

All data that support the findings of this study are provided in the manuscript and supplementary information (SI). Supplementary information: the catalytic performance of hierarchical zeolite; XRD, N₂ adsorption-desorption isotherms, SEM images, TEM images and NH₃-TPD curves of hierarchical zeolites; the textural properties of microporous and hierarchical ZSM-5 zeolites; N₂ adsorption-desorption isotherms and the textural properties of spent microporous and hierarchical ZSM-5 zeolites.