

Synthesis of High-Silica LTA and UFI Zeolites and NH₃-SCR Performance of Their Copper-Exchanged Form

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A series of LTA zeolites with Si/Al = 8.3-∞ and a UFI zeolite with Si/Al = 11 are synthesized using benzyimidazolium-based cations as organic structure-directing agents in fluoride media, if required, together with the tetramethylammonium ion. Among the LTA zeolites synthesized in the present study, two Cu-exchanged LTA catalysts containing similar amount of Cu contents (~3 wt %) with Si/Al = 11 and 16 showed enhanced operating temperature window with excellent hydrothermal stability for selective catalytic reduction of NO_x with NH₃ compared to Cu-SSZ-13 commercially being used for automotive applications.