

## SUPPLEMENTARY INFORMATION

# Influence of Preparation Conditions on the Catalytic Performance of Mo/H-ZSM-5 for Methane Dehydroaromatization

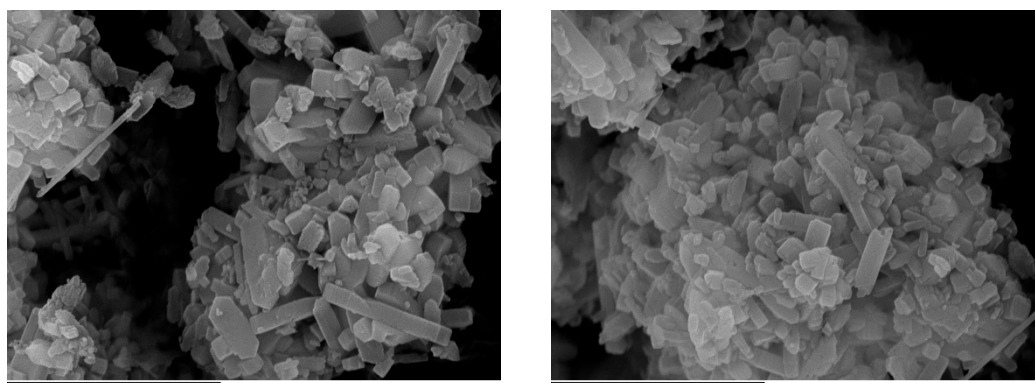
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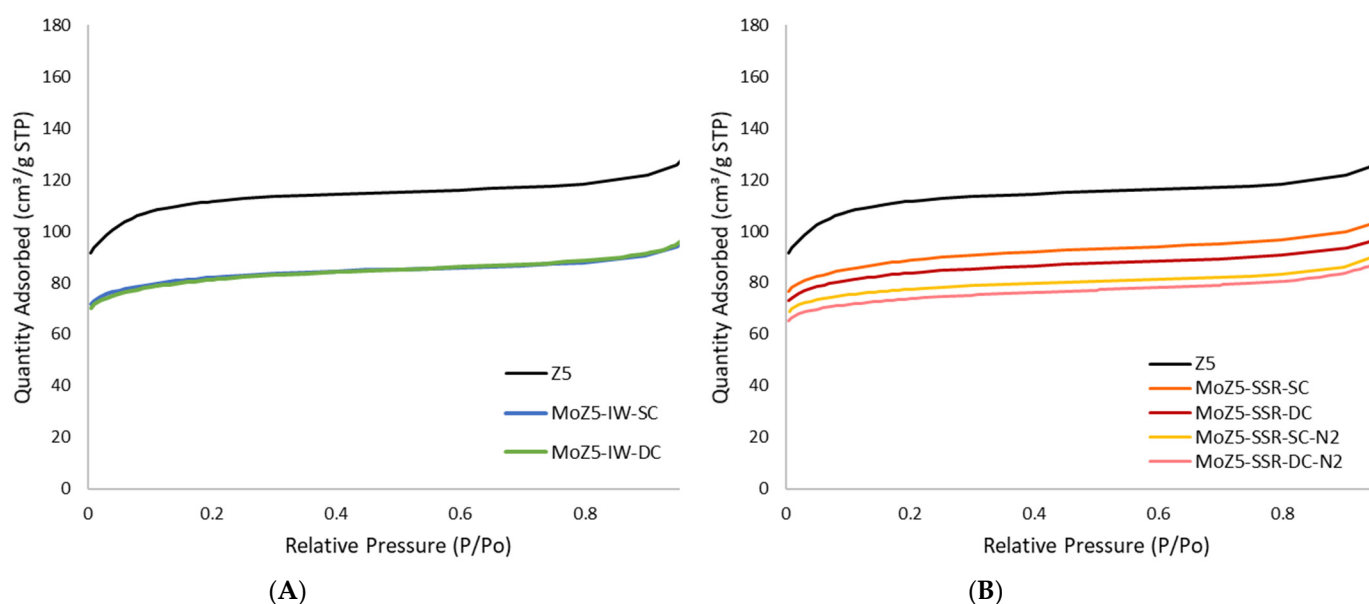
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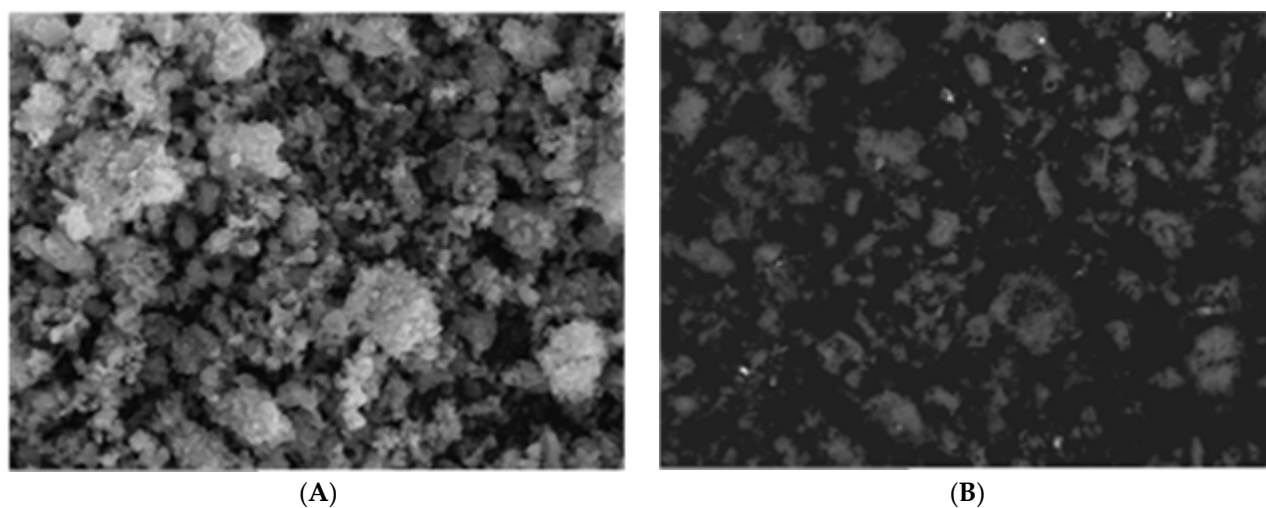
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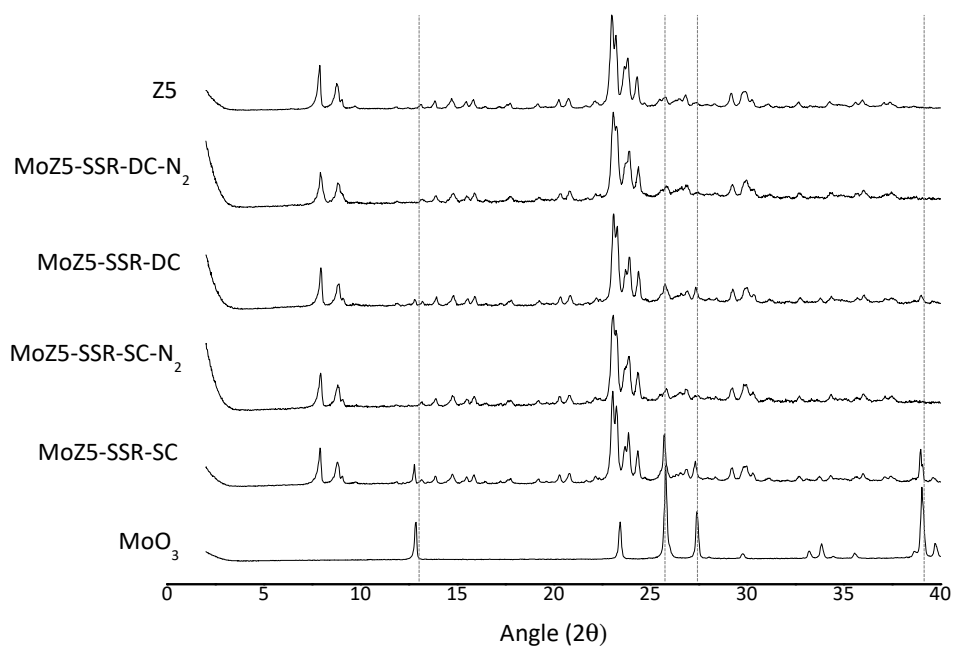
**Figure S1.** FESEM images of the parent ZSM-5 zeolite.



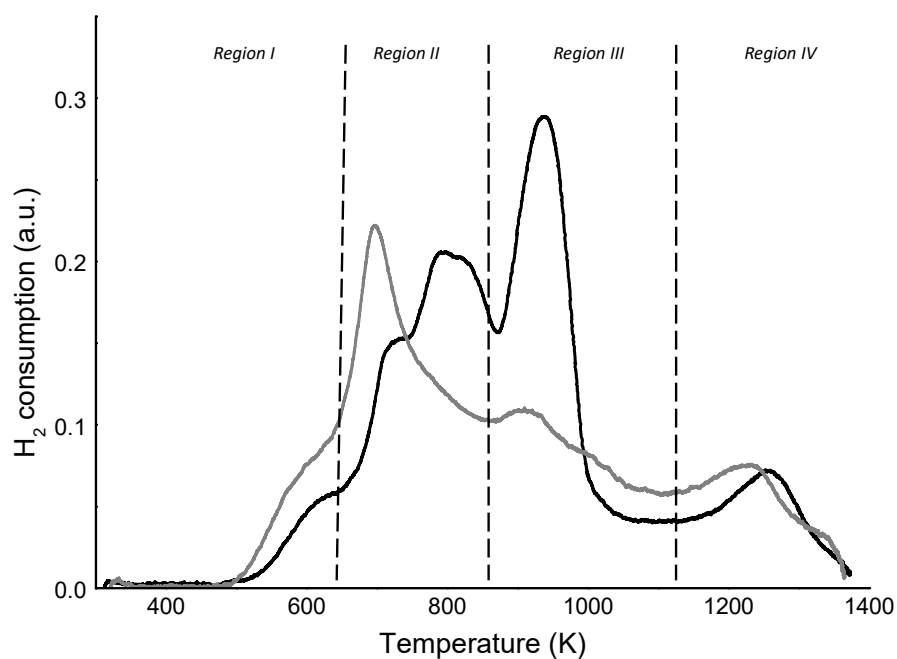
**Figure S2.** N<sub>2</sub> adsorption isotherms of the parent ZSM-5 zeolite and the Mo-loaded catalysts. (A) Samples prepared by incipient wetness impregnation (IW); (B) samples prepared by solid state reaction (SSR).



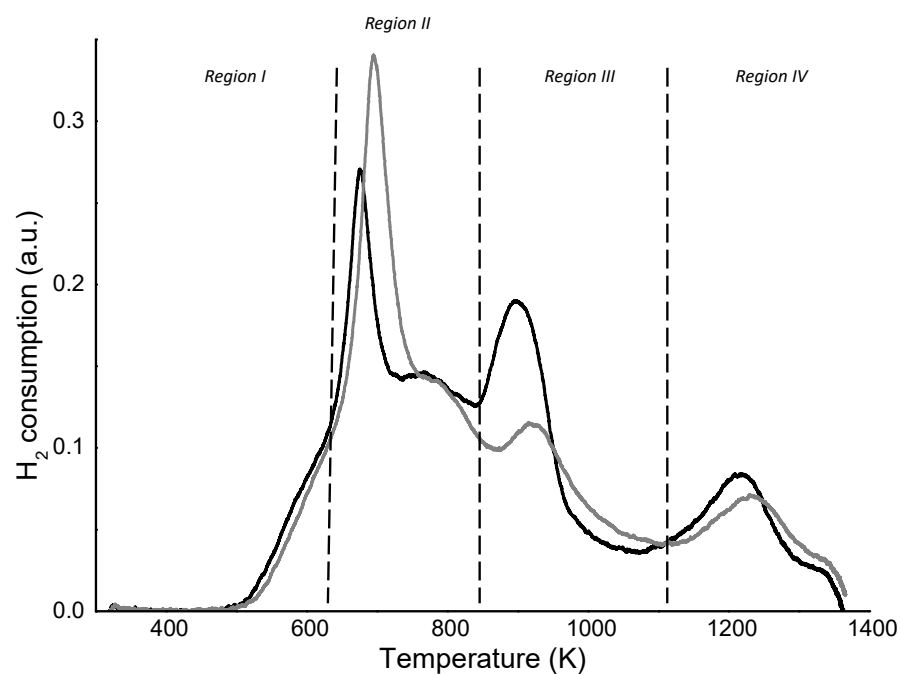
**Figure S3.** SEM images using a secondary electron detector (A) and a backscattered electron detector (B) for the MoZ5-SSR-SC catalyst after being analyzed by H<sub>2</sub>-TPR.



**Figure S4.** PXRD patterns of the Mo/ZSM-5 catalysts prepared by solid state ion exchange reaction (SSR). The most characteristic peaks related to the presence of MoO<sub>3</sub> are marked with a dotted line.



(a)



(b)

**Figure S5.** H<sub>2</sub>-TPR profiles for the Mo/ZSM-5 catalyst prepared by solid state ion exchange reaction calcined in static conditions (A), MoZ5-SSR-SC (black line) and MoZ5-SSR-SC-N<sub>2</sub> (grey line), and in dynamic conditions (B), MoZ5-SSR-DC (black line) and MoZ5-SSR-DC-N<sub>2</sub> (grey line).