

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局



(10) 国际公布号

WO 2012/010058 A1

(43) 国际公布日

2012 年 1 月 26 日 (26.01.2012)

PCT

(51) 国际专利分类号:

C10J 3/66 (2006.01)

C10J 3/48 (2006.01)

C10J 3/46 (2006.01)

C10J 3/20 (2006.01)

C10J 3/12 (2006.01)

C10J 3/84 (2006.01)

C10J 3/72 (2006.01)

(21) 国际申请号:

PCT/CN2011/076917

(22) 国际申请日:

2011 年 7 月 6 日 (06.07.2011)

(25) 申请语言:

中文

(26) 公布语言:

中文

(30) 优先权:

201010234122.9 2010 年 7 月 20 日 (20.07.2010) CN

(71) 申请人 (对除美国外的所有指定国): 武汉凯迪控股投资有限公司 (WUHAN KAI DI HOLDING INVESTMENT CO., LTD.) [CN/CN]; 中国湖北省武汉市东湖新技术开发区江夏大道特 1 号凯迪大厦, Hubei 430223 (CN)。

(72) 发明人: 及

(75) 发明人/申请人 (仅对美国): 唐宏明 (TANG, Hong-ming) [CN/CN]; 中国湖北省武汉市东湖新技术开发区江夏大道特 1 号凯迪大厦, Hubei 430223 (CN)。 张岩丰 (ZHANG, Yanfeng) [CN/CN]; 中国湖北省武汉市东湖新技术开发区江夏大道特 1 号凯迪大厦, Hubei 430223 (CN)。 陈义龙 (CHEN, Yilong) [CN/CN]; 中国湖北省武汉市东湖新技术开发区江夏大道特 1 号凯迪大厦, Hubei 430223 (CN)。

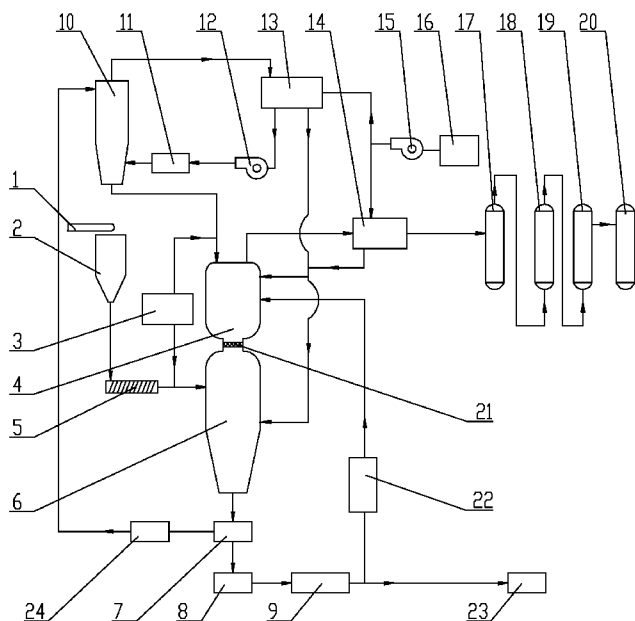
(74) 代理人: 武汉开元知识产权代理有限公司 (WUHAN KAIYUAN INTELLECTUAL PROPERTY AGENT LTD.); 中国湖北省武汉市江岸区香港路 145 号远洋大厦 14 层, Hubei 430015 (CN)。

(81) 指定国 (除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS,

[见续页]

(54) Title: METHOD AND APPARATUS FOR BIOMASS PYROLYSIS GASIFICATION VIA TWO INTERCONNECTED FURNACES

(54) 发明名称: 生物质双炉连体裂解气化工艺及其设备



(57) Abstract: A method and an apparatus for biomass pyrolysis gasification via two interconnected furnaces. The method uses a high heat-capacity solid particle as an energy carrier and saturated water as an oxidizer. First, the biomass is subjected to a low-temperature pyrolysis at a temperature between 500 and 800°C to obtain an alkali metal oxide-free crude synthetic gas and coke. Next, the crude synthetic gas and the coke are subjected to a high-temperature gasification at a temperature between 1200 and 1600°C to obtain a tar-free synthetic gas. Finally, the synthetic gas generated is subjected to a sequence of cooling, dust removal, acid removal, and dehydration processes. The device comprises: a gasification furnace (4) and a pyrolysis furnace (6) arranged one on top of the other, the inner cavities thereof being interconnected, a particle heater (10), a plasma torch heater (11), an exhaust fan (12), and a first heat exchanger (13) cyclically arranged, a water storage container (16) for making the saturated water vapor, a water delivery pump (15), a second heat exchanger (14), a dust remover (17), an acid remover (18), and a dehydration device (19).

[见续页]

图 1 / Fig. 1

WO 2012/010058 A1