Supporting Information

Preparation of Hydrophobic Au Catalyst and Application in One-Step Oxidative Esterification of Methacrolein to Methyl Methacrylate

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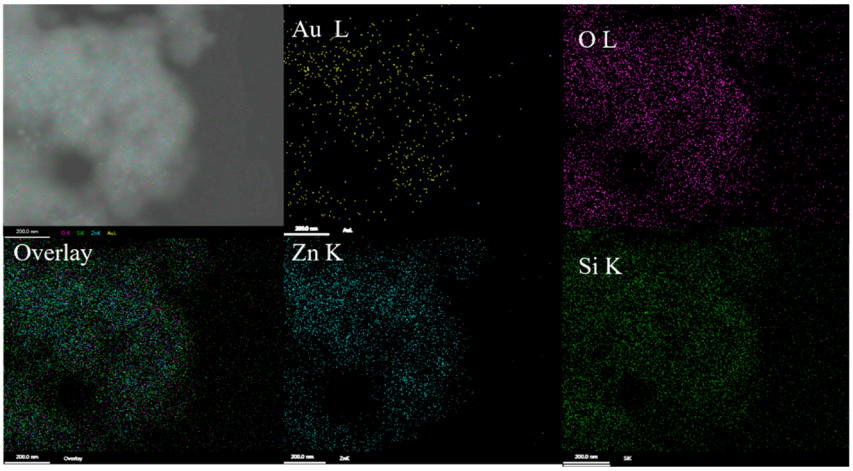

Figure S1. EDS diagram of Au/ZnO@Si catalyst.

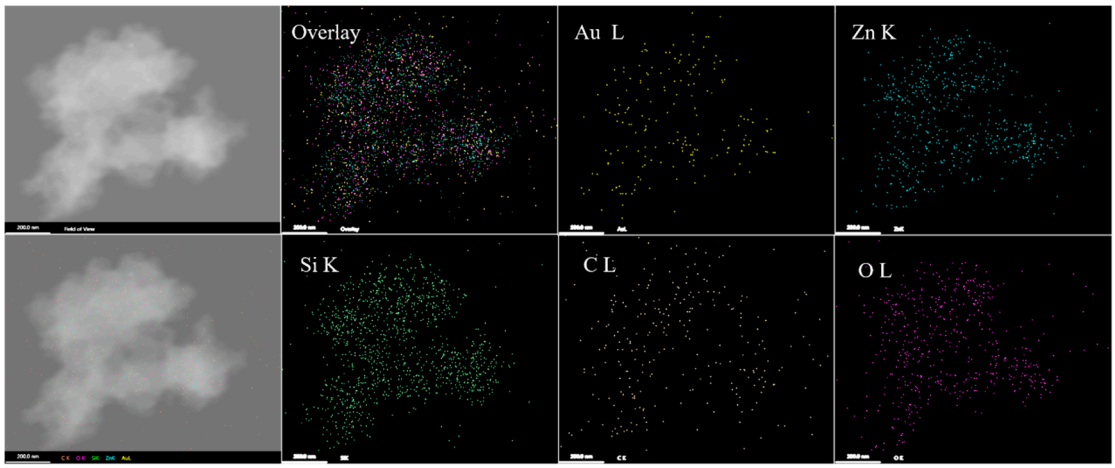

Figure S2. EDS diagram of Au/ZnO@Si-c(2.0) catalyst.

Table S1. XPS analysis of O1s for catalysts.

	O_I		O_{II}		O_{III}	
	BE (eV)	Fraction (%)	BE (eV)	Fraction (%)	BE (eV)	Fraction (%)
Au/ZnO	530.12	44.72	531.32	39.69	532.31	15.59
Au/ZnO@Si	532.15	60.28	533.0	25.18	533.86	14.53
Au/ZnO@Si-c(0.5)	532.33	54.34	533.2	39.09	533.42	6.57
Au/ZnO@Si-c(2.0)	532.86	66.14	533.34	27.71	534.31	6.15

Table S2. Catalyst performance

	Con./%	Sel./%	TON	Yield/%
Au/ZnO	44.6	96	595	42.82
Au/ZnO@Si	17.89	100	302	17.89
Au/ZnO@Si-c(0.5)	33.3	100	1394	33.3
Au/ZnO@Si-c(2.0)	63	12	310	7.12

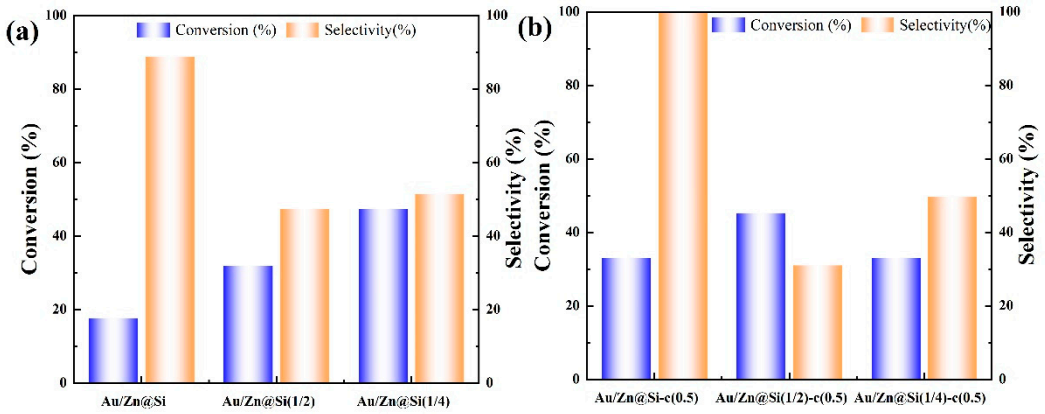

Figure S3. Catalytic performance of catalysts: (a): the catalytic performance of catalysts prepared with different amounts of TEOS for the reaction; (b): the catalytic performance of hydrophobic catalysts prepared with the same amount of hydrophobic reagent TMCS under different amounts of TEOS.