SUPPLEMENTARY MATERIAL

Water glass derived catalyst for the synthesis of glycerol carbonate via the transesterification reaction between glycerol and dimethyl carbonate

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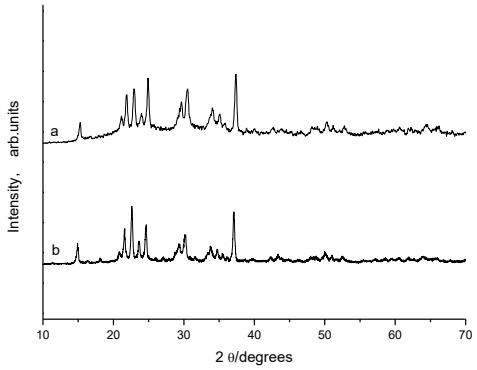

Fig. S1. XRD patterns of (a) the fresh WG-2.0 and (b) the five times reused WG-2.0.

To observe the structural changes of WG-2.0 in the reuse experiment, the XRD patterns of the fresh WG-2.0 and the five times reused WG-2.0 were compared and the results are shown in Fig. S1. The characteristic peaks at 15.0º, 21.5º, 22.6º, 23.6º, 23.5º, 29.3º, 30.1º, 33.8º, 34.8º, 37.1º which were observed in the fresh WG-2.0 still existed in the five times reused WG-2.0. No obvious changes could be observed in the XRD diffraction pattern of the five time reused WG-2.0, indicating that the crystalline structure of WG-2.0 did not change after five times reuse.

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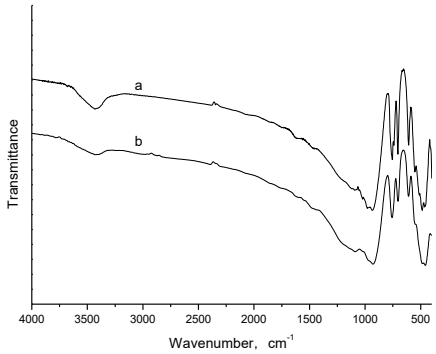

Fig. S2. FTIR of (a) the fresh WG-2.0 and (b) the five times reused WG-2.0.

In addition, the FT-IR patterns of the fresh WG-2.0 and five times reused WG-2.0 were also conducted to further investigate the structural changes of WG-2.0. The results are shown in Fig. S2. All the characteristic bands observed in the fresh WG-2.0 were still preserved in the five times reused WG-2.0. These unchanged characteristic bands made the functional groups of WG-2.0 well kept after five times reuse, demonstrating the structural stability of WG-2.0 during the reaction.