ABSTRACT

COMBINED CARBON DIOXIDE AND OXYGEN PROCESS FOR ETHYLBENZENE DEHYDROGENATION TO STYRENE

Processes for using a combination of carbon dioxide and oxygen in the dehydrogenation of hydrocarbons are provided. A hydrocarbon feedstock, carbon dioxide and oxygen are fed to an oxidative dehydrogenation reactor system containing one or more catalysts that promote dehydrogenation of the hydrocarbon feedstock to produce a dehydrogenated hydrocarbon product. The processes of the present invention may be used, for example, to produce styrene monomer by dehydrogenation of ethylbenzene using carbon dioxide and oxygen as oxidants.

FIG. 1