

Supplementary Information

Conversion of cellulose into aromatic compounds using supported metal catalysts in high-temperature water

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Table S1

Results of cellulose conversion into gaseous and solid products

Reaction temperature (K)	Catalyst	Gas yield (C%)	Gas composition (%)					Solid product yield (wt%)
			H ₂	CO	CH ₄	CO ₂	C ₂ H ₆	
473	None	0.6	0.7	0.0	14	86	0.0	99
	5%Pt/C	2.3	7.1	0.0	2.6	87	3.1	83
523	None	2.4	2.8	0.0	0.0	97	0.0	34
	5%Pt/C	33	26	0.8	5.8	63	4.3	4.1
573	None	4.5	6.9	9.1	0.5	84	0.0	28
	5%Pt/C	34	15	1.5	8.1	72	3.6	1.7
623	None	9.1	7.5	14	1.6	76	0.3	19
	5%Pt/C	43	16	0.4	9.5	70	3.8	0.0
673	None	17	11	27	5.5	55	1.3	13
	5%Pt/C	46	13	0.0	12	71	4.5	0.0
	5%Pd/C	33	19	0.3	8.0	70	3.1	0.0
	5%Rh/C	50	7.0	1.2	30	59	2.9	0.0
	5%Ru/C	80	4.0	0.7	40	54	1.2	0.0

Table S2

Results of glucose conversion into gaseous and solid products

Reaction temperature (K)	Catalyst	Gas yield (C%)	Gas composition (%)					Solid product yield (wt%)
			H ₂	CO	CH ₄	CO ₂	C ₂ H ₆	
673	None	22	15	0.0	6.0	74	4.9	54
	5%Pt/C	43	11	0.3	12	71	5.7	0.0
	5%Pd/C	28	14	3.9	7.4	71	3.4	0.0

Table S3

Results of xylan conversion into gaseous and solid products

Reaction Temperatur e (K)	Catalyst	Gas yield (C%)	Gas composition (%)					Solid product yield (wt%)
			H ₂	CO	CH ₄	CO ₂	C ₂ H ₆	
673	None	17	22	0.4	3.1	73	1.8	6.3
	5%Pt/C	29	32	1.0	7.2	55	5.1	0.0
	5%Pd/C	43	27	0.4	6.9	61	4.2	1.9

Table S4

Results of xylose conversion into gaseous and solid products

Reaction Temperatur e (K)	Catalyst	Gas yield (C%)	Gas composition (%)					Solid product yield (wt%)
			H ₂	CO	CH ₄	CO ₂	C ₂ H ₆	
673	None	17	13	23	5.4	56	1.3	6.0
	5%Pt/C	50	11	1.2	12	70	5.4	0.0
	5%Pd/C	27	14	9.2	12	62	3.6	0.2