

Supplementary material for:

Fine Tuning of Hierarchical Zeolite Beta Acid Sites Strength

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Table S1. Number of acid sites calculated from deconvoluted spectra of desorption of CD₃CN for HB-1 and HB-C series at 100 °C.

| SAMPLE | Total number of acid sites (μmol g ⁻¹) | Number of BAS (μmol g ⁻¹) | Number of LAS (μmol g ⁻¹) |
|--------|--|---------------------------------------|---------------------------------------|
| HB-1 | 199 | 118 | 81 |
| MgHB-1 | 583 | 181 | 401 |
| CoHB-1 | 269 | 76 | 193 |
| NiHB-1 | 193 | 15 | 178 |
| CuHB-1 | 65 | 39 | 26 |
| ZnHB-1 | 161 | 32 | 129 |
| HB-C | 208 | 126 | 82 |
| MgHB-C | 208 | 101 | 107 |
| CoHB-C | 226 | 109 | 117 |
| NiHB-C | 101 | 30 | 71 |
| CuHB-C | 68 | 42 | 24 |
| ZnHB-C | 175 | 69 | 106 |

Table S2. Number of acid sites calculated from deconvoluted spectra of desorption of CD₃CN for HB-1 and HB-C series at 150 °C.

| SAMPLE | Total number of acid sites (μmol g ⁻¹) | Number of BAS (μmol g ⁻¹) | Number of LAS (μmol g ⁻¹) |
|--------|--|---------------------------------------|---------------------------------------|
| HB-1 | 123 | 42 | 81 |
| MgHB-1 | 315 | 96 | 219 |
| CoHB-1 | 242 | 70 | 142 |
| NiHB-1 | 118 | 8 | 110 |
| CuHB-1 | 52 | 31 | 21 |
| ZnHB-1 | 97 | 8 | 88 |
| HB-C | 88 | 38 | 50 |
| MgHB-C | 158 | 79 | 78 |
| CoHB-C | 192 | 91 | 101 |
| NiHB-C | 83 | 26 | 57 |
| CuHB-C | 55 | 33 | 22 |
| ZnHB-C | 150 | 60 | 90 |

Table S3. Number of acid sites calculated from deconvoluted spectra of desorption of CD₃CN for HB-1 and HB-C series at 200 °C.

| SAMPLE | Total number of acid sites (μmol g ⁻¹) | Number of BAS (μmol g ⁻¹) | Number of LAS (μmol g ⁻¹) |
|--------|--|---------------------------------------|---------------------------------------|
| HB-1 | 106 | 38 | 68 |
| MgHB-1 | 225 | 93 | 131 |
| CoHB-1 | 146 | 34 | 112 |
| NiHB-1 | 105 | 7 | 98 |
| CuHB-1 | 42 | 21 | 21 |
| ZnHB-1 | 66 | 7 | 59 |
| HB-C | 81 | 32 | 49 |
| MgHB-C | 99 | 44 | 55 |
| CoHB-C | 185 | 84 | 101 |
| NiHB-C | 61 | 20 | 41 |
| CuHB-C | 31 | 19 | 12 |
| ZnHB-C | 134 | 45 | 89 |

Table S4. Number of acid sites calculated from deconvoluted spectra of desorption of CD₃CN for HB-1 and HB-C series at 300 °C.

| SAMPLE | Total number of acid sites (μmol g ⁻¹) | Number of BAS (μmol g ⁻¹) | Number of LAS (μmol g ⁻¹) |
|--------|--|---------------------------------------|---------------------------------------|
| HB-1 | 44 | 25 | 19 |
| MgHB-1 | 121 | 41 | 80 |
| CoHB-1 | 95 | 27 | 68 |
| NiHB-1 | 42 | 2 | 40 |
| CuHB-1 | 29 | 9 | 20 |
| ZnHB-1 | 28 | 4 | 24 |
| HB-C | 69 | 32 | 37 |
| MgHB-C | 82 | 36 | 46 |
| CoHB-C | 125 | 57 | 68 |
| NiHB-C | 20 | 2 | 18 |
| CuHB-C | 24 | 16 | 8 |
| ZnHB-C | 114 | 38 | 76 |