

Abstract

Disclosed is a fluidized catalytic cracking regeneration apparatus and application thereof. The fluidized catalytic cracking regeneration apparatus comprises a coke supplemental device, a regenerator and an external catalyst circulation pipe, wherein an outlet of the coke supplemental device is in fluid communication with an inlet of the regenerator, the external catalyst circulation pipe connects a lower portion of the regenerator to the coke supplemental device for returning part of catalyst in the regenerator to the coke supplemental device, the coke supplemental device is provided with an inlet for spent catalyst, an inlet for oxygen-lean gas, and an inlet for fuel oil, and an inlet for oxygen-rich gas is disposed at bottom of the regenerator, wherein the inlet for fuel oil is disposed at a position downstream of the inlet for spent catalyst along a direction of stream flow. When the regeneration apparatus is used for fluidized catalytic cracking reaction with less coke generation, it can not only realize heat balance of the reaction-regeneration process, but also make the temperature rise of the catalyst during the coke-burning process in the regenerator uniform without local hot spots, resulting in no damage to the physical and chemical properties of the catalyst.

Fig. 1