

Abstract

The present invention relates to the field of heavy oil hydrotreatment, in particular to a heavy oil hydrotreating system and a heavy oil hydrotreating method. The heavy oil hydrotreating method comprises: a prehydrotreating reaction zone, a transition reaction zone, and a hydrotreating reaction zone that are connected in series successively, sensor units, and a control unit, wherein, in the initial reaction stage, the prehydrotreating reaction zone includes at least two prehydrotreating reactors connected in parallel, and the transition reaction zone includes or doesn't include prehydrotreating reactors; in the reaction process, the control unit controls material feeding to and material discharging from each prehydrotreating reactor in the prehydrotreating reaction zone according to pressure drop signals of the sensor units, so that when the pressure drop in any of the prehydrotreating reactors in the prehydrotreating reaction zone reaches a predetermined value, the prehydrotreating reactor in which the pressure drop reaches the predetermined value is switched from the prehydrotreating reaction zone to the transition reaction zone. The heavy oil hydrotreating method according to the present invention can greatly prolong the running period of a heavy oil hydrotreating apparatus.

[Fig.1]