Base-free oxidation of glucose to gluconic acid using supported gold catalysts

Supplementary Information

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Supplementary Information

Preparation methods	The relative contents of surface elements (at. %)				
	Au	Ti	0	Cl	
CIM	0.09	30.24	68.90	0.77	
MIM	0.10	30.14	69.18	0.58	
DP	0.20	30.45	69.35	no	
SIM	0.45	30.25	69.30	no	

Table S1 Surface elemental composition of 1%Au/TiO₂ catalysts prepared with different methods

Table S2 Surface elemental composition of 1%Au/TiO₂ catalysts prepared by post-synthesis methods The relative contents of surface elements (at.%) Treatment condition

	Au	Ti	0
no	0.49	29.76	69.75
air	0.45	30.25	69.30
reflux	0.45	28.90	70.55

Table S3. The effect of the catalyst heat treatment

Heat treatment Conversion		Yield (%)		
(%)	(%)	Gluconic acid	Glucaric acid	Glycolic acid
no	88.4	84.0	trace	no
air	89.9	86.2	trace	no



Figure S1 XRD pattern of 1%Au/TiO₂ catalysts with different post-synthesis methods (a) no heat treatment, (b) reflux, (c) air



Figure S2 Au(4f) spectra for 1%Au/TiO₂ samples treated with different methods (a) no heat treatment, (b) reflux, (c) air



Figure S3 XRD pattern 1%Au/TiO₂ catalysts prepared with different PVA/Au ratio