

PARAFFIN DEHYDROGENATION PROCESS AND APPARATUS

ABSTRACT

A process for recovering hydrogen from dehydrogenation reactor effluent is disclosed. A feed stream comprising hydrocarbons and hydrogen to a dehydrogenation reactor maintained at dehydrogenation conditions to provide a dehydrogenation reactor effluent. The dehydrogenation reactor effluent is passed to a cold box separation unit to provide a liquid hydrocarbon product stream and a recycle hydrogen stream. A return portion of the recycle hydrogen stream is passed to the reactor effluent compressor. The subject matter disclosed improved process and apparatus which enables the paraffin dehydrogenation reactor to run at reduced H_2/HC ratio without requiring an investment in a resized compressor or resized turboexpanders or separators in the cold box.

[Figure 1]