CONTINUOUS PROCESS FOR CONVERTING NATURAL GAS TO LIQUID HYDROCARBONS

ABSTRACT

An improved continuous process for converting methane, natural gas, or other hydrocarbon feedstocks into one or more higher hydrocarbons or olefins by continuously cycling through the steps of alkane halogenation, product formation (carbon-carbon coupling), product separation, and regeneration of halogen is provided. Preferably, the halogen is continually recovered by reacting hydrobromic acid with air or oxygen. The invention provides an efficient route to aromatic compounds, aliphatic compounds, mixtures of aliphatic and aromatic compounds, olefins, gasoline grade materials, and other useful products.

Figure 1.