

Supplementary Materials

Effects of modifying acidity and reducibility on the activity of NaY zeolite in the oxidative dehydrogenation of octane

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Degree of crystallinity calculation:

$$\text{Crystallinity} = \frac{\text{Sum total of relative intensities of NaY observed}}{\text{Sum total of relative intensities of NaY standard}} \times 100 \%$$

Where the sum total of relative intensities taken were for the characteristic peaks (2θ 6.2°, 15.6° and 22.1°), Parent NaY was taken as the standard.

Table S1: Temperature programmed reduction results for the Ga-NaY zeolites

Catalyst	Peak Temperature (°C)	Mol of Hydrogen consumed (mol/g)
Ga-NaY	349	2,76
MgGa-NaY	383	1.31
CaGa-NaY	378	1,41
SrGa-NaY	388	0.13
BaGa-NaY	377	0.86

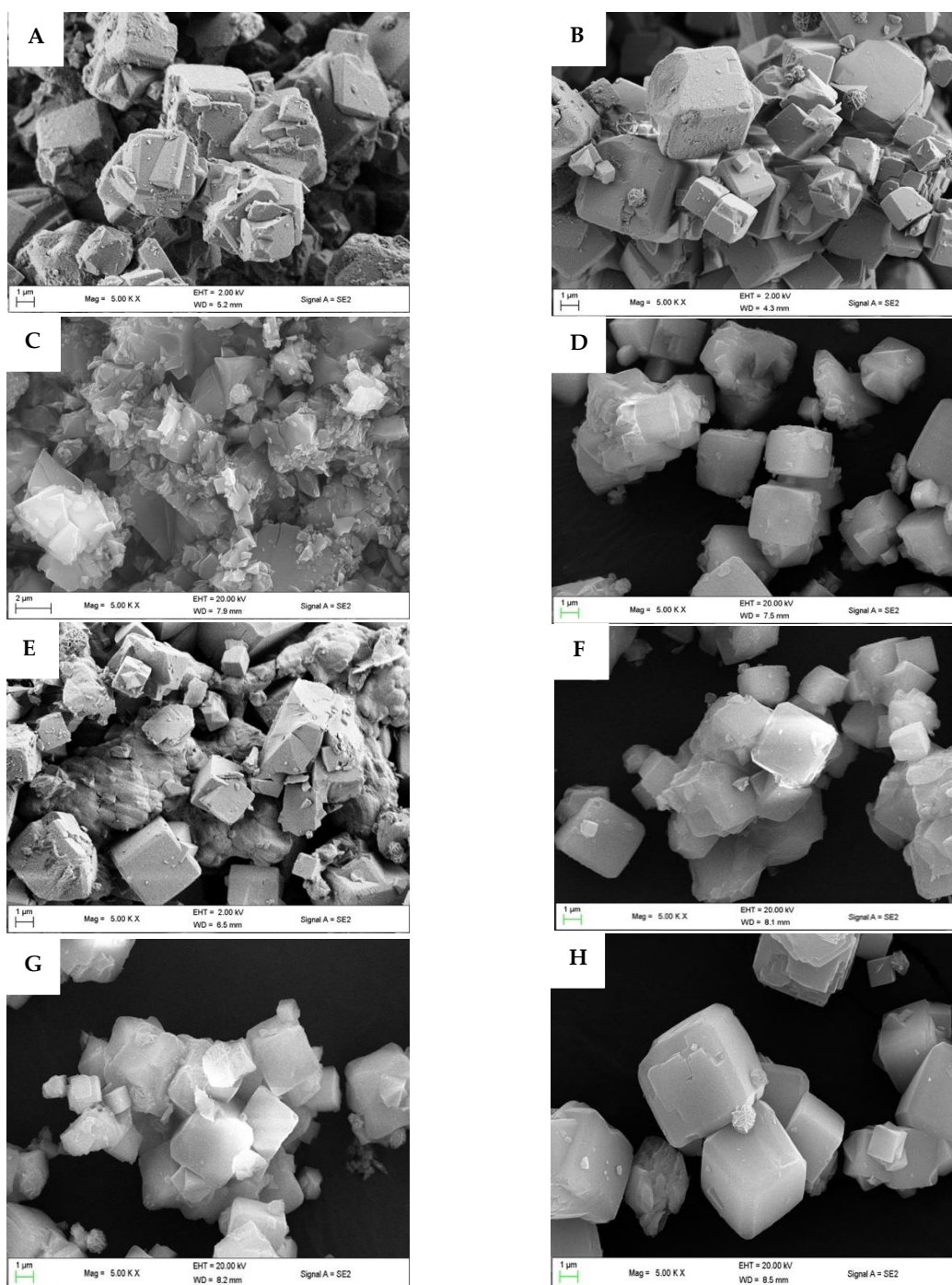


Figure S-1. SEM micrographs of (A) NaY, (B) Ga-NaY, (C) 0.02BaGa-NaY, (D) MgGa-NaY, (E) CaGa-NaY, (F) SrGa-NaY, (G) BaGa-NaY, (H) 0.08BaGa-NaY

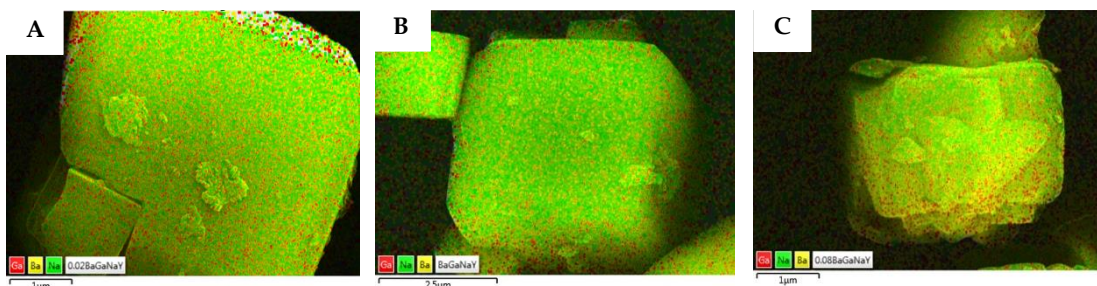


Figure S-2. SEM-EDX micrographs of (A) 0.02BaGa-NaY, (B) BaGa-NaY, (C) 0.08BaGa-NaY

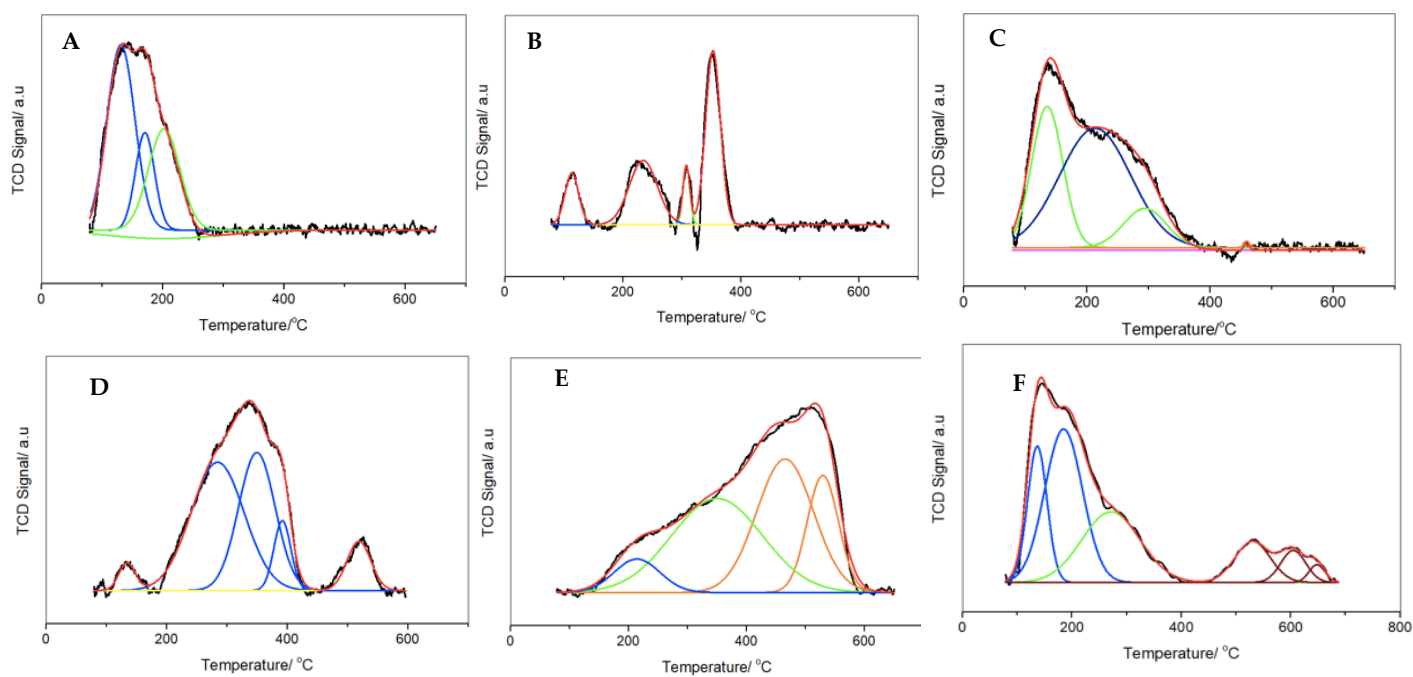


Figure S-3. NH₃-TPD Profiles of (A) NaY, (B) Ga-NaY, (C) MgGa-NaY, (D) SrGa-NaY, (E) BaGa-NaY, (F) CaGa-NaY,