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(54) Title: MULTI-TUBE REACTOR SYSTEMS AND PROCESSES FOR NO-OXIDATIVE CONVERSION OF METHANE

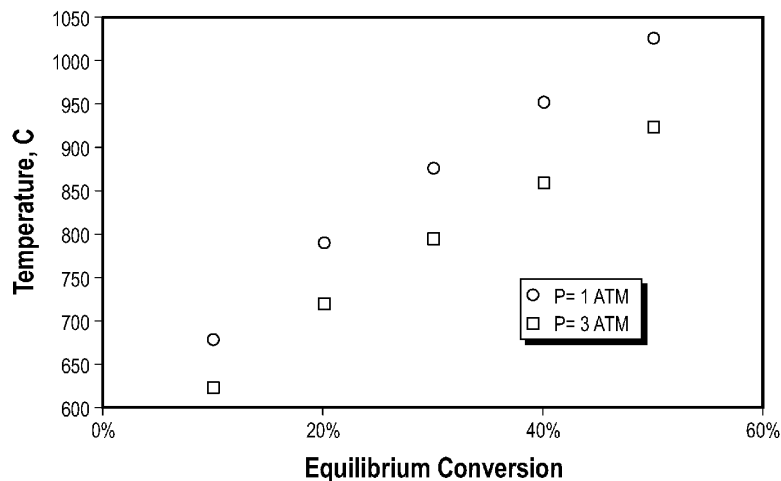


FIG. 1

(57) Abstract: The present disclosure refers to systems and methods for efficiently converting a C1-C3 alkane such as natural gas to a liquid C2-C10 product and hydrogen. Generally, the process comprises flowing the C1-C3 alkane through a plurality of tubes within a vessel wherein the tubes house a catalyst for converting the C1-C3 alkane to the liquid C2-C10 product and hydrogen. The C1-C3 alkane is heated under suitable conditions to produce the liquid C2-C10 product and hydrogen. Advantageously, the C1-C3 alkane is heated by burning a fuel outside the tubes in fuel burning nozzles configured to transfer heat from the burning through the tubes.

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