

ABSTRACT

METHOD AND SYSTEM FOR CAPTURING AND UTILIZING CARBON DIOXIDE

Disclosed are a method and system for capturing and utilizing carbon dioxide. The method for capturing and utilizing the carbon dioxide includes: performing a capture process on carbon dioxide in a target component by using an alkaline solution, to obtain an aqueous solution containing a carbonate; performing an electrolytic regeneration process on the aqueous solution containing the carbonate, to obtain an aqueous solution of a hydroxide, carbon dioxide produced by electrolysis, oxygen and hydrogen, and controlling a concentration of the aqueous solution containing the carbonate and an electrolytic voltage in the electrolytic regeneration process to adjust an output ratio of the carbon dioxide produced by the electrolysis and the hydrogen at the same time; and optionally, performing a catalytic reaction of the carbon dioxide produced by the electrolysis and the hydrogen, to obtain a hydrocarbon, where the hydrocarbon is available as an industrial by-product. This method is capable of realizing emission reduction of the carbon dioxide, and optionally is capable of solving problems of transportation and utilization of the carbon dioxide and hydrogen, and obtain an industrial by-product meanwhile.

Fig. 1