Electronic Supplementary Information (SI)

Cu(dppf) complexes can be synthesized from Cu-exchanged solids and enable a quantification of the Cu-accessibility by $^{31}$P MAS NMR spectroscopy

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**Figure S1:** Small angle X-ray powder diffraction patterns of the mesoporous SBA-15.

**Figure S2:** X-ray powder diffraction patterns of the microporous H-MCM-22 zeolite.
Figure S3: $^{27}$Al MAS NMR spectra of Na-[Al]SBA-15, silica A200, and MCM-22.
Figure S4: SEM (BSE-detector) and EDX screenings on Cu@ A200.

Figure S5: SEM and EDX on Cu-MCM-22.
Figure S6: $^1$H MAS NMR spectra of Na-[Al]SBA-15 and H-MCM-22 before and after loading NH$_3$. 

$^1$H MAS NMR

Na-[Al]SBA-15

$^+$NH$_3$

H-MCM-22

$^+$NH$_3$

$\delta_{^1H}$ / ppm

15.0  10.0  5.0  0.0  -5.0
**Figure S7**: $^{31}$P MAS NMR spectra recorded using high-power decoupling (hpdec) by varying the delay time between scans for pure CuI(dppf) complex shows constantly increasing intensity due to long $T_1$ relaxation times.
**Figure S8:** $^{31}$P MAS NMR spectra recorded using high-power decoupling (hpdec) by varying the delay time between scans for Cu(dppf) complex in ion exchange position shows constant intensity after 10 s delay time.
Figure S9: $^1$H MAS NMR spectra of two samples (a and b) before (top) and after (bottom) removing adsorbed ethanol (peaks at chemical shifts $\delta_{\text{H}} = 3.6$ and 1.2 ppm). Removal of the solvent in vacuum is immanent to measure the correct solid mass.