



New connection on: : 27-04-2018 : 04:43:41 - Last disconnection on: : 26-04-2018 : 03:37:45

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[No database/cluster active] ..fi epodoc

 Database: EPODOC

[EPODOC: SS 1] (reactor or furnace or apparatus) and waste and (tire or tyre or wheel) and (pyrolysis or decomposition) and gas

Results in EPODOC **133**

[SS 2] 1 and nozzle and (cool+ or condens+) and solid and liquid and separat+

Results in EPODOC **0**

[SS 3] 1 and nozzle

Results in EPODOC **4**

[SS 4] (reactor or furnace or apparatus) and waste and (tire or tyre or wheel or plastic or organic) and (pyrolysis or decomposition) and gas

Results in EPODOC **1.186**

[SS 5] 4 and nozzle and (cool+ or condens+) and solid and liquid and separat+

Results in EPODOC **0**

[SS 6] 4 and nozzle

Results in EPODOC **34**

[SS 7] 6 and separat+

Results in EPODOC **9**

[SS 8] ..li



1/9 © EPODOC / EPO

PN - [CN107384458](#) A 20171124

PR - CN20171790592 20170905

AP - CN20171790592 20170905

DT - I

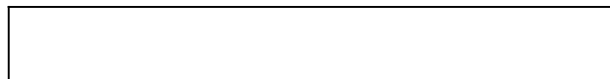
CNOI - [C10B53/07](#) ; [C10G1/002](#)

CCA - [Y02P20/143](#)

PA - LIUZHOU GANYUAN
ENVIRONMENTAL PROTECTION
TECH CO LTD

TI - High-temperature **pyrolysis reactor** and system and method for producing oil and carbon black by **waste tire pyrolysis**

AB - The invention discloses a high-temperature **pyrolysis reactor** which comprises a **reactor** body, a rubber powder spray pipe, a **nozzle**, a mixer, a cooling device, a chilling air **nozzle** and the like. The invention further discloses a system for producing oil and carbon black by **waste tire pyrolysis**. The system applies the high-temperature **pyrolysis reactor** and further comprises a **waste tire** crushing system, a conveying system, a flying ash filter, an absorption cooling tower, a carbon black collecting system, an oil and **gas** cooling **separation** system and a tail **gas** recovery system. The invention further discloses a method for producing oil and carbon black by **waste tire pyrolysis**, and the method applies the system for producing oil and carbon black by **waste tire pyrolysis**. **Waste tire** powder is sufficiently mixed and pyrolyzed by the aid of rapid high-temperature injection and mixing **pyrolysis**, and the high-temperature **pyrolysis reactor** has the advantages of simple



technological process, compact device structure, less investment, good oil quality and the like.

2/9 © EPODOC / EPO

- PN - [CN107163953](#) A 20170915
- PR - CN20171300261 20170502
- AP - CN20171300261 20170502
- DT - I
- PA - WU ZHIREN
- TI - Biomass and carbon-containing **organic waste pyrolysis** rotary **furnace** and **pyrolysis** product recovering system
- AB - The invention discloses a biomass and carbon-containing **organic waste pyrolysis** rotary **furnace**. The biomass and carbon-containing **organic waste pyrolysis** rotary **furnace** comprises a cylindrical shell; the outer wall of the shell is connected with a supporting mechanism and a transmission mechanism; the two ends of the shell are rotatably connected with a **furnace** head cover plate and a **furnace** tail cover plate correspondingly through a **gas** seal type double-seal assembly; a flue **gas** collecting chamber is arranged on the **furnace** head side of an inner cavity of the shell; a combustion chamber is arranged on the **furnace** tail side; the flue **gas** collecting chamber and the combustion chamber are communicated through a fire pipe; the flue **gas** collecting chamber extends out of the **furnace** head cover plate through a flue **gas** discharging pipe; the combustion chamber is connected with a burner **nozzle** extending outside the **furnace** tail cover plate; the **furnace** head cover plate is connected with a feeding port communicated with the inner cavity of the shell; and the **furnace** tail cover plate is connected with a **pyrolysis gas** outlet pipe and a charcoal discharge port which are communicated with the inner cavity of the shell **separately**. The **furnace** head cover plate, the **furnace** tail cover plate, the inner cavity of the shell and the atmosphere are sealed through the **gas** seal type double-seal assembly, the materials are heated by a mode of self-heating and internally combusting the fire pipe, and the biomass and carbon-containing **organic waste pyrolysis** rotary **furnace** can be applied to new construction of a rotary **furnace** and is more suitable for transformation of an idle rotary kiln.

3/9 © EPODOC / EPO

- PN - [CN103566743](#) A 20140212
- PNFP - CN103566743B B 20150812
- PR - CN20131576474 20131118
- AP - CN20131576474 20131118
- DT - I
- CT - || STSE (A)
[CN1896591](#) A 20070117 [A] (XINSHIJI ENERGY ENVIRONMENTAL [CN])
[A]
[US5607654](#) A 19970304 [A] (LERNER BERNARD J [US])
[A]
[CN203663683U](#) U 20140625 [R] (SHANDONG GIANT ASIA ENVIRONMENTAL PROT

EQUIPMENT CO LTD, et al)

[R]

[CN1559654](#) A 20050105 [A] (BEIJING ENFEI SCIENCE & TECHNO [CN])

[A]

[CN1422689](#) A 20030611 [A] (UNIV TONGJI [CN])

[A]

- PA - (A)
SHANDONG JUYA ENVIRONMENTAL PROT EQUIPMENT CO LTD; LINYI SUNSHINE BOILER
MFG CO LTD
- TI - (A)
Harmful **gas** dynamic purification **reactor** and purification method thereof
- AB - (A)
The invention discloses a harmful **gas** dynamic purification **reactor** and a purification method thereof, wherein saturated whitewash is used as a cleaning agent to react with chlorine elements produced after the **decomposition** of a chlorine-containing **plastic waste** in a shell of an induced draft fan and a flue to produce calcium chloride, then the concentration of the chlorine elements for the synthesis of dioxin at the temperature interval of 400-800 DEG C is reduced, the production of dioxin is completely eradicated, the dynamic purification **reactor** structurally comprises the shell of the induced draft fan, an impeller, blades and a saturated whitewash **nozzle**, wherein the impeller is arranged in the shell of the induced draft fan, the blades are uniformly arranged on the impeller, the saturated whitewash **nozzle** is arranged in a smoke inlet of the induced draft fan, the saturated whitewash **nozzle** is connected with a saturated whitewash pressurization liquid storage tank, the smoke inlet of the induced draft fan is connected with a smoke outlet of a **waste** incineration **furnace**, and the smoke outlet is connected with a **gas**-liquid **separator** and a calcium chloride concentrating and drying process.

4/9 © EPODOC / EPO

PN - [JP2002121319](#) A 20020423

PR - JP20000314065 20001013

AP - JP20000314065 20001013

DT - I

CCA - [Y02W30/703](#)

FI - C08J11/12; C08J11/12+ZAB

FT - 4F301/CA09; 4F301/CA24;
4F301/CA26; 4F301/CA43;
4F301/CA51; 4F301/CA52;
4F301/CA64; 4F401/AA27;
4F401/CA69; 4F401/CB01;
4F401/DA03; 4F401/DA08

PA - TOSHIBA CORP

TI - **WASTE PLASTIC
TREATMENT APPARATUS**

AB - PROBLEM TO BE SOLVED: To
efficiently cool a high-
temperature oil vapor and



effectively recover a condensed oil from a thermal **decomposition apparatus**. SOLUTION: A **waste plastic** is thermally decomposed in a thermal **decomposition apparatus** 11, and a high-temperature oil vapor from the thermal **decomposition apparatus** 11 is sent to a jet scrubber 12. A liquid oil is sent to the jet scrubber 12 and is jetted from a **nozzle** 12a to cool and condense the high-temperature oil vapor. An oil condensed by the jet scrubber 12 becomes a liquid oil and is sent through a **gas-liquid separator** 13 to a buffer tank 14. A part of the liquid oil in the buffer tank 14 is returned through a return pipe 22 to the jet scrubber 12 to be used for cooling the high-temperature oil vapor.

5/9 © EPODOC / EPO

PN - [JP2000070894](#) A 20000307

PNFP - JP4028934B B2 20080109

PR - JP19980242826 19980828

AP - JP19980242826 19980828

DT - I

CCA - [Y02E50/30](#)

FI - B09B3/00&303K

FT - 4D004/AA07; 4D004/AA46; 4D004/AB03; 4D004/BA02; 4D004/BA03; 4D004/BA06; 4D004/CA26; 4D004/CA27; 4D004/CA29; 4D004/CB05

PA - (A)
NIPPON STEEL CORP

TI - (A)
WASTE TREATMENT AND TREATMENT EQUIPMENT THEREFOR

AB - (A)
PROBLEM TO BE SOLVED: To melt stably incombustibles and an ash component by treating wastes directly in a melting **furnace** to form **pyrolysis** char and **pyrolysis gas**, then gasifying the **pyrolysis** char and melting the ash component, and mixing generated **gas** with the **pyrolysis gas** to form combustible **gas**. SOLUTION: Incombustibles and an ash component in wastes treated in a shaft **furnace** type direct melting **furnace** 1 are discharged, and **pyrolysis gas** and **pyrolysis** char formed therein are **separated**

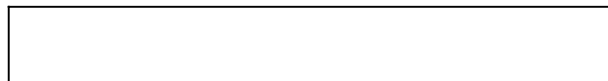
into **pyrolysis gas** 19 and **pyrolysis** char 20 by a solid-liquid **separating** device 2, and the **pyrolysis gas** 19 is introduced into a modification **furnace** 4. On the other hand, **pyrolysis** char 20 is blown together with oxygen or oxygen enriched **gas** 14 from a burner 18 into a char melting **furnace** 3 to gasify **organic** matters into combustible **gas** and melt the ash component. **Gas** generated in the char melting **furnace** 3 is introduced from an upper throat of the char melting **furnace** 3 into the modification **furnace** 4. Melting **furnace gas** is mixed with **pyrolysis gas** 19 blown in from a **nozzle** 17 in the modification **furnace** 4 to decompose tar in the **pyrolysis gas** 19 into combustible **gas**.

6/9 © EPODOC / EPO

PN - [JP2000051829](#) A 20000222
 PR - JP19980227844 19980812
 AP - JP19980227844 19980812
 DT - I
 FI - B09B5/00&Z+ZAB
 FT - 4D004/AA22; 4D004/AB10; 4D004/BA10; 4D004/CA12; 4D004/CA22; 4D004/CB04; 4D004/CB32; 4D004/CC20
 PA - HITACHI LTD
 TI - METHOD AND **APPARATUS** FOR RECYCLING TREATMENT OF **WASTE** LIQUID CRYSTAL DISPLAY **APPARATUS** AND METHOD FOR **SEPARATING ORGANIC** FILM IN FLUIDIZED-BED
 AB - PROBLEM TO BE SOLVED: To recover a glass substrate with high purity by throwing a **waste** liquid crystal display **apparatus** to a fluidized-bed layer in which an overheated solid heat medium is fluidized and decomposing and removing resin members such as filters and polarizing plates stuck to the glass substrate by overheating and fluidizing the liquid crystal display **apparatus** by a fluidizing **gas**. SOLUTION: A **waste** liquid crystal display **apparatus** 13 is thrown to a fluidized-bed layer 1 from a **waste** liquid crystal display **apparatus** inlet 1a. In the fluidized-bed layer 1, while being heated by a heating heater 4, a heat medium 15 is fluidized by a fluidizing **gas** jetted out of a **gas** jetting **nozzle** 8. While being heated together with the heat medium 15, the **waste** liquid crystal display **apparatus** 13 thrown to the fluidized-bed layer is fluidized. At that time, the liquid crystal sealed between glass substrates, a polarizing plate stuck to the glass surface, and **organic** films such as color filters, etc., are softened or gasified by **decomposition**. Those members are almost 100% completely removed from the glass surface by friction with the heat medium 15 due to further fluidization. After that, the resultant glass substrates from which resin members are removed are recovered by a glass-transporting basket 2 made movable by a glass-transporting basket guiding mechanism 3.

7/9 © EPODOC / EPO

PN - [JPH1130411](#) A 19990202
 PR - JP19970196366 19970708
 AP - JP19970196366 19970708
 DT - I
 CCA - [Y02E20/12](#) ; [Y02E20/344](#)
 FI - F23G5/00+ZAB; F23G5/00&115Z;



F23G5/027&B;
F23G5/027&B+ZAB;
F23G5/033&A+ZAB; F23G5/32;
F23G5/32+ZAB;
F23G5/46&A+ZAB; F23J1/00&B;
F23J15/00&J; F23J15/02

FT

- 3K061/AA11; 3K061/AA23;
3K061/AB02; 3K061/AB03;
3K061/AC01; 3K061/AC19;
3K061/BA10; 3K061/CA01;
3K061/CA07; 3K061/DA02;
3K061/DA17; 3K061/DA18;
3K061/DA19; 3K061/DB01;
3K061/DB16; 3K061/EA01;
3K061/EB06; 3K061/EB11;
3K061/EB14; 3K061/EB15;
3K061/GA10; 3K061/LA03;
3K061/LA11; 3K061/LA14;
3K061/NB03; 3K065/AA11;
3K065/AA23; 3K065/AB02;
3K065/AB03; 3K065/AC01;
3K065/AC19; 3K065/BA10;
3K065/CA20; 3K065/JA05;
3K065/JA13; 3K065/JA18;
3K070/DA01; 3K070/DA05;
3K070/DA07; 3K070/DA32;
3K070/DA40; 3K070/DA49;
3K070/DA62; 3K161/AA02;
3K161/AA04; 3K161/AA05;
3K161/AA18; 3K161/AA19;
3K161/AA34; 3K161/CA03;
3K161/CA05; 3K161/DA33;
3K161/DA53; 3K161/DA73;
3K161/DB24; 3K161/EA01;
3K161/EA24; 3K161/EA44;
3K161/GA03; 3K161/GA12;
3K161/GA15; 3K161/HA05;
3K161/HA08; 3K161/HA47;
3K161/HA54; 3K161/HA61;
3K161/HB01; 3K161/JA02;
3K161/JA12; 3K161/KA02;
3K161/KA13; 3K161/KA22;
3K161/KA25; 3K161/KA50;
3K161/LA03; 3K161/LA04;
3K161/LA16; 3K161/LA17;
3K161/LA24; 3K161/LA33;
3K161/LA34; 3K161/LA36;
3K161/LA40; 3K161/LA41;
3K161/LA56; 3K161/LA65;

3K261/AA10; 3K261/EA03;
3K261/EA11; 3K261/EA14

PA - NIPPON STEEL CORP

TI - **WASTE** INCINERATOR

AB - PROBLEM TO BE SOLVED: To facilitate the recycling, to reduce the volume of incombustibles, to reduce incineration residues, and to efficiently collect the **waste** for the fuel **gas** and the electric power by using oxygen or oxygen-rich air for the oxidizing agent to be used in a melting **furnace** to gasify the **pyrolysis** solid. SOLUTION: Oxygen and oxygen-rich air is blown from an oxygen **nozzle** 9 into a **pyrolysis furnace** 2, and the **pyrolysis gas** or wastes are partly burned. The **pyrolysis gas** is **separated** from the **pyrolysis** solid in a cyclone 3, and cooled in a **waste** heat boiler 4. A part of the cooled **pyrolysis gas** is mixed with the gasified **gas** in a melting **furnace** 5, and circulated in the **pyrolysis furnace** 2, and the rest of the **gas** is processed in a dust collector 6 and an exhaust **gas** processing device 7 to obtain clean **gas** containing no dust or harmful **gas**. The **organic** matters of the **pyrolysis** solid which is thermally decomposed in the **pyrolysis furnace** become carbon-like powder, and most of which is collected in the cyclone, and the rest is collected by the **waste** heat boiler 4 and the dust collector 6, and gasified inner melting **furnace** 5.

8/9 © EPODOC / EPO

PN - [JPH10272433](#) A 19981013

PR - JP19970079701 19970331

AP - JP19970079701 19970331

DT - I

CCA - [Y02P20/143](#)

FI - B09B3/00+ZAB; B09B3/00&302A; C10B53/00&B; C10B53/07; C22B1/00

FT - 4D004/AA07; 4D004/AA21; 4D004/AB03; 4D004/BA05; 4D004/BA07; 4D004/CA27; 4D004/CA28; 4D004/CA29; 4D004/CA50; 4D004/CB34; 4D004/CB36; 4D004/CB42; 4D004/CC01; 4D004/CC03; 4D004/DA02; 4D004/DA03; 4D004/DA06; 4D004/DA10; 4H012/HB06; 4H012/HB10; 4K001/AA08; 4K001/AA19; 4K001/AA42; 4K001/BA22; 4K001/BA24; 4K001/DA12; 4K001/GA19; 4K001/GB08; 4K001/GB10

PA - HITACHI SHIPBUILDING ENG CO; KEIHANNA KANKYO KK

TI - **WASTE** POLYETHYLENE-METAL COMPOSITE MATERIAL TREATMENT AND DEVICE THEREFOR

AB - PROBLEM TO BE SOLVED: To **separate** valuable metal and polyethylene constituting a composite material to recover them in forms capable of reusing each by heating the composite material of polyethylene and metal under optimum temperature conditions and in optimum atmosphere. SOLUTION: This **waste** polyethylene-metal composite material treating device is provided with a dry distillation **furnace** 1 in which a **waste** housing chamber 3 is provided inside, a heat source conduit 9 provided, wound around the outer periphery of the **waste** housing chamber 3 and having a heat source blowoff **nozzle** 10 facing the inside of the **waste** housing chamber 3, a conduit 17 for sending **organic gas** produced in the dry distillation **furnace** 1 to a combustion **furnace** 11 and a conduit 15 for sending **waste gas** produced in the combustion **furnace** 11 to the dry distillation **furnace** 1. Superheated steam is used as a heat source to heat a **waste** 8 of the composite material consisting of polyethylene and metal in the absence of oxygen and the **waste** 8 is decomposed into the polyethylene with increased hardness and the metal in a nonoxidized state by partial thermal **decomposition**. The **organic gas** produced by the thermal **decomposition** of the polyethylene is burned in the combustion **furnace** 11 and the dry distillation **furnace** 1 is heated by the **waste gas** produced in the combustion **furnace** 11.

9/9 © EPODOC / EPO

PN - [CN101143294](#) A 20080319

PNFP - CN100556509C C 20091104

PR - CN2007152759 20070717

AP - CN2007152759 20070717

DT - I

PA - (A C)
WUHAN INST TECHNOLOGY [CN]

TI - (A C)
Method and device for recovering micro fine carbon dust from industrial **organic waste gas**

AB - (A)
The invention provides a method of reclaiming fine carbon powder from industrial **organic waste gas**. The method uses microwave to promote the industrial **organic waste gas** discharge to produce atmospheric microwave plasma jet. After being heated by high-frequency induction, the jet contacts with a cooling mantle to cause the active state carbon ions or carbon atoms contained in the jet to lose activity quickly, and so the fine carbon powder is made, and at the same time, the **organic waste gas** is decomposed into harmless **gas**. The device provided by the invention has an

atmospheric microwave plasma jet source which contains a microwave source (1), a microwave preparing and monitor system (3), a waveguide plasma jet **reactor** (5), a jet **nozzle** (12) which is arranged on the device, a microwave compression enhanced screw (13), a coupled antenna (15) and a microwave anti-flow structure (19), and the device also has a high-frequency induction heating coil (20) and a gatherer (6) composed of a cooling mantle (8) and a cooling cavity (10). The invention can accomplish the **decomposition** and **separation** treatment and the fine carbon powder reclaiming of the industrial **organic waste gas**.