CLAIMS

1. A flame-free catalytic thermal incineration device, comprising:

an incinerating furnace to be disposed in a housing and including air pores;

a reactant inlet to allow a reactant to be combusted to flow into the incinerating furnace;

a reactant heating and feeding unit to be extended downwards from the reactant inlet, and including a heater and an opening in a lower portion of the reactant heating and feeding unit;

an oxygen feeding unit to feed oxygen through the air pores of the incinerating furnace; and

a metallic oxide catalyst to fill in the incinerating furnace.

2. The device of claim 1, wherein the heater provided in the reactant heating and feeding unit includes heating wire and an electrical contact unit, and

wherein the electrical contact unit is disposed in a lower portion of the heater, and the heating coil is disposed to be extended upwards from the electrical contact unit.

3. The device of claim 1, wherein a plurality of the air pores of the incinerating furnace is formed on a floor surface of the incinerating furnace.

4. The device of claim 3, wherein the oxygen feeding unit is provided to lead to a surface of an inner wall of the housing of the incinerating furnace to allow oxygen to descend along the surface of the inner wall of the housing of the incinerating furnace and to be fed through the air pores on the floor surface of the incinerating furnace.

5. The device of claim 4, wherein the oxygen feeding unit comprises:

a hollow disc to be disposed surrounding the reactant inlet;

a first pipe to be in contact with an end of the disc to lead to the disc and allowing oxygen to flow into the disc; and

a second pipe to be in contact with another end of the disc to lead to the disc and feeding oxygen escaping from the disc to the surface of the inner wall of the housing of the incinerating furnace.

6. The device of claim 1, wherein the opening to be formed in a lower portion of the reactant heating and feeding unit includes a plurality of air pores.

7. The device of claim 1, wherein the heater is heated up to approximately 800°C through 1200°C.

8. The device of claim 1, wherein the metallic oxide catalyst includes SiO_2, Al_2O_3, Fe_2O_3, and MnO_x.

9. The device of claim 1, wherein the housing of the incinerating furnace includes a protruded fixing unit at both ends to allow an entirety of the housing to rotate on the protruded fixing unit.

CLAIMS

1. A flame-free catalytic thermal incineration device, comprising:

an incinerating furnace to be disposed in a housing and including air pores;

a reactant inlet to allow a reactant to be combusted to flow into the incinerating furnace;

a reactant heating and feeding unit to be extended downwards from the reactant inlet, and including a heater and an opening in a lower portion of the reactant heating and feeding unit;

an oxygen feeding unit to feed oxygen through the air pores of the incinerating furnace; and

a metallic oxide catalyst to fill in the incinerating furnace,

wherein the air pores of the incinerating furnace is formed on a floor surface of the incinerating furnace, and

the oxygen feeding unit comprises:

a hollow disc to be disposed surrounding the reactant inlet;

a first pipe to be in contact with an end of the disc to lead to the disc and allowing oxygen to flow into the disc;

a second pipe to be in contact with another end of the disc to lead to the disc and feeding oxygen escaping from the disc to the surface of the inner wall of the housing of the incinerating furnace; and

inner wall the housing of the incinerating furnace to be in contact with the air pores on the floor surface of the incinerating furnace;

to allow oxygen to descend along the surface of the inner wall of the housing of the incinerating furnace and to be fed through the air pores on the floor surface of the incinerating furnace.

2. The device of claim 1, wherein the heater provided in the reactant heating and feeding unit includes heating wire and an electrical contact unit, and

wherein the electrical contact unit is disposed in a lower portion of the heater, and the heating

coil is disposed to be extended upwards from the electrical contact unit.

3. The device of claim 1, wherein a plurality of the air pores of the incinerating furnace is formed on a floor surface of the incinerating furnace.

4. The device of claim 1, wherein the opening to be formed in a lower portion of the reactant heating and feeding unit includes a plurality of air pores.

5. The device of claim 1, wherein the heater is heated up to approximately 800°C through 1200°C.

6. The device of claim 1, wherein the metallic oxide catalyst includes SiO_2, Al_2O_3, Fe_2O_3, and MnO_x.

7. The device of claim 1, wherein the housing of the incinerating furnace includes a protruded fixing unit at both ends to allow an entirety of the housing to rotate on the protruded fixing unit.