Supporting information

Mesoporous carbon confined gold catalysts with superior activity for selective oxidation of glucose to gluconic acid

Chunyan Ma,\textsuperscript{a} Wenjuan Xue,\textsuperscript{a} Jinjun Li,\textsuperscript{a} Wei Xing\textsuperscript{b} and Zhengping Hao\textsuperscript{*a}

\textsuperscript{a} Department of Environmental Nano-materials, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, P. R. China

\textsuperscript{b} School of Science, State Key Laboratory of Heavy Oil Processing, Key Laboratory of Catalysis, China University of Petroleum, Qingdao 266555, P. R. China

[\textsuperscript{*}] E-mails: zpinghao@rcees.ac.cn; xingwei@upc.edu.cn
Figure S1 Small angle X-ray diffraction of the OMC supports.

Figure S2 N₂ adsorption/desorption isotherms of the catalysts. (a) Au/AC; (b) Au/OMC-SBA; (c) Au/OMC-MSU-2; (d) Au/OMC-MSU-10; (e) Au/OMC-MSU-15; (f) Au/OMC-MSU-20; (g) Au/OMC-MSU-25. The isotherm curves a, b, c, d, e, f and g in panel are shifted by 917, 1313, 1752, 2088, 2300, 2772 and 3001 cm³·g⁻¹, STP, respectively, for clarity.
Figure S3 XPS Au 4f spectra obtained for the Au/OMC catalysts. (a) Au/OMC-SBA; (b) Au/OMC-MSU-10; (c) Au/OMC-MSU-15.

Figure S4 IR spectra of the Au/OMC catalysts. (a) Au/OMC-MSU-2; (b) Au/OMC-MSU-20; (c) Au/OMC-MSU-25.
**Figure S5** O₂-TPD profiles of the Au/OMC catalysts (a) Au/OMC-MSU-2; (b) Au/OMC-MSU-20; (c) Au/OMC-MSU-25.

**Figure S6** Influence of reaction time on the oxidation of glucose using the Au/OMC catalysts. (a) Au/OMC-SBA; (b) Au/OMC-MSU-2; (c) Au/OMC-MSU-10; (d) Au/OMC-MSU-20.