CLAIMS

1. A process for steam cracking hydrocarbon feedstock in a steam cracking furnace, the process comprising:

vaporizing the hydrocarbon feedstock, using hydrocarbon feedstock vaporizing means or the hydrocarbon feedstock vaporizer external of the steam cracking furnace, wherein the hydrocarbon feedstock vaporizer heated with a heat transfer medium having a temperature of less than or equal to 350 ºC;

and

distilling the preheated hydrocarbon feedstock in a medium pressure distillation column connected to the first heat exchanger, wherein the medium pressure distillation column is operated at an absolute pressure of 1.2 MPa;

feeding the vaporized hydrocarbon feedstock to the hydrocarbon feedstock superheater in a convection section of the steam cracking furnace;

superheating the vaporized hydrocarbon feedstock using flue gas from a radiant section of the steam cracking furnace in hydrocarbon feedstock superheater in the convection section of the steam cracking furnace;

superheating steam from a steam generator using the flue gas from a radiant section of the steam cracking furnace in a heat exchanging means;

steam cracking the super-heated hydrocarbon feedstock into cracked gas in a fired tubular reactor in the radiant section of the steam cracking furnace;

wherein the vaporizing the hydrocarbon feedstock comprises:

pressurizing the hydrocarbon feedstock using a hydrocarbon feedstock pump to form a pressurized hydrocarbon feedstock;

preheating the pressurized hydrocarbon feedstock in a first heat exchanger; and

preheating boiled feed water for the steam generator using flue gas from the radiant section of the steam cracking furnace in a boiler feed water preheating means.

2. The process according to claim 1, wherein the distilling in in the medium pressure distillation column uses medium pressure stripping steam having an absolute pressure in a range of 0.8 - 2.0 MPa.

3. The process according to claim 2, wherein the medium pressure stripping steam has a temperature in a range of 180 - 350 ºC.

4. The process according to any one of claims 1 or 2, wherein the vaporizing the hydrocarbon feedstock further comprises:

preheating fluid components of the hydrocarbon feedstock from the medium pressure distillation column through heat exchange in a second heat exchanger, and

distilling the hydrocarbon feedstock in a low pressure distillation column into at least one of a light distillate fraction and a middle distillate fraction and a heavy distillate fraction, wherein

the low pressure distillation column is operated at an absolute pressure in a range of 0.1 - 0.6 MPa.

5. The process according to claim 4, further comprising distilling the hydrocarbon stream in a low pressure distillation column using low pressure stripping steam having an absolute pressure in a range of 0.1 - 0.7 MPa.