

Supplementary Information

Table S.1. summarizes the results of control experiments without the use of a hydrogenation catalyst but under identical reaction conditions including 50 bar (25°C) hydrogen pressure.

Table S.1. Cellulose conversion, carbon yield, carbon efficiency and product selectivities in the hydrolysis of cellulose with phosphoric or sulfuric acid. (m(cellulose) = 0.5 g, m(catalyst) = 0.1 g, V(acid) = 10 ml, T = 160°C, p(H₂) = 50 bar (25°C)).

Entry	Catalyst	Conc. [wt.%]	Time [h]	Conv. ^a [%]	Yield _{Liq.} ^b [%]	E _c [%]	Yield [%] ^b										
							1	2	3	4	5	6	7	8	9	10	11
Phosphoric acid																	
28	-	0.5	1	37.2	31.9	85.7	9.9	0.0	0.5	0.0	17.5	0.0	0.0	1.4	0.0	0.0	0.0
29	-	0.5	5	48.4	43.4	89.7	18.7	0.0	0.3	0.2	10.4	0.0	0.2	1.2	0.0	0.0	0.0
30	-	2.5	1	45.8	45.8	100.0	18.8	0.0	0.5	0.0	16.8	0.0	0.2	1.3	0.0	0.0	0.0
31	-	2.5	5	60.2	58.9	97.8	30.4	0.0	0.3	1.1	6.2	0.0	0.0	0.0	0.0	0.0	0.0
Sulfuric acid																	
32	-	0.5	1	58.0	51.4	88.6	28.4	0.0	0.3	0.5	8.4	0.0	0.0	1.0	0.0	0.0	0.0
33	-	0.5	5	70.4	66.5	94.4	35.0	0.0	0.3	2.8	2.6	0.0	0.3	0.0	0.0	0.0	0.0
34	-	2.5	1	55.0	54.7	99.5	27.9	0.0	0.3	0.4	10.8	0.0	0.0	1.4	0.0	0.0	2.3
35	-	2.5	5	69.2	52.6	76.1	19.5	0.0	0.3	2.9	1.8	0.0	0.0	0.0	0.0	0.2	0.0

^a conversion was calculated by the weight difference of cellulose before and after reaction.

^b based on theoretical stoichiometric coefficients corresponding to the carbon content of the reaction products.

Entry	Catalyst	Conc. [wt.%]	Time [h]	Conv. ^a [%]	Yield _{Liq.} ^b [%]	E _c [%]	Yield [%] ^{b,c}			
							12	13	14	15
Phosphoric acid										
28	-	0.5	1	37.2	31.9	85.7	0.0	0.0	0.4	2.2
29	-	0.5	5	48.4	43.4	89.7	1.4	0.0	2.1	8.8
30	-	2.5	1	45.8	45.8	100.0	0.4	0.0	1.5	6.4
31	-	2.5	5	60.2	58.9	97.8	6.3	0.1	2.9	11.4
Sulfuric acid										
32	-	0.5	1	58.0	51.4	88.6	3.1	0.0	1.7	7.9
33	-	0.5	5	70.4	66.5	94.4	16.5	0.2	1.9	7.1
34	-	2.5	1	55.0	54.7	99.5	2.5	0.0	1.5	7.6
35	-	2.5	5	69.2	52.6	76.1	19.7	0.3	3.4	4.4

^a conversion was calculated by the weight difference of cellulose before and after reaction.

^b based on theoretical stoichiometric coefficients corresponding to the carbon content of the reaction products.

^c levulinic acid **12**, furanic acid **13**, 5-hydroxymethylfurfural **14**, furfural **15**.