Supporting Information

Effective low-temperature hydrolysis of cellulose catalyzed by concentrated $H_3PW_{12}O_{40}$ under microwave irradiation

Xiutao Li, Yijun Jiang*, Lili Wang, Lingqian Meng, Wei Wang and Xindong Mu*

Key Laboratory of Biofuels, Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, Qingdao 266101, P. R. China

Fax: +86-532-80662724; Tel: +86-532-80662723.

Corresponding author: Yijun Jiang and Xindong Mu

E-mail: jiangyj@qibebt.ac.cn; muxd@qibebt.ac.cn

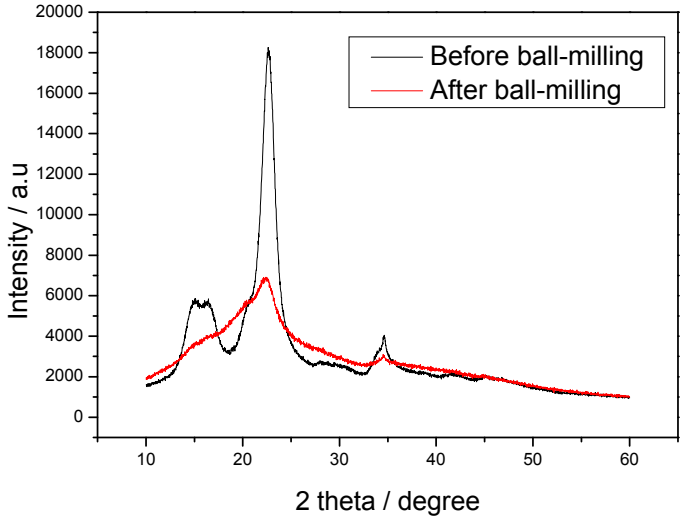

Fig. S1 XRD patterns of microcrystalline cellulose before and after ball-milling.

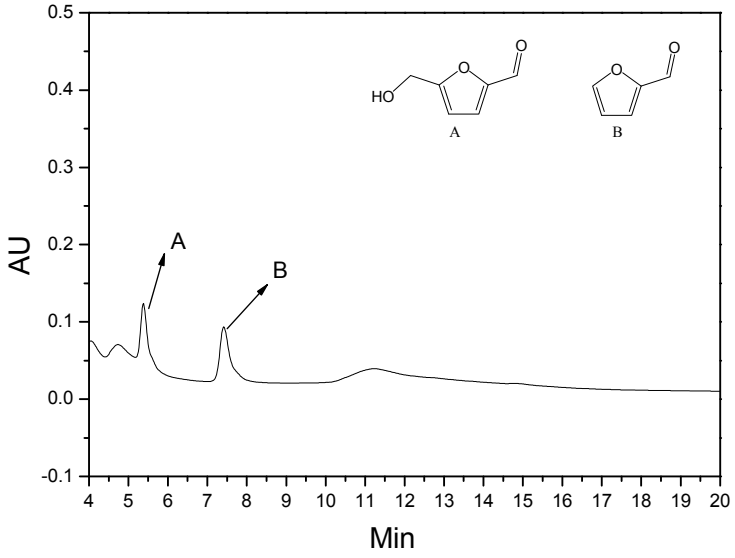

Fig. S2 Chromatogram of the diluted reaction mixture catalyzed by 88% (w/w) HPW under microwave irradiation. Conditions: cellulose (60 mg), HPW solution (3 mL), Temperature 90 ^{o}C, Time 3h.

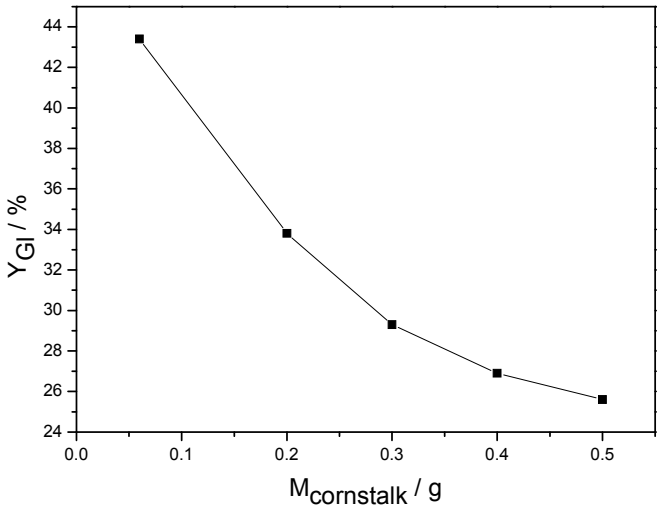

Fig. S3 Effect of the quantity of corn stover on the glucose yield for the hydrolysis of cellulose in the corn stover under microwave irradiation at 90 ^{o}C for 3 h catalyzed by HPW solution (88%, w/w).

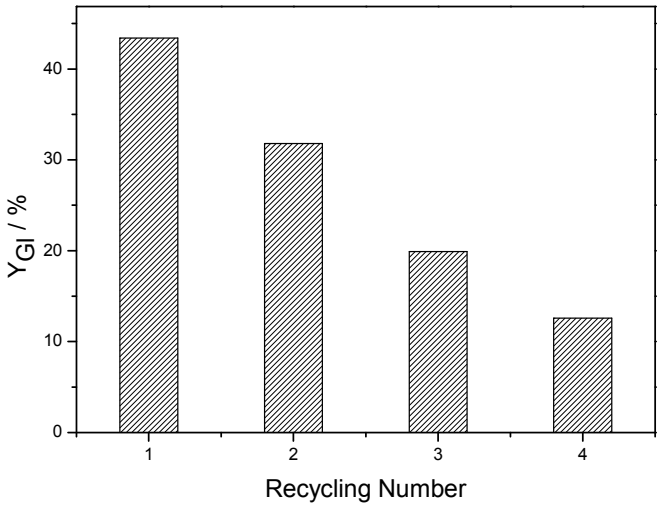

Fig. S4 The reusability of HPW for the hydrolysis of cellulose in the corn stover under microwave irradiation at 90 ^{o}C for 3h

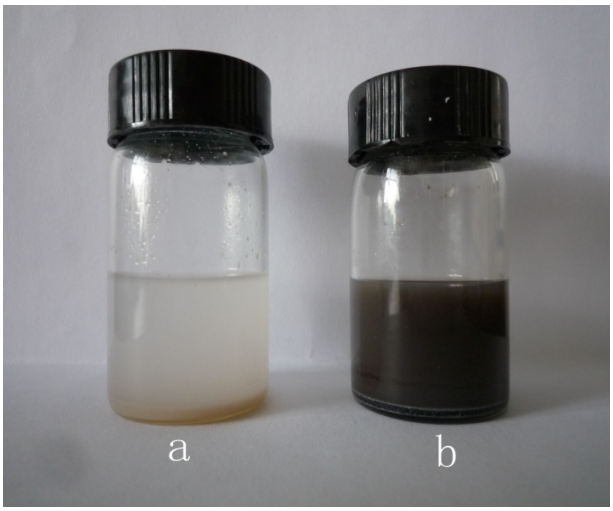

Fig. S5 Extracted liquid containing HPW from the hydrolytic solution of (a) cellulose, (b) corn stover.

The activity of HPW recycled from hydrolytic solution of cellulose did not change due to the minor side reaction; the activity of HPW recycled from that of corn stover was changed due to the serious side reactions.

Table S1 The composition of the lignocellulosic biomass[a]

Biomass	Glucan content (w/w, %)	Xylan content (w/w, %)	Araban contant (w/w, %)	Others (w/w, %)
Corncob	34.6	26.9	3.6	34.9
Cornstover	36.5	19.8	2.1	41.6
Bagasse	34.7	20.7	1.7	42.9

[a] The test method was followed with NREL laboratory analytical procedures (A. Sluiter, B. Hames, R. Ruiz, C. Scarlata, J. Sluiter and D. Templeton. *Technical. Report,* 2008**,** NREL/TP-510-42620.)