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### **C<sub>4</sub>/C<sub>5</sub>-Paraffins – raw material for the aromatics synthesis**

C<sub>4</sub>/C<sub>5</sub>-paraffins are a readily available and cheap raw material for the synthesis of different valuable chemicals, in particularly of aromatic hydrocarbons. The employment of high-siliceous pentasil-type zeolites (MFI) which exhibit high activity and selectivity, easy regenerated and resistant to poisons made up the aromatization of C<sub>4</sub>/C<sub>5</sub>-paraffins promising in commercial use.

In the present communication the data on butanes and *n*-pentane aromatization over MFI zeolites are summarized. The zeolite based catalysts with various promoters have been prepared, well characterized by different techniques (IR, XPS, ESR) and examined in C<sub>4</sub>/C<sub>5</sub>-paraffins transformation on laboratory scale.

The main regularities of the catalytic behavior of H-MFI and M/H-MFI systems (conversions, aromatics selectivity, product composition and reaction rates) have been established in dependence of preparation and pretreatment procedure, parent zeolite acidity, type and content of promoter.

The following results can be considered as original data discovered in this research:

- a) synthesis of active MFI zeolites in weak alkaline media;
- b) detailed screening of the catalysts with different promoters;
- c) the synergy of Pt and Ga action in bimetallic MFI provided the superior aromatics yields (more than 70%) from C<sub>4</sub>/C<sub>5</sub>-paraffins and low-temperature aromatization activity;
- d) the nature of active Brønsted and Lewis acid sites and the electronic state and dispersion of the promoters.