SUPPORTING INFORMATION

Synthesis of Hierarchical Porous Ti-ZSM-5: A High Active Catalyst for Benzene Alkylation with Methanol

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Conversion of benzene, utilization of methanol and selectivity of toluene, xylene and ethylbenzene were defined as follows:

$$\text{Conversion of benzene} = \frac{\text{benzene in feed} - \text{benzene in product}}{\text{benzene in feed}} \times 100\%$$

$$\text{Utilization of methanol} = \frac{\text{methanol in alkyl aromatics product}}{\text{methanol in feed}} \times 100\%$$

$$\text{Selectivity of toluene} = \frac{\text{n(toluene)}}{\text{n(alkyl aromatics)}} \times 100\%$$

$$\text{Selectivity of xylene} = \frac{\text{n(xylene)}}{\text{n(alkyl aromatics)}} \times 100\%$$

$$\text{Selectivity of ethylbenzene} = \frac{\text{n(ethylbenzene)}}{\text{n(alkyl aromatics)}} \times 100\%$$

Table S1. Composition of Ti in hierarchical porous Ti-ZSM-5 catalysts.

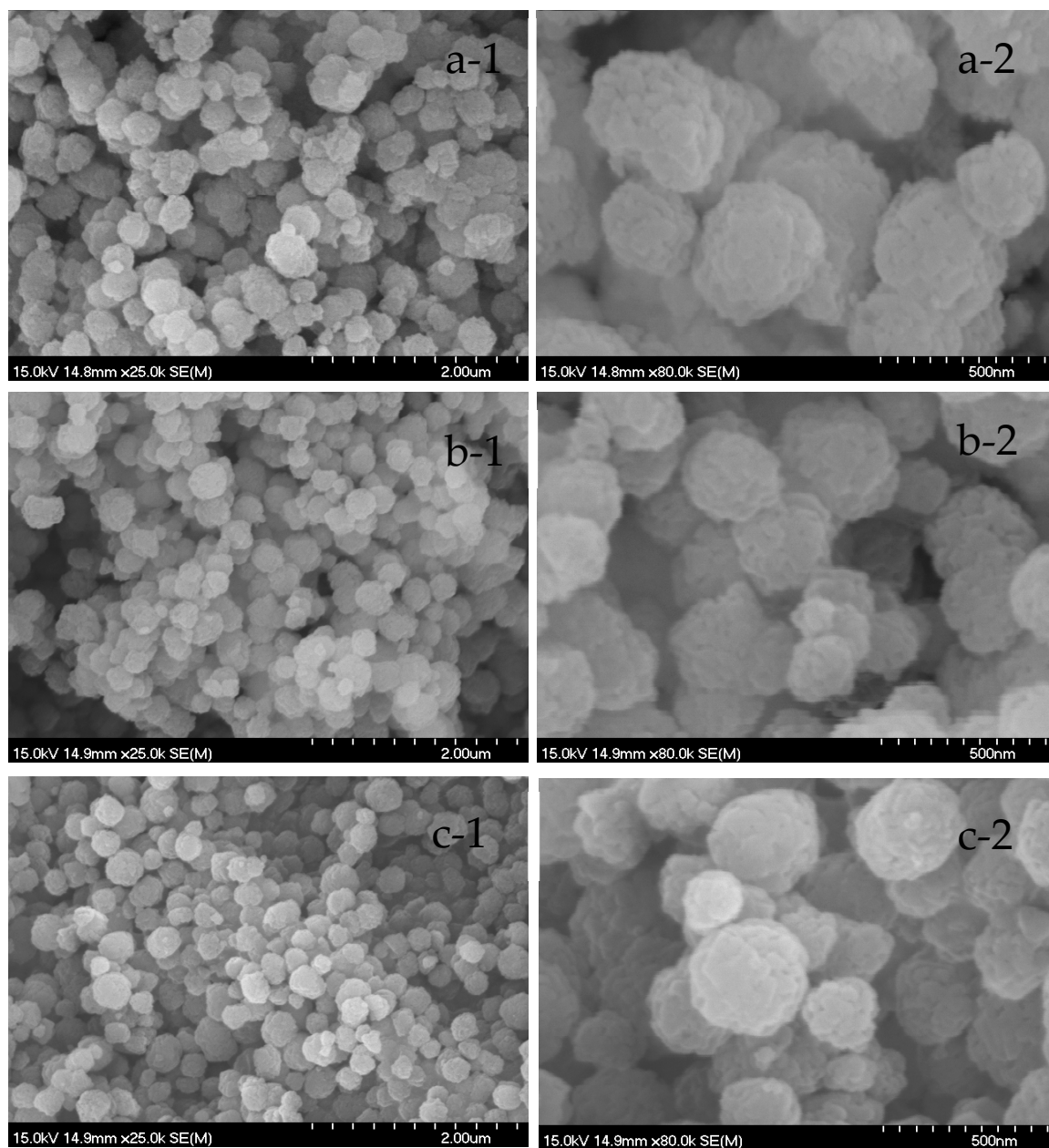| Catalyst	Composition (ICP-AES) Ti/mg.kg^{-1}
00Ti-ZSM-5	0
20Ti-ZSM-5	308
40Ti-ZSM-5	737
60Ti-ZSM-5	1525
80Ti-ZSM-5	2112
85Ti-ZSM-5	2327
90Ti-ZSM-5	2890
100Ti-ZSM-5	3125

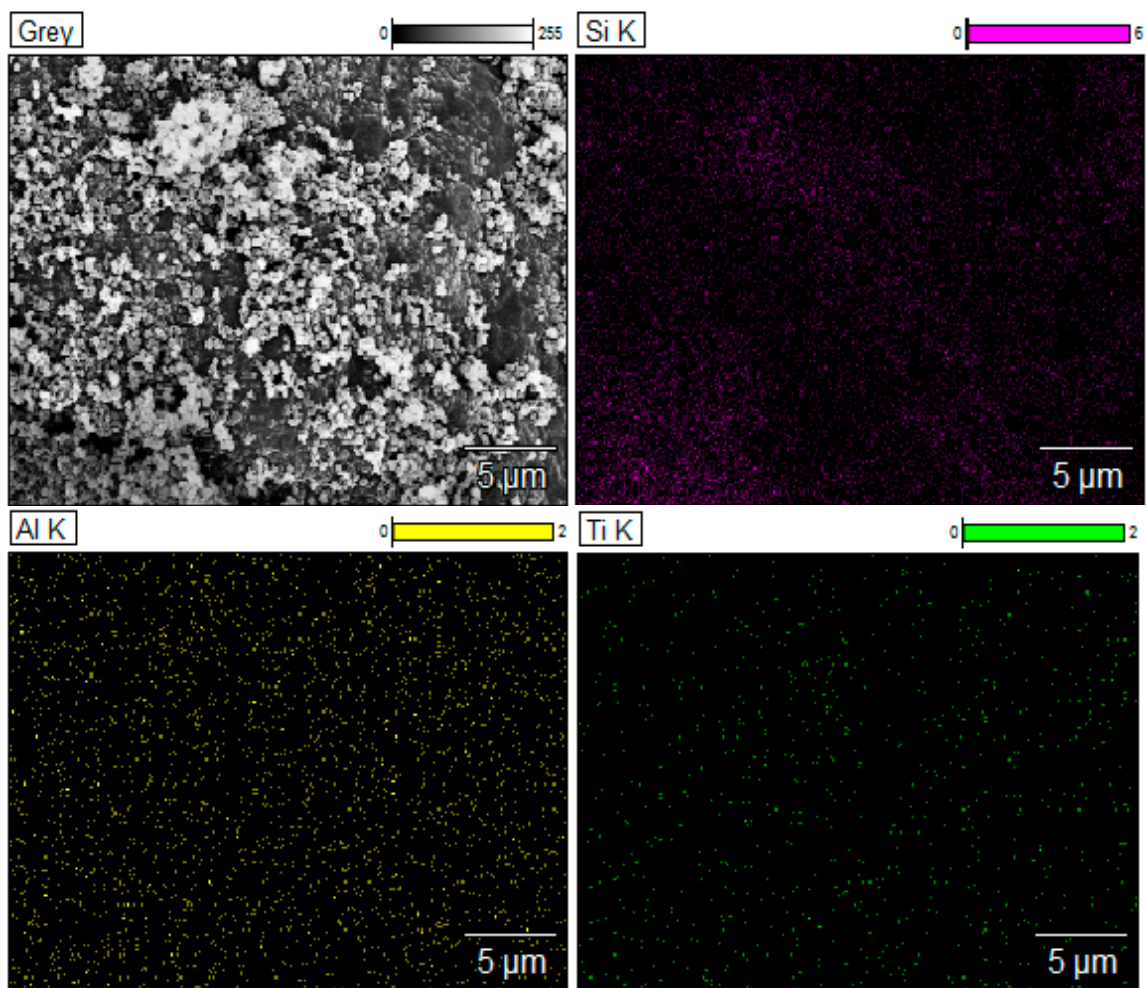**Figure S1.** SEM images of hierarchical porous Ti-ZSM-5: **a**.20Ti-ZSM-5 **b**.40Ti-ZSM-5 **c**.60Ti-ZSM-5.

Figure S2. SEM-EDS mapping (Si, Al and Ti) of 40Ti-ZSM-5 catalyst.