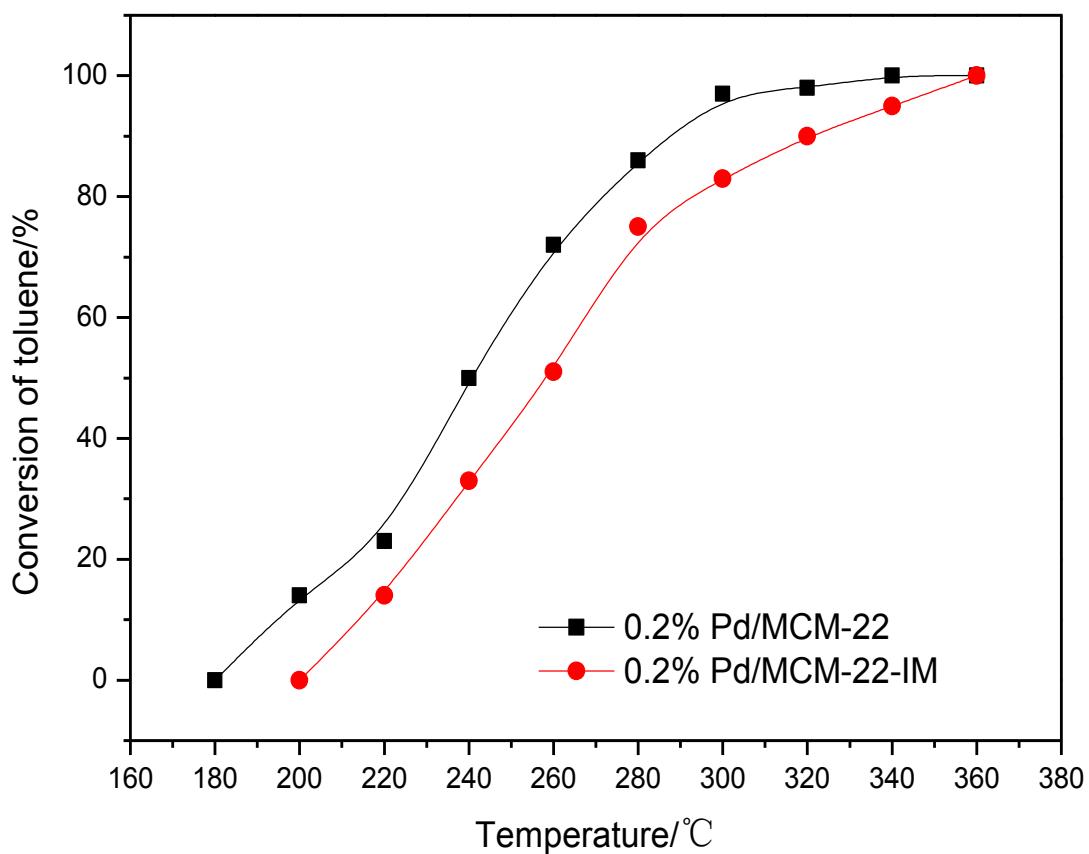
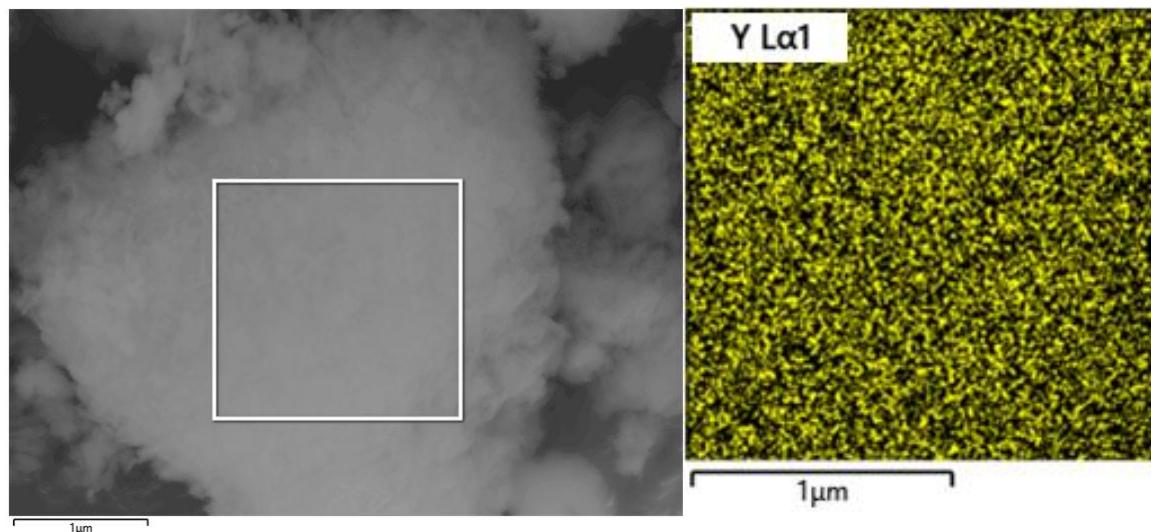


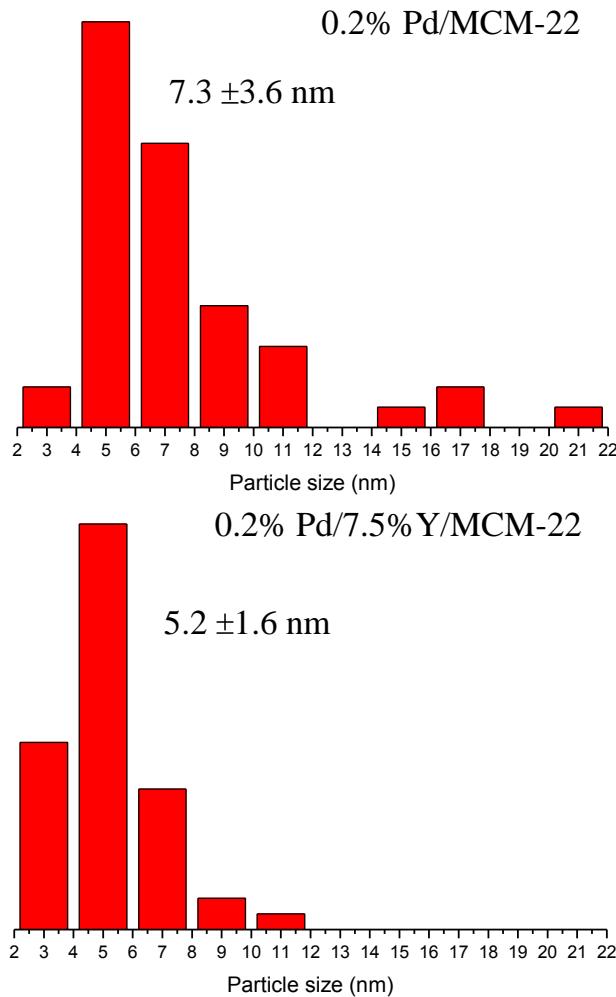
## Supporting figures



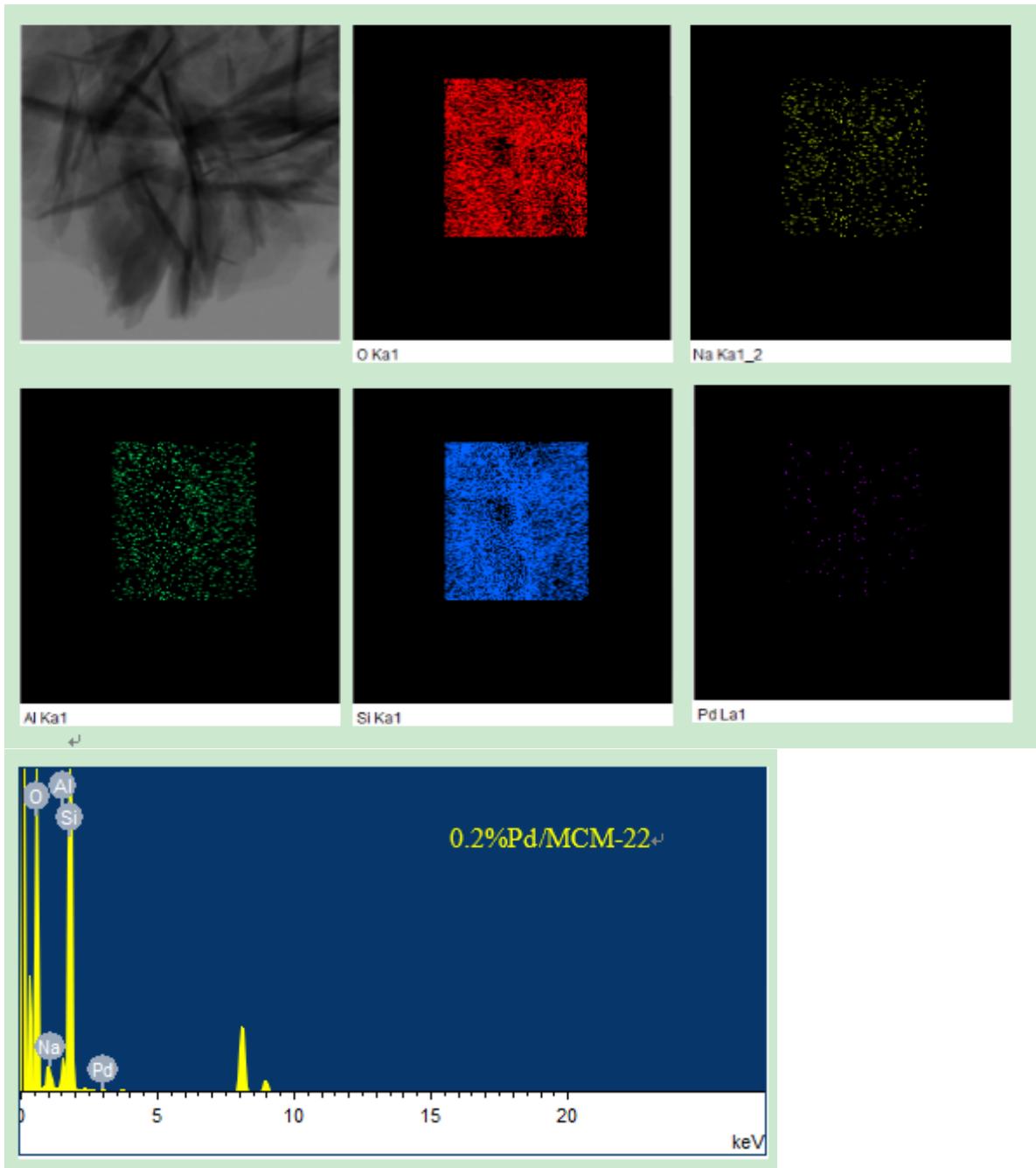
**Figure. S1.** The comparison of different preparation methods on catalytic activity of 0.2%Pd/MCM-22.

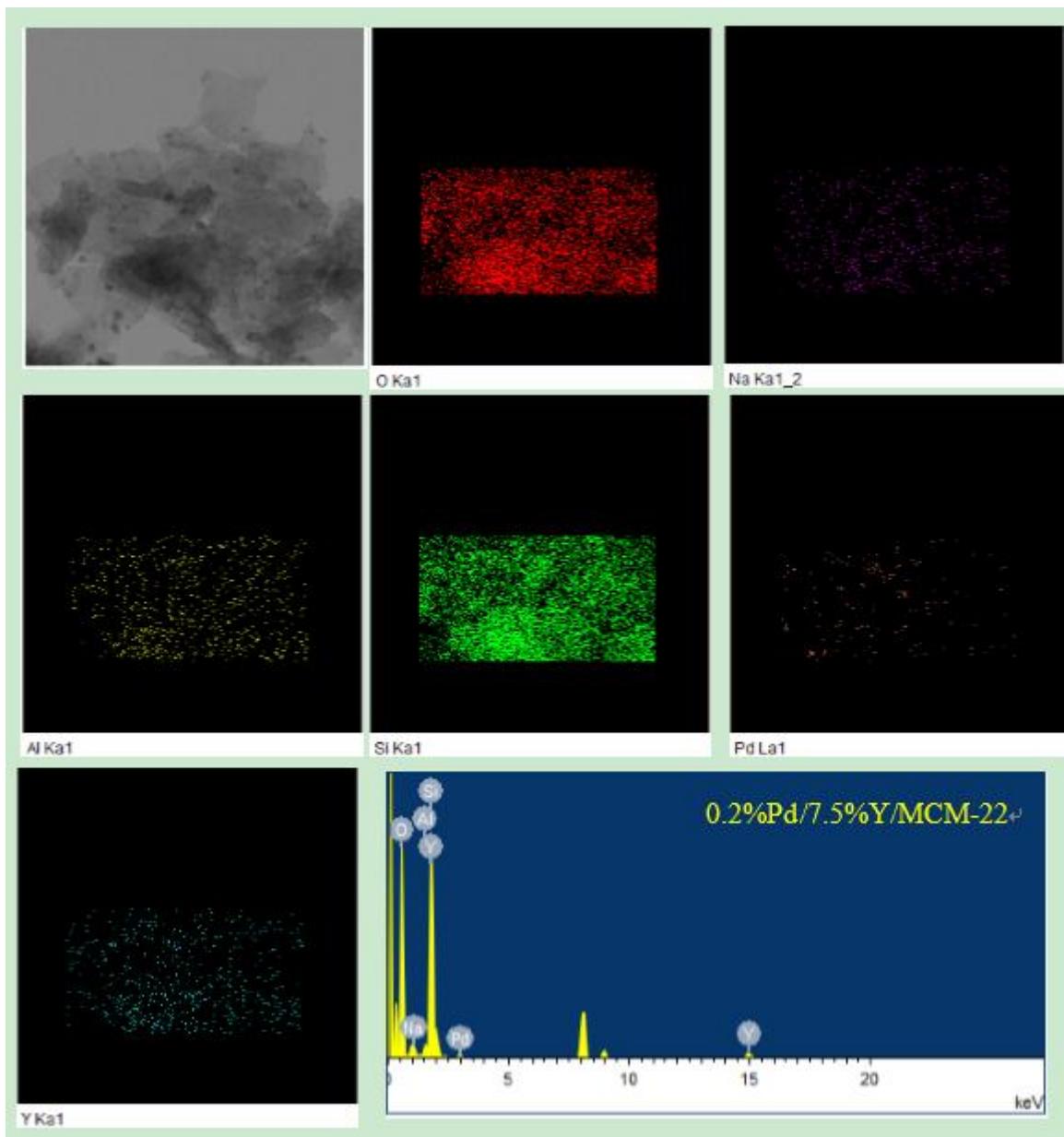


**Figure. S2.** SEM-EDS elemental (Y) mapping image of 0.2%Pd/7.5%Y/MCM-22.

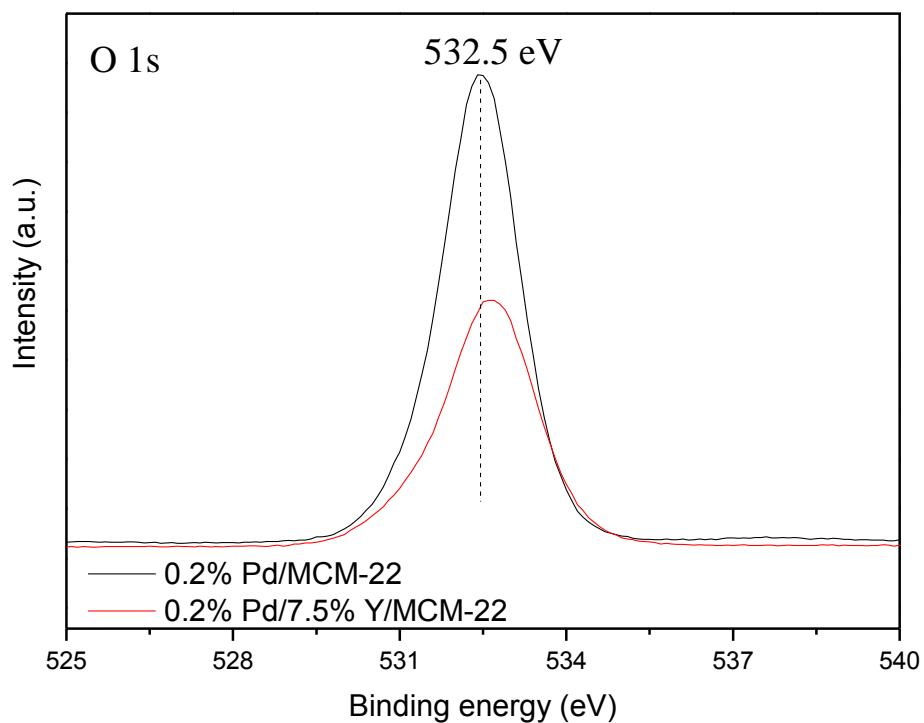


**Figure. S3.** Histograms with the particle size distribution of 0.2%Pd/MCM-22 and 0.2%Pd/7.5%Y/MCM-22.





**Figure. S4.** HRTEM-EDS elemental mapping images of 0.2%Pd/MCM-22 and 0.2%Pd/7.5%Y/MCM-22.



**Figure. S5.** XPS spectra of O 1s over fresh 0.2%Pd/MCM-22 and 0.2%Pd/7.5%Y/MCM-22.