Supplementary information

Comparison of degradation features of lignin to phenols over Pt catalysts prepared with various forms of carbon supports

Jeesu Park[a], Shinyoung Oh[a], Jae-Young Kim[a], Shin young Park[a], In Kyu Song[b], Joon Weon Choi[c*]

[a] Department of Forest Sciences, College of Agricultural and Life Science, Seoul National University, 599 Gwanak-ro, Gwanak-gu, Seoul, 151-921, Republic of Korea

[b] School of Chemical and Biological Engineering, Institute of Chemical Processes, Seoul National University, 599 Gwanak-ro, Gwanak-gu, Seoul, 151-921, Korea

[c] Graduate School of International Agricultural Technology and Institute of Green-Bio Science and Technology, Seoul National University, Pyeongchang 232-916, Republic of Korea

* Corresponding author. Tel: +82-33-339-5840; Fax: +82-33-339-5689

E-mail address: cjw@snu.ac.kr

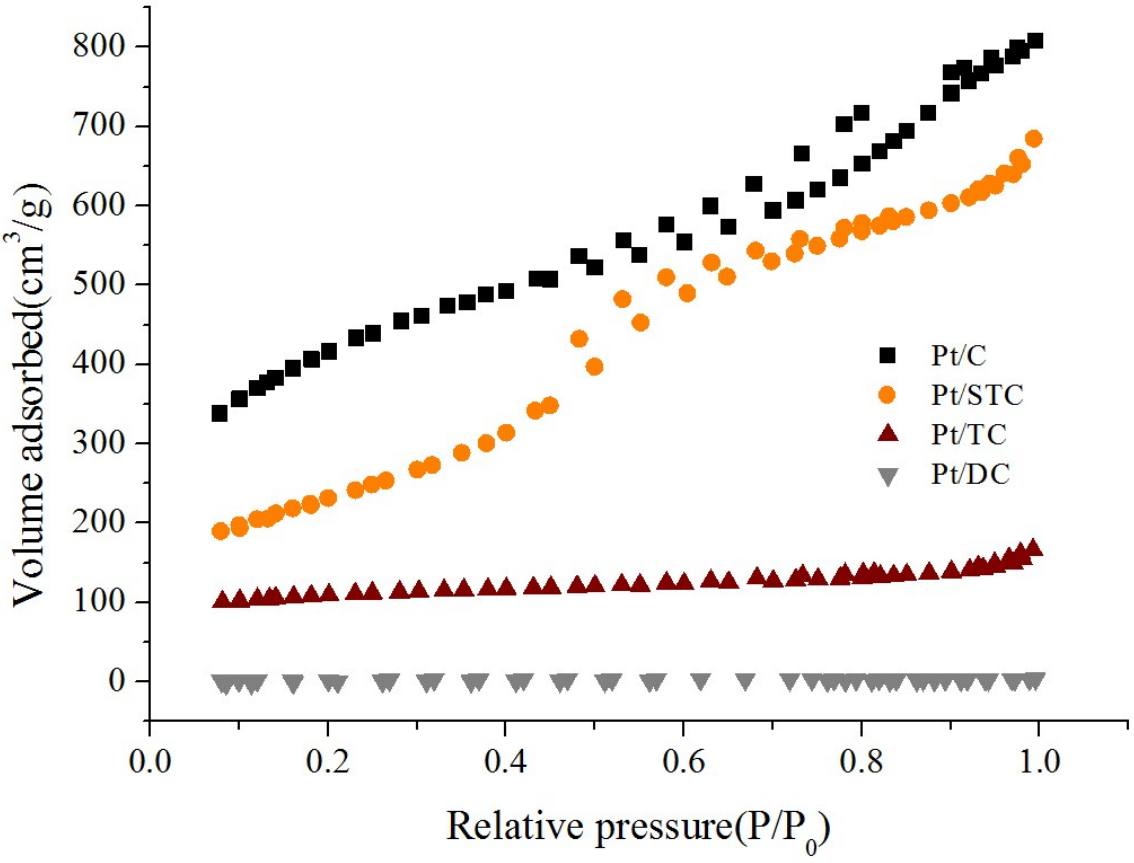

Figure S1. Nitrogen adsorption-desorption isotherms of carbon supported Pt catalysts

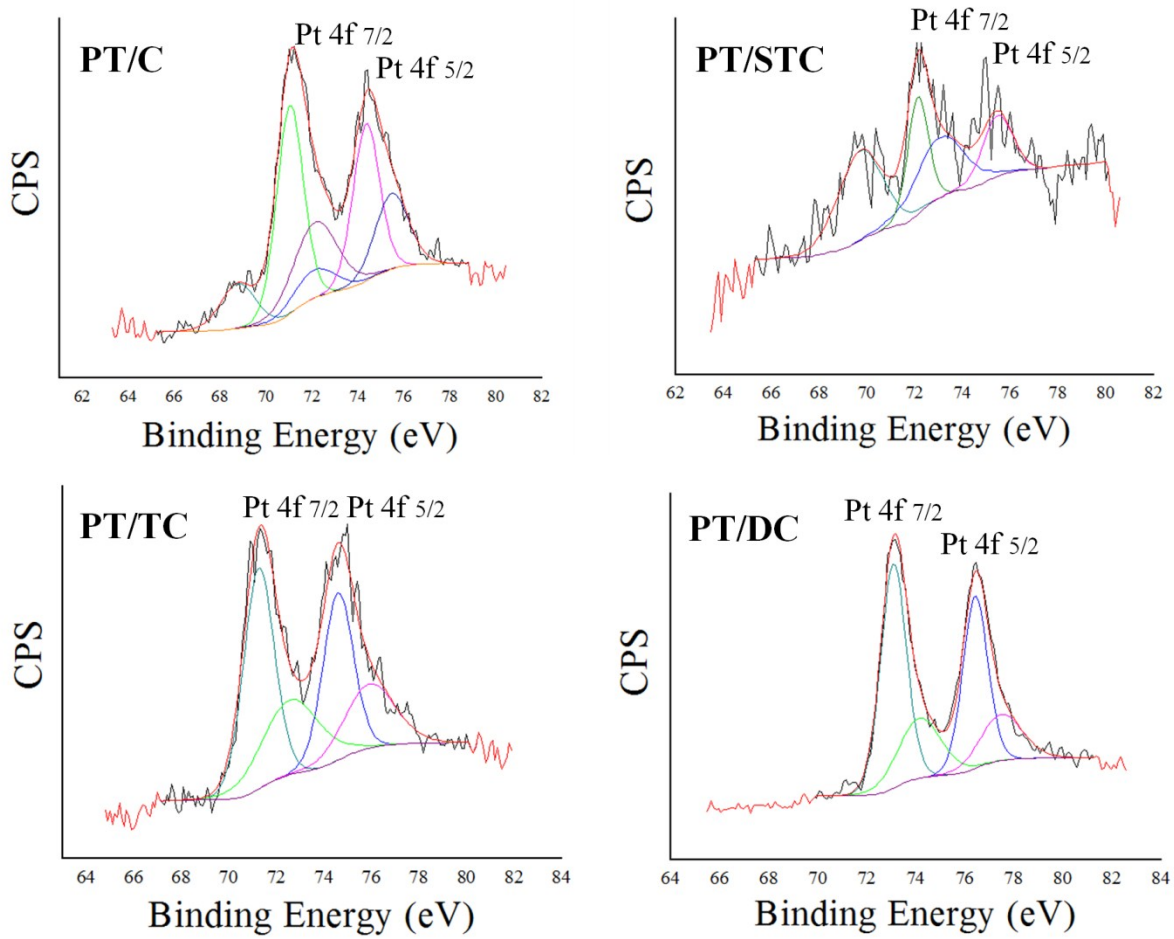

Figure S2. Pt 4f electron spectra of Pt/C, Pt/STC, Pt/TC and Pt/DC

Table S1. Yield of depolymerized lignin oil under various reaction conditions

Reaction conditions				Yield of depolymerized lignin oil
Catalyst (5wt%)	Solvent type	Temperature (°C)	Reaction time (min)	Lignin Oil (wt%)
Pt/C	EtOH	350	40	77.4 (1.5)
	MeOH			63.2 (2.5)
	2-PrOH			74.5 (1.6)
	t-BuOH			58.4 (0.6)
	EtOH	300	40	60.7 (2.1)
		250		53.5 (1.3)
		200		50.1 (1.8)
		350	120	52.4 (1.7)
			240	37.0 (1.6)
			360	24.3 (2.0)

Table S2. Pt $4f_{7/2}$ core binding energies, eV, in Pt/C, Pt/STC, Pt/TC and Pt/DC

Sample	$4f_{7/2}$	
	metal	metal oxide
Pt/C	71.4 (72)	75.6 (28)
Pt/STC	72.1 (70)	75.5 (30)
Pt/TC	72.1 (73)	76.0 (27)
Pt/DC	73.1 (68)	76.1 (32)

* The numbers in parentheses are the relative intensities of the species.