

## *Electronic Supplementary Information*

### **Clarification of acid site location in MSE-type zeolites by spectroscopic approaches combined with catalytic activity: Comparison between UZM-35 and MCM-68**

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## Calculating methods for conversion and selectivity.

The conversion and selectivity in the catalytic reactions were calculated by following equations Eq. S1 and S2,

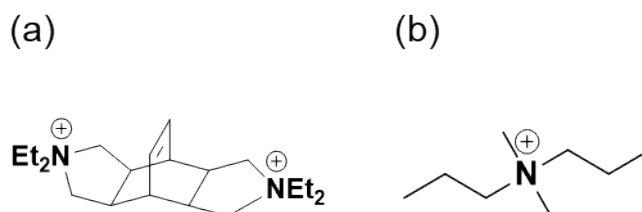
$$\text{Conversion of substrate} = 1 - \frac{\text{amount of substrate (in reacted gas)}}{\text{amount of detected compounds (in reacted gas)}} \times 100 \quad (\text{Eq. S1})$$

$$\text{Product distribution} = \frac{\text{amount of the target product}}{\text{amount of detected products (in reacted gas)}} \times 100 \quad (\text{Eq. S2})$$

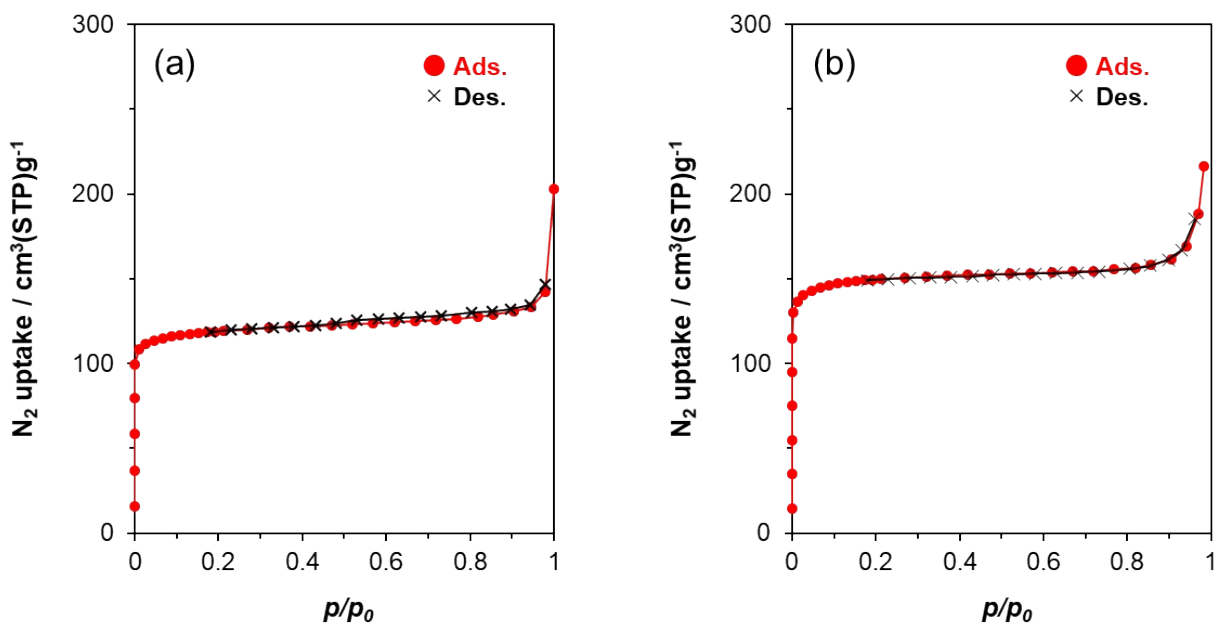
**Table S1** Physicochemical properties of control samples.

Samples	Si/Al (-)	$S_{\text{BET}}^{\text{a}}$ ( $\text{m}^2 \text{g}^{-1}$ )	$V_{\text{micro}}^{\text{b}}$ ( $\text{cm}^3 \text{g}^{-1}$ )	Number of acid sites <sup>c</sup> ( $\text{mmol g}^{-1}$ )
ZSM-5	15	472	0.17	0.509
Beta	12.5	596	0.23	0.625

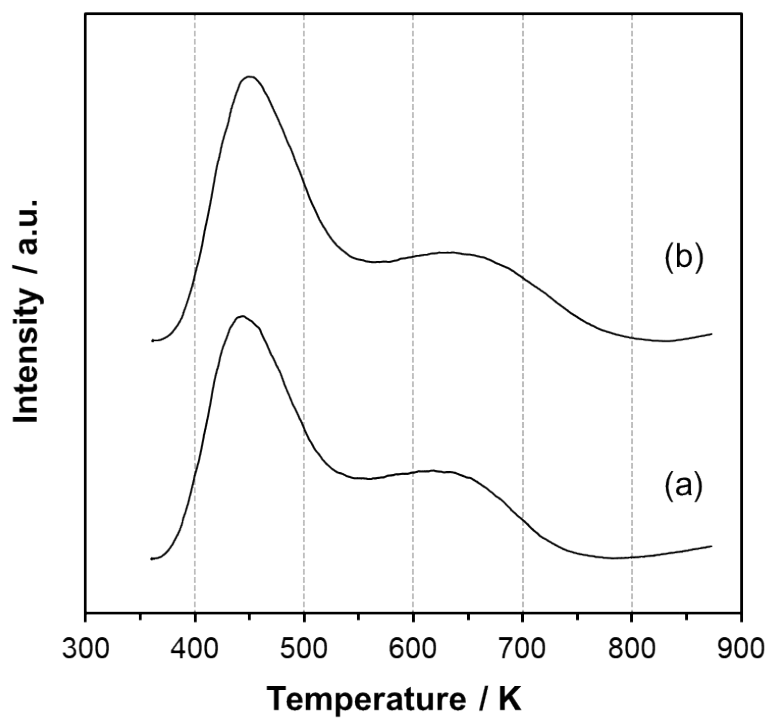
<sup>a</sup>BET specific surface area. <sup>b</sup>Micropore volume. Determined by <sup>c</sup>NH<sub>3</sub>-TPD.



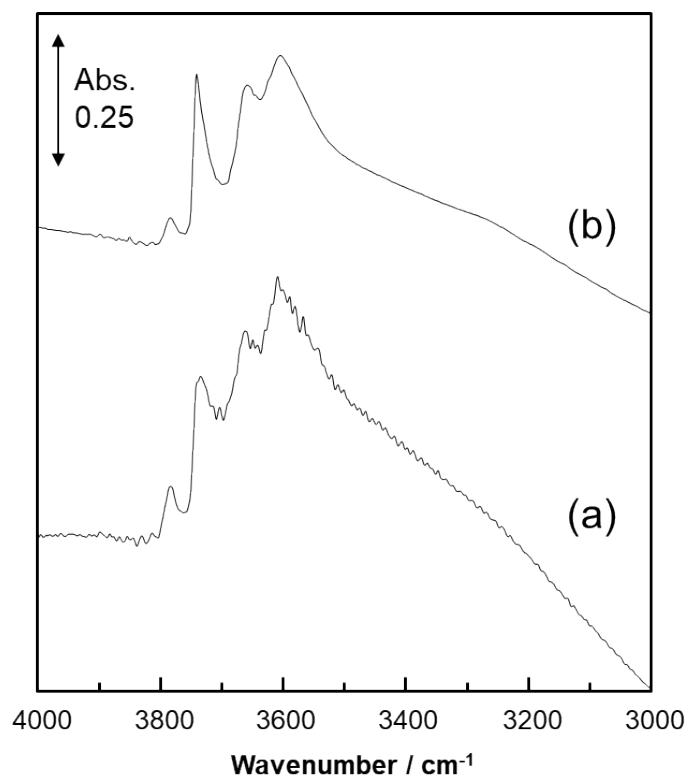
**Scheme S1** OSDAs used for synthesis of (a) MCM-68 and (b) UZM-35.



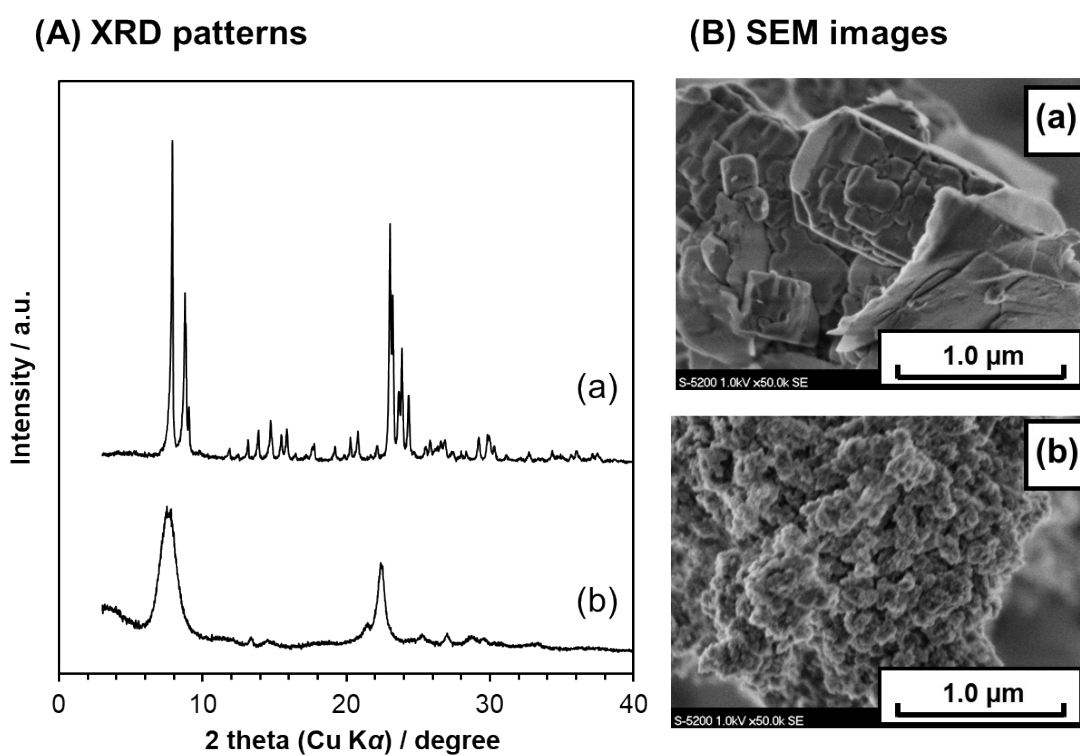
**Fig. S1**  $N_2$  adsorption-desorption isotherms of (a) UZM-35 and (b) MCM-68.



**Fig. S2**  $NH_3$ -TPD profiles of (a) UZM-35 and (b) MCM-68.



**Fig. S3** IR spectra of (a) UZM-35 and (b) MCM-68.



**Fig. S4** (A) XRD patterns and (B) SEM images of (a) ZSM-5 and (b) Beta.