

## Supplementary Information

A manuscript submitted to *RSC Advances*

**Enhancement of hydrocarbon production and catalyst stability during catalytic conversion of biomass pyrolysis-derived compound over hierarchical HZSM-5**

---

S. S. Shao, H. Y. Zhang\*, D. K. Shen, R. Xiao\*

Key Laboratory of Energy Thermal Conversion and Control, Ministry of Education, Southeast University, Nanjing  
210096, P.R. China

**\*Corresponding author:**

**Huiyan Zhang**

key Laboratory of Energy Thermal Conversion and Control, Ministry of Education,  
School of Energy and Environment  
Southeast University,  
Nanjing 210096, P.R. China,  
E-mail:[hyzhang@seu.edu.cn](mailto:hyzhang@seu.edu.cn)

**Rui Xiao**

key Laboratory of Energy Thermal Conversion and Control, Ministry of Education,  
School of Energy and Environment  
Southeast University,  
Nanjing 210096, P.R. China,  
E-mail:[ruixiao@seu.edu.cn](mailto:ruixiao@seu.edu.cn)

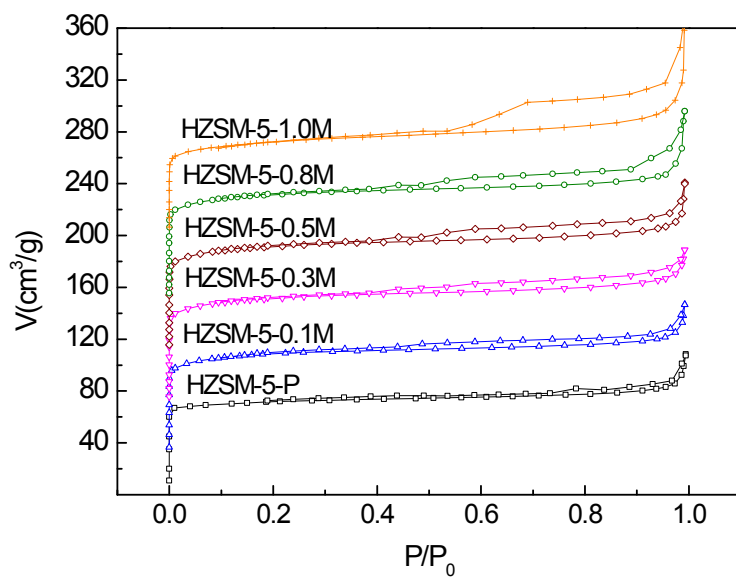


Fig. S1 Nitrogen adsorption and desorption isotherms of parent and hierarchical HZSM-5 catalysts

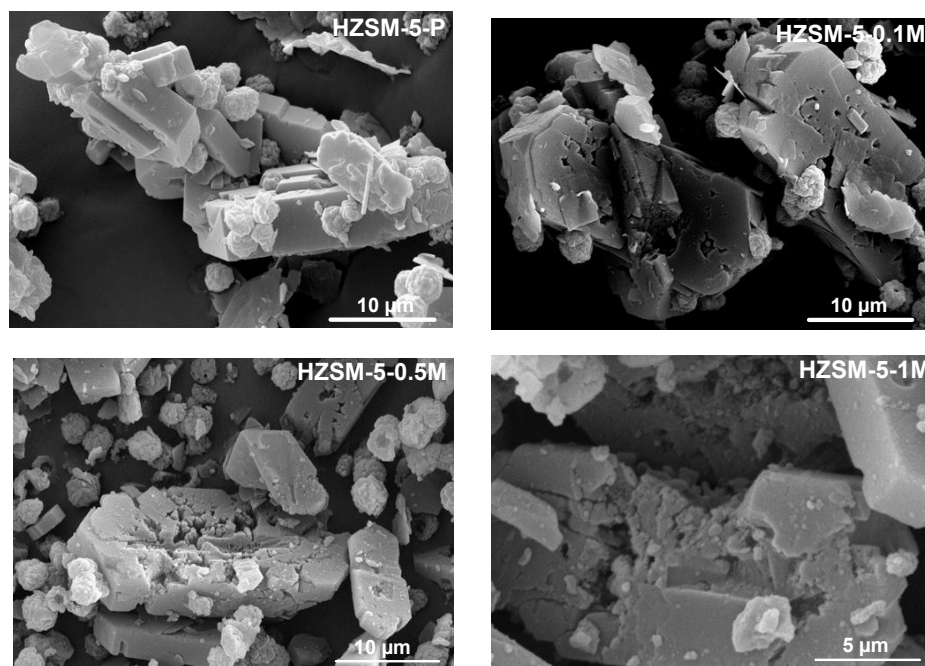


Fig. S2 SEM images of parent and hierarchical HZSM-5

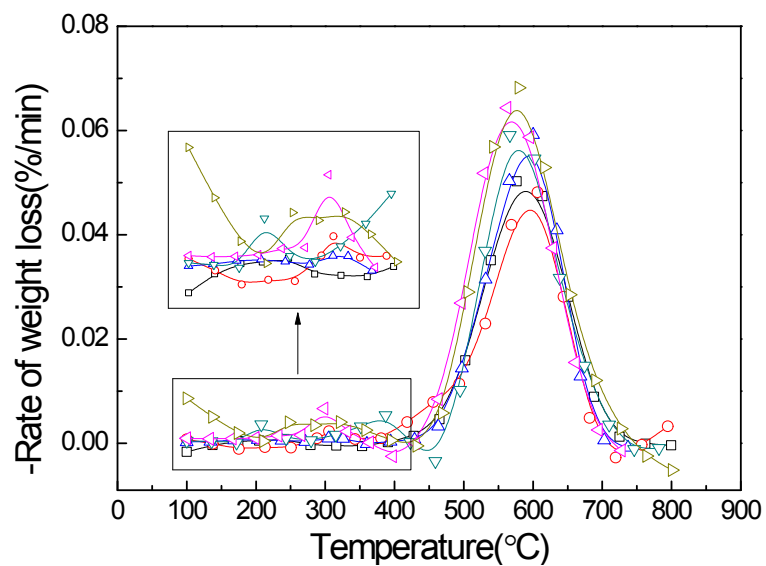


Fig. S3 DTG curve during regeneration of deactivated catalysts with different alkali treating conditions ( $\square$ , HZSM-5-P;  $\circ$ , HZSM-5-0.1M;  $\triangle$ , HZSM-5-0.3M;  $\nabla$ , HZSM-5-0.5M;  $\triangleleft$ , HZSM-5-0.8M;  $\triangleright$ , HZSM-5-1M)

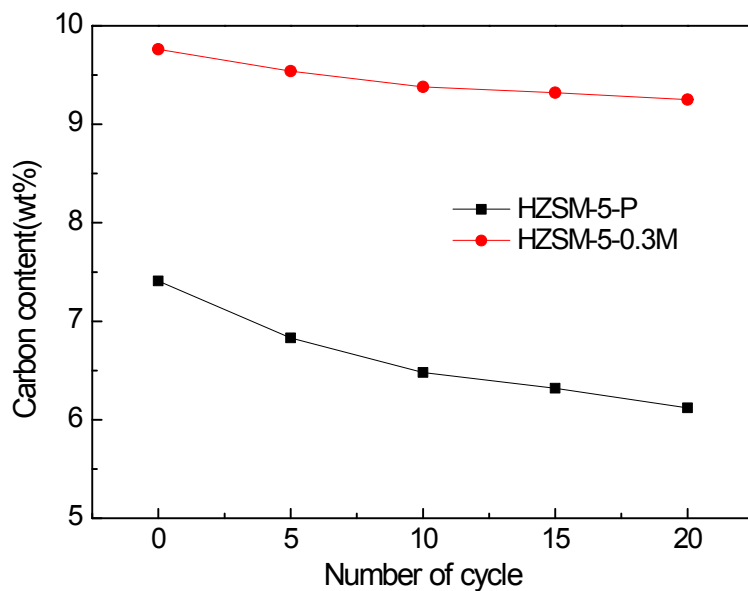


Fig. S4 Coke content of original catalysts and those used for cycles