AROMATIZATION OF METHANE WITH A COMBINATION OF TWO DIFFERENT CATALYSTS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of, and priority from, United States Patent Application Serial No. 61/537,232, filed September 21, 2011, and entitled "PROCESS FOR PRODUCTION OF AROMATIC HYDROCARBONS FROM NATURAL GAS," the entire contents of which are incorporated herein by reference.

FIELD

[0002] The present invention relates to processes and systems for aromatization of low hydrocarbons, including production of aromatic hydrocarbons from natural gas.

BACKGROUND

[0003] It is known that dehydroaromatization of methane (CH_4) under non-oxidative conditions is thermodynamically more favorable to aromatics than to olefins, and molybdenum-modified zeolites or aluminosilicates such as Mo/ZSM-5 and Mo/MCM-22 are found to be effective catalysts for such reactions. Extensive research on the performance of such catalysts has been conducted and reported, and it has been found that the production performance depends on the structure and composition of the catalyst tested and how the catalyst is activated. Thus, research reported to date has focused on identifying a catalyst that can be activated to provide improved aromatization performance such as benzene yield from methane aromatization.

[0004] Representative publications of such research results include

- Smieskova et al. "Aromatization of methane on Mo modified zeolites: Influence

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