

4. Conclusions

FE-SEM images of prepared USY and beta nanozeolite indicated that the particle size of these zeolites were less than 10 nm. Lower crystal diameter of beta zeolite with respect to that of USY zeolite caused higher pore volume and larger surface area.

USY zeolite with lower Si/Al ratio had more weak and total acidity than beta nanozeolite, while strong acidity of beta nanozeolite was more than USY zeolite. Ni-Mo/20USY catalyst with higher pore diameter and acidity in hydrocracking of vacuum gas oil was more selective compared to middle distillate products, while Ni-Mo/20beta catalyst with higher surface area had higher conversion than others.

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