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(54) Title: PRODUCTION OF AROMATICS FROM RENEWABLE RESOURCES

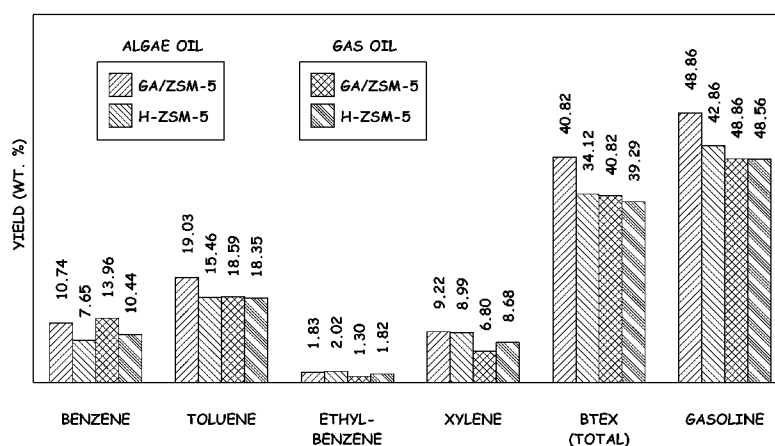


Fig. 10

(57) Abstract: Renewable oils are converted to aromatics, by contact with a catalytically-active form of gallium, for use in the petrochemical industry and/or for fuel blending components or additives. The renewable oil(s) feature high oxygen content, high H/C mole ratios, and high fatty acid or fatty acid ester content prior to heating and contact with the catalyst. The catalyst may be, for example, a gallium-doped version of one or more zeolite- alumina matrix catalysts with pore sizes having 10 oxygen atoms in the pore mouth, such as ZSM-5, ZSM-11, ZSM-23, MCM-70, SSZ-44, SSZ-58, SSZ-35, and ZSM-22. Aromatics -production from the renewable oils is enhanced at higher gallium-cation levels, with the preferred level being about 1.0 Ga/framework-Al. While various renewable oils, or "bio-oils," may be used, algae oil has exhibited very high BTEX yields over the gallium cation catalyst, under conditions at or near 1 atm and approximately 400 degrees C.