARTIKELN

Title (fr)
RÉACTEUR ET PROCÉDÉ DE PYROLYSE DE DÉCHETS INDUSTRIELS OU MUNICIPAUX ET DE RÉDUCTION ET DE PURIFICATION DE GAZ DE PYROLYSE À PARTIR D'HYDROCARBURES LOURDS ET DE PARTICULES DE CARBONE

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Abstract (en)
[origin: WO2022019787A1] The invention relates to a method and a reactor for pyrolysis of industrial or municipal waste such as materials selected from the group consisting of underwood chips, wood waste, forest waste, sewage sludge, petroleum coke, municipal solid waste (MSW) or refuse derived fuels (RDF), and for the reduction and purification of pyrolysis gas from heavy hydrocarbons and carbon particles. A reactor for pyrolysis of industrial or municipal waste containing a vacuum-tight chamber is characterized by the fact that the space of the proper chamber is divided into four compartments, inside which there is a thermal insulation made of low-absorbent materials. The charge introduced through the first compartment is pyrolysed in the second compartment, and in the third compartment there is also a shelf on which a layer of carbonizate with a temperature of 850-1000° C is formed, acting as a catalyst for the reduction and purification of pyrolysis gas. The carbonizate layer with a temperature of 900-1000° C passes continuously into the carbonizate column in the fourth compartment with the temperature decreasing with the height of the column. The carbonizate column acts as an additional pyrolysis gas filtering and thermal insulation, and is cooled in its lower part with water. The heating of the charge and carbonizate, necessary for the process, is provided by electric heaters and / or a burner powered by pyrolysis gas. The reactor allows for the continuous process of feeding the charge, its pyrolysis, removal of carbonizate and obtaining purified pyrolysis gas. The invention also relates to a method for the reduction and purification of pyrolysis gas.

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