

Supporting Information

Micro-structured ZSM-11 catalyst on stainless-steel microfibers for improving glycerol dehydration to acrolein

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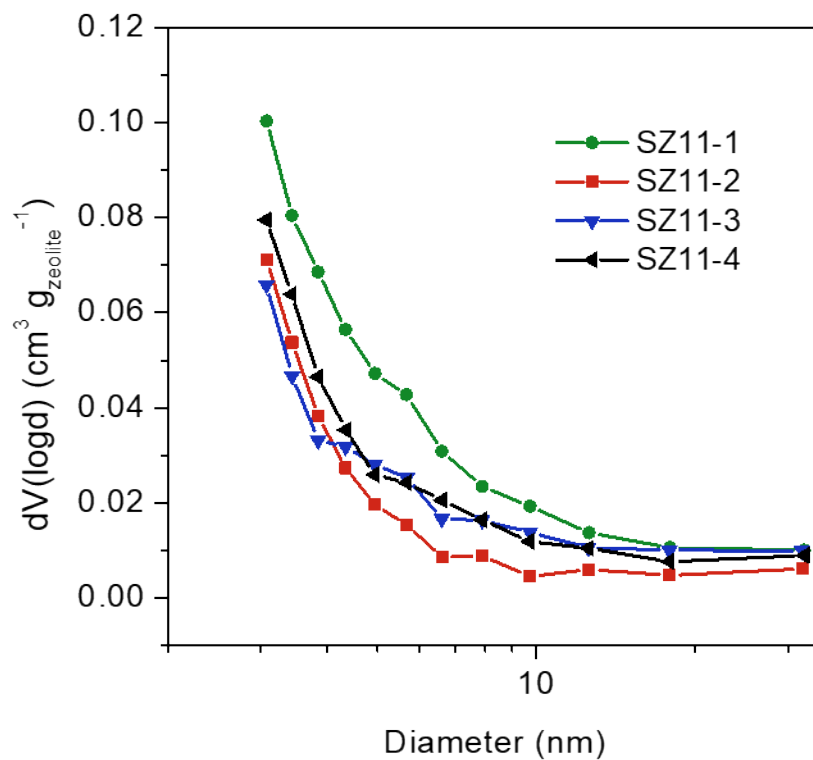


Figure S1. Barrett-Joyner-Halenda (BJH) mesopore size distribution of the pure zeolite layers in ZSM-11/SS-fiber catalysts with various $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratios (not including the mass of SS-fiber).

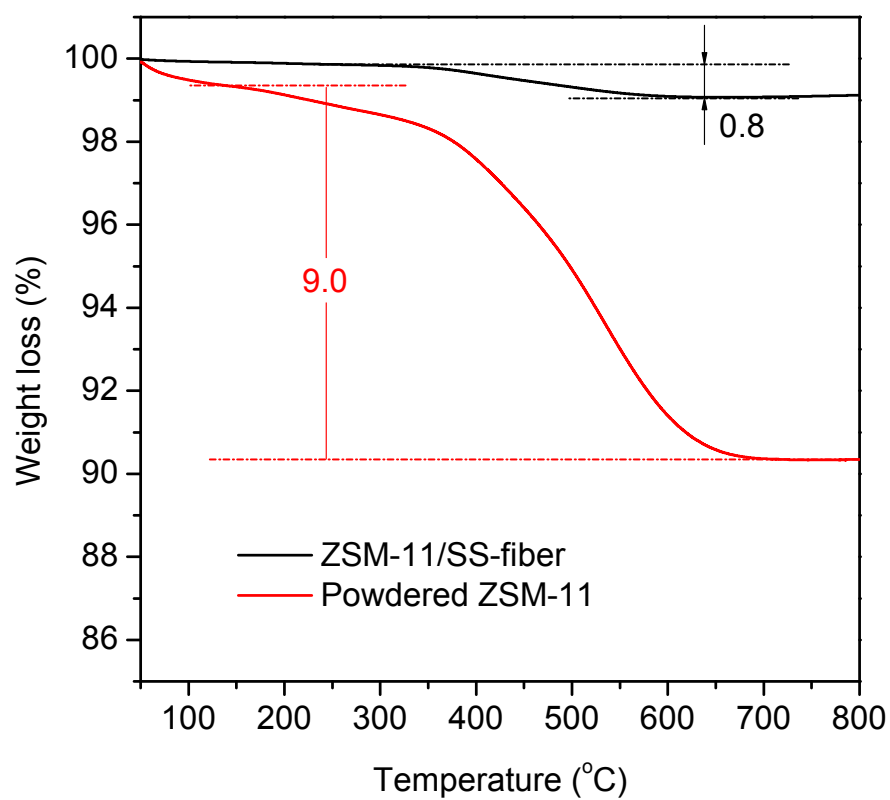


Figure S2. TGA profiles of the ZSM-11/SS-fiber and powdered ZSM-11 catalysts after 8 h on stream.

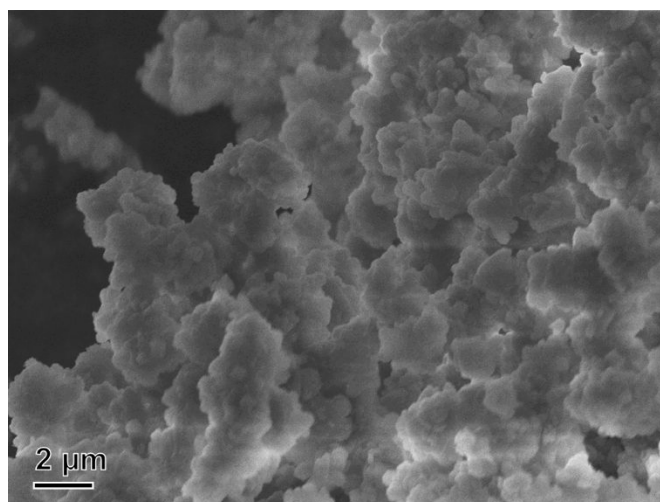


Figure S3. SEM image of powdered ZSM-11.

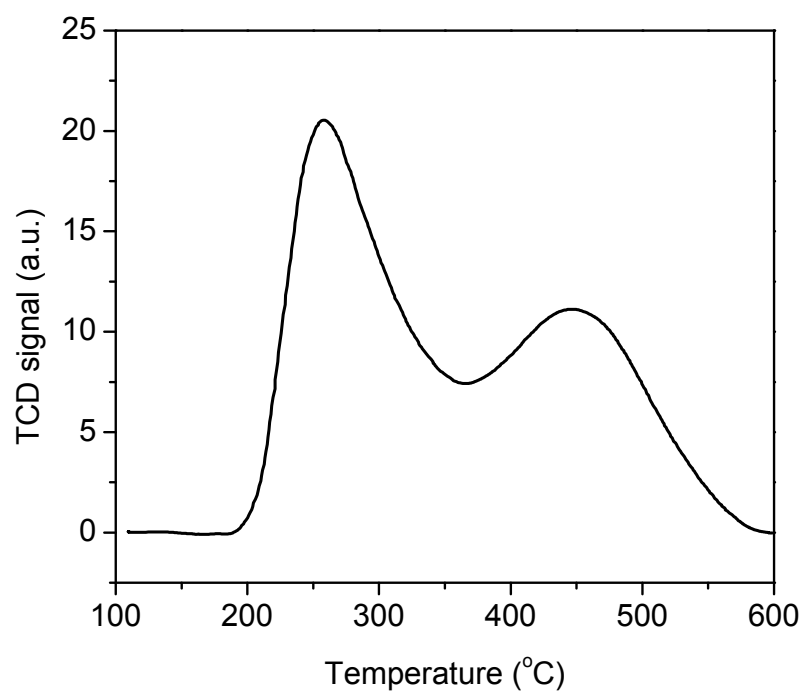


Figure S4. NH_3 -TPD profiles of powdered ZSM-11.

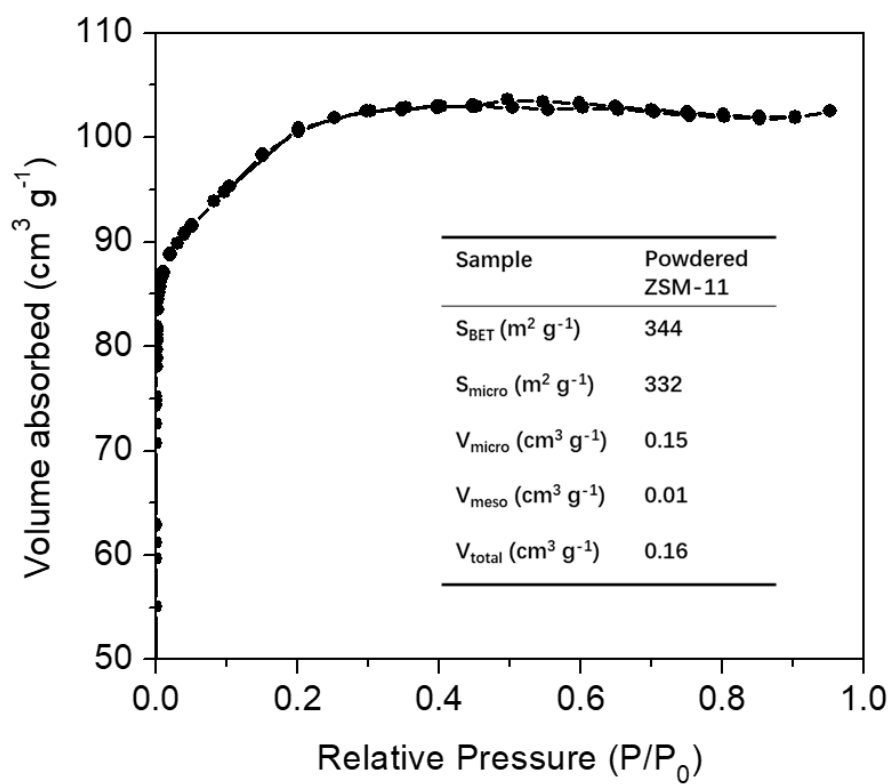


Figure S5. N_2 adsorption-desorption isotherms of powdered ZSM-11.

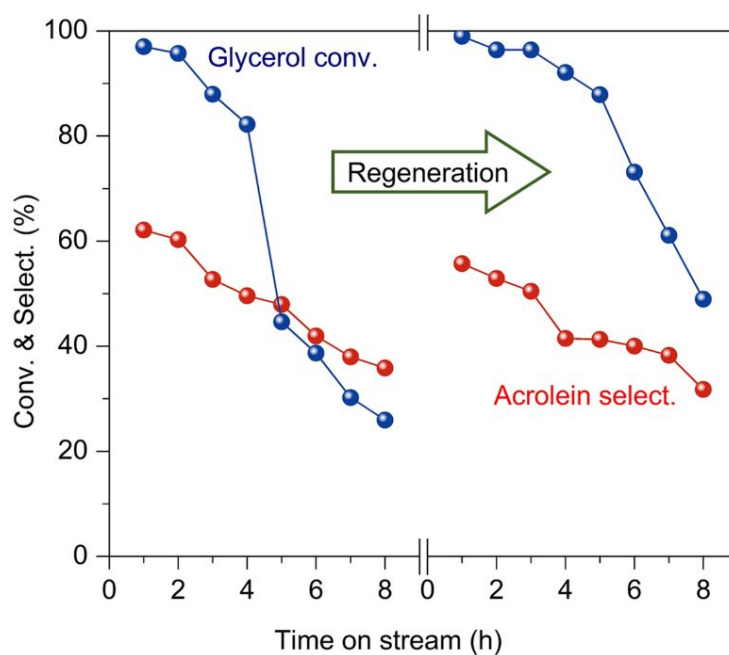


Figure S6. Glycerol conversion and acrolein selectivity against time on stream using the regenerated ZSM-11/SS-fiber catalyst. Reaction conditions: 300 °C, 10 wt.% glycerol in water, N₂ flow rate of 30 mL min⁻¹, zeolite mass of 0.1 g. Regeneration conditions: 550 °C in air for 5 hours.