

Supporting Information for:

Enzymatic synthesis of glycerol carbonate using lipase immobilized on magnetic organosilica nanoflower as catalyst

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Computational formulas for quantitative analysis of GC and GL:

The standard curve of GL/cyclohexanol mass ratio to the peak area ratio:

$$M_{GL} = (A_{GL}/A_C - b_1) \times M_C/k_1$$

The standard curve of GC/cyclohexanol mass ratio to the peak area ratio:

$$M_{GC} = (A_{GC}/A_C - b_2) \times M_C/k_2$$

Computational formula of GL conversation rate:

$$C = (1 - M_{GLr}/M_{GLi}) \times 100\%$$

Computational formula of GC yield:

$$Y = (M_{GCe}/M_{GCt}) \times 100\%$$

Computational formula of selectivity:

$$S = Y/C$$

Note: C: GL conversation rate; Y: GC yield; S: selectivity; A_{GL} : peak area of GL;

A_{GC} : peak area of GC; A_C : peak area of cyclohexanol; M_{GL} : amount of GL; M_{GLr} :

residual amount of GL; M_{GLi} : initial amount of GL; M_C : amount of cyclohexanol;

M_{GC} : amount of GC; M_{GCe} : experiment value of GC amount; M_{GCt} : theoretical value

of GC amount. $b_2=0.1237$ and $k_2= M_C/0.2958$; $b_1= 0.06383$ and $k_1= M_C/0.1880$.

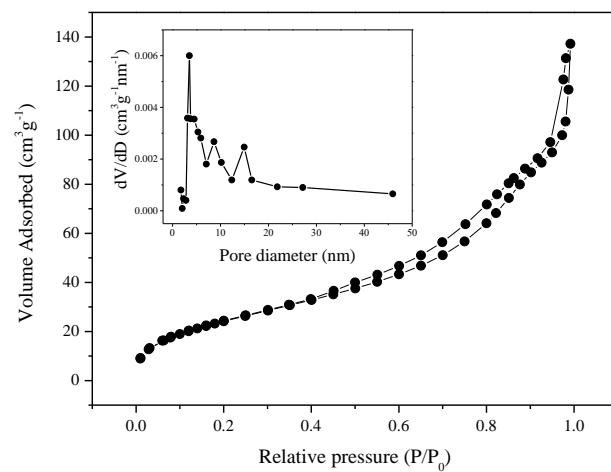


Figure S1 Nitrogen adsorption-desorption isotherms and pore size distribution profile of nanoflowers.

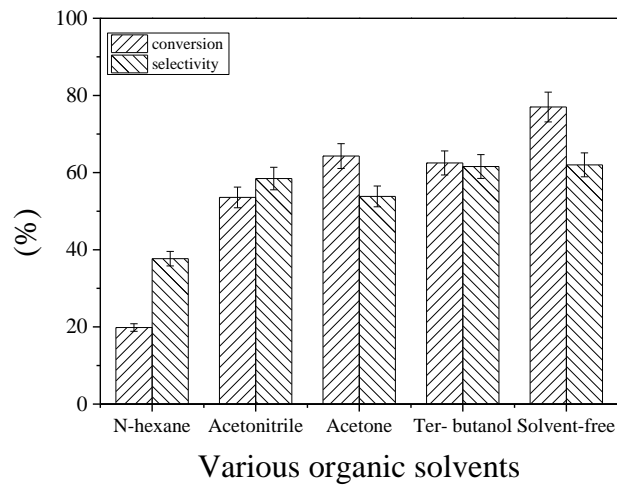


Figure S2. Effect of various organic solvents on the transformation rate of glycerol and the selectivity of immobilized enzyme