

*Supporting Information for*

**A green and sustainable synthesis of nanometer ZSM-5  
without organotemplates via utilizing recycled mother  
liquid**

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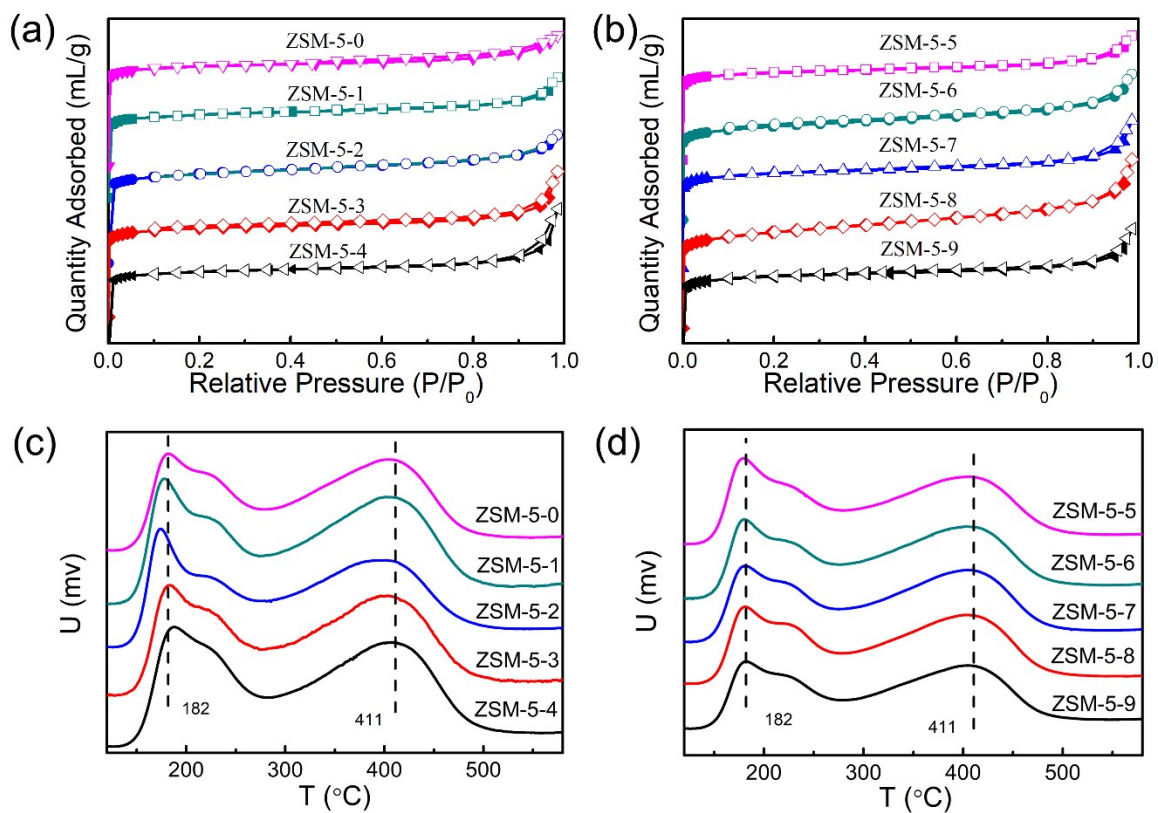
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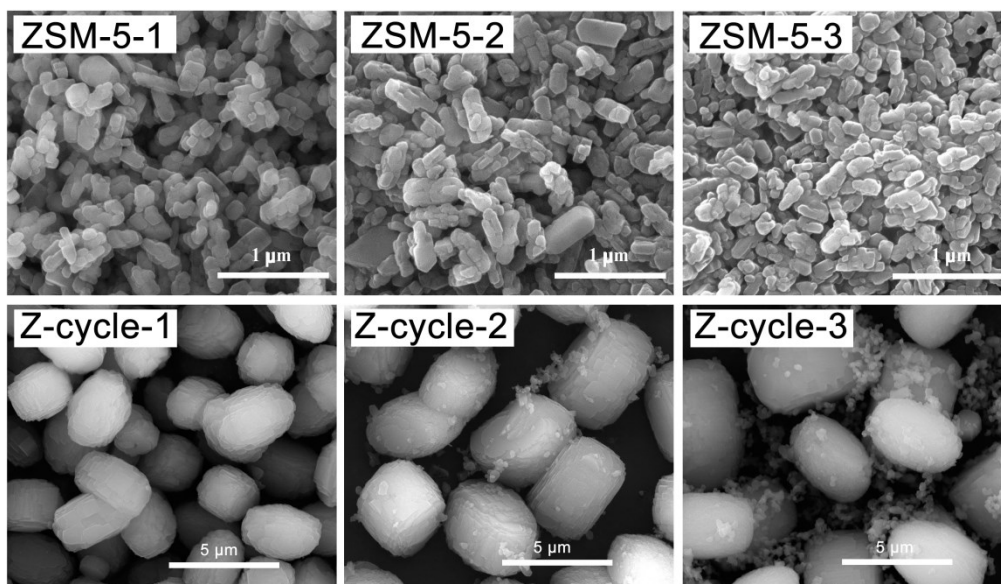
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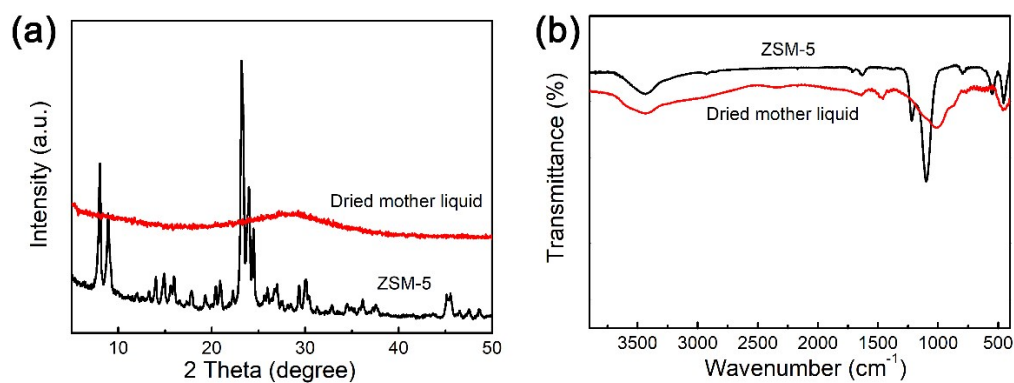
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**Fig. S1** (a, b) N<sub>2</sub> adsorption and desorption isotherms, and (c, d) NH<sub>3</sub>-TPD curves of ZSM-5-0 and ZSM-5-n synthesized with recycled mother liquid.



**Fig. S2.** ZSM-5 zeolites with self-made S-1 seeds were prepared via using recycled mother liquid compared with the samples without S-1 seeds added under the same conditions.



**Fig. S3.** (a) XRD patterns and (b) FT-IR spectra of ZSM-5 zeolites and dried mother liquid

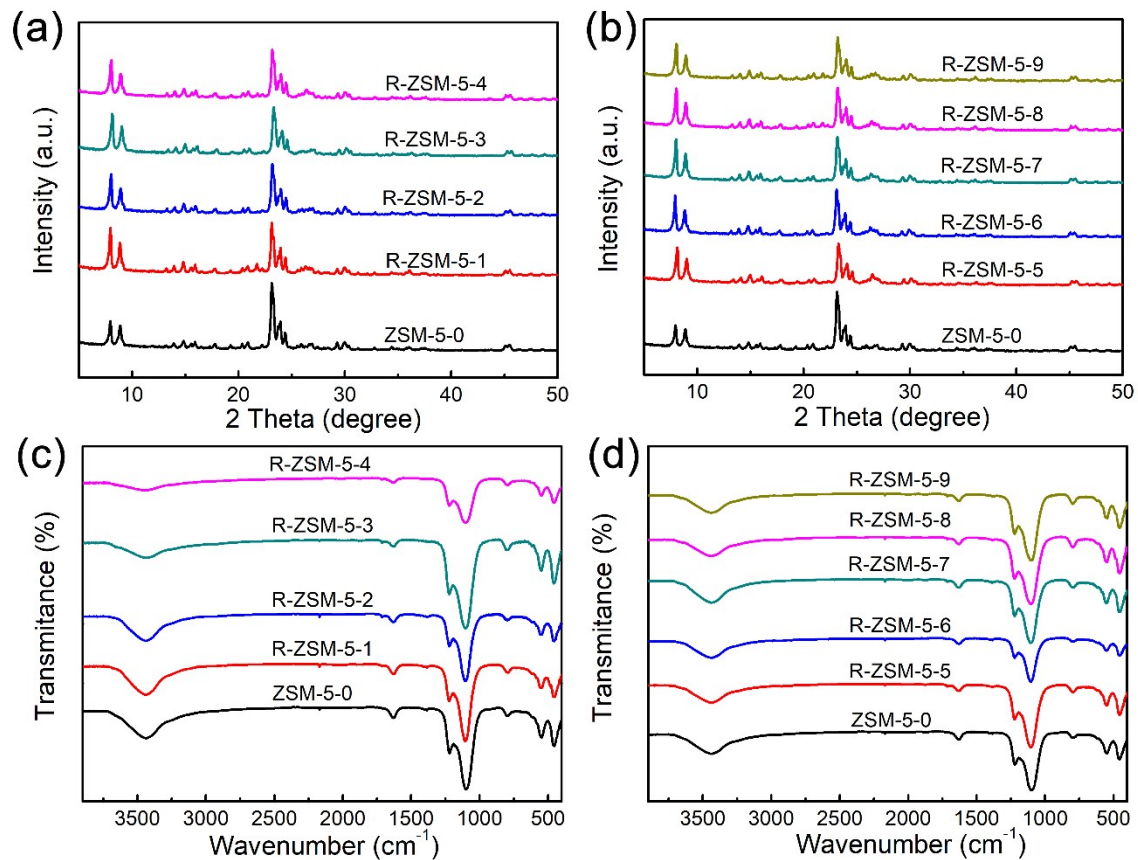


Fig. S4 (a, b) XRD patterns and (c, d) FT-IR spectra of ZSM-5 zeolites (R represents the sample after reaction)

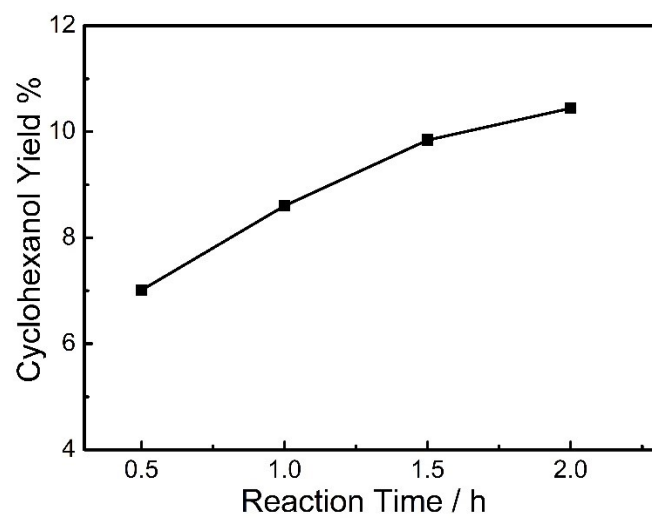


Fig. S5 Effect of different reaction time on the yield of cyclohexanol. (Catalyst: ZSM-5-0; reaction time: 0.5, 1.0, 1.5 and 2.0 h)