

Title (en)
PROCESS TO PRODUCE A METHANE RICH GAS MIXTURE FROM GASIFICATION DERIVED SULPHUR CONTAINING SYNTHESIS GASES

Title (de)
VERFAHREN ZUR HERSTELLUNG EINES METHANREICHEN GASGEMISCHS AUS DURCH VERGASUNG GEWONNENEN SCHWEFELHALTIGEN SYNTHESGASEN

Title (fr)
PROCÉDÉ DESTINÉ À PRODUIRE UN MÉLANGE GAZEUX RICHE EN MÉTHANE À PARTIR DE GAZ DE SYNTHÈSE CONTENANT DU SOUFRE PROVENANT D'UNE GAZÉIFICATION

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EP 08773866 A 20080703

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Abstract (en)
[origin: WO2009007061A1] The present invention discloses a method for converting a raw gas into a methane-rich and/or hydrogen-rich gas, comprising the steps of : a) providing the raw gas stemming from a coal and/or biomass gasification process, thereby the raw gas comprising beside a methane and hydrogen content carbon-monoxide, carbon-dioxide, alkanes, alkenes, alkynes, tar, especially benzole and naphthalene, COS, hydrogen sulfide and organic sulfur compounds, especially thiophenes; thereby the ratio of hydrogen to carbon monoxide ranges from 0.3 to 4; b) bringing this raw gas into contact with a catalyst arranged as a fluidized bed reactor at temperatures above 200 °C and at pressures equal or larger than 1 bar in order to convert the raw gas into a first product gas, thereby simultaneously convert organic sulfur components into hydrogen sulfide, reform tars, generate water/gas shift reaction and generate methane from the hydrogen/carbonmonoxide content; c) bringing the first product gas into a sulfur absorption process to generate a second product gas, thereby reducing the content of hydrogen sulfur and COS from 100 to 1000 ppm down to 1000 ppb or less; d) optionally bringing the second product gas into a carbon dioxide removal process to generate a third product gas at least almost free of carbon dioxide; e) bringing the third product gas into a 2nd methanation process to generate a forth product gas having a methane content above 5 vol%; f)) optionally bringing the fourth product gas into a carbon dioxide removal process to generate a fifth product gas at least almost free of carbon dioxide g) bringing the fifth product gas into an hydrogen separation process in order to separate a hydrogen rich gas from a remaining methane-rich gas, called substitute natural gas.

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Cited by
EP2684856A1; WO2014009146A1

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