Supporting Information for:

A Review on Recent Trends in Selective Hydrodeoxygenation of Lignin Derived Molecules

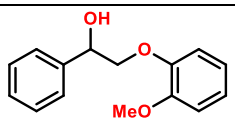
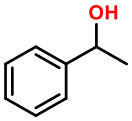
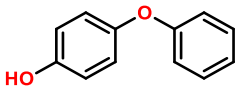
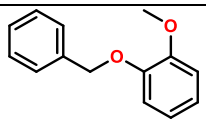
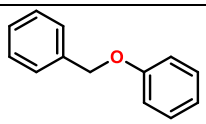
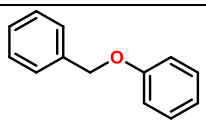
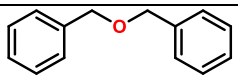
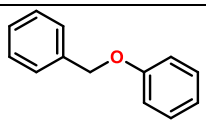
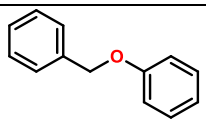
*Jake G. Tillou, Chigozie J. Ezeorah, Joseph J. Kuchta III, Sachini C. D. Dissanayake Mudiyanselage, James D. Sitter, Aaron K. Vannucci**

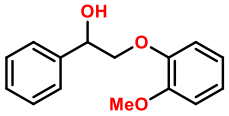
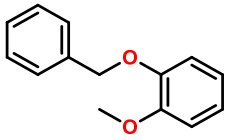
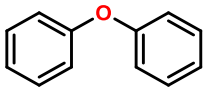
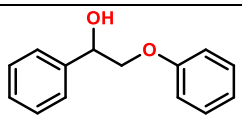
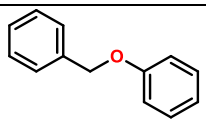
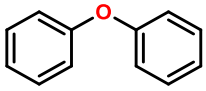
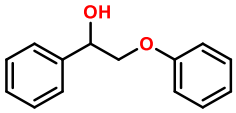
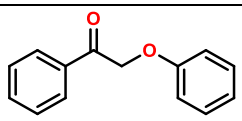
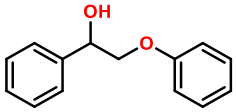
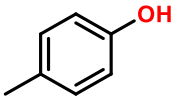
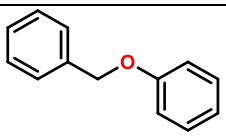
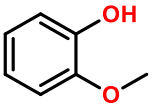
Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC 29208, USA

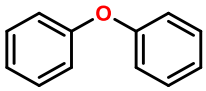
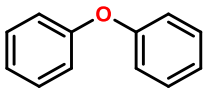
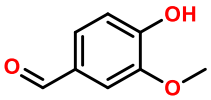
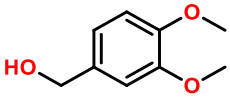
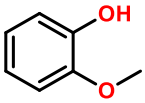
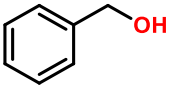
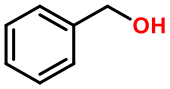
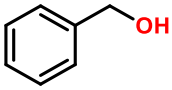
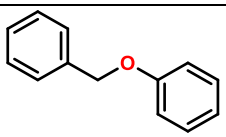
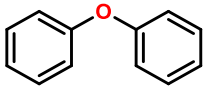
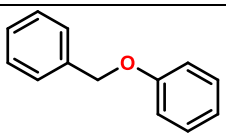
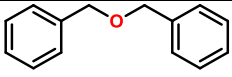
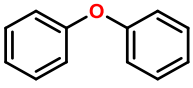
Corresponding Author

* E-mail:
vannucci@mailbox.sc.edu

Table S1. Summary of Catalytic HDO Results from Reviewed Papers

Substrate	Catalyst	T(°C) P/Flow	Solvent	Conv%	HDO Sel.%	Ref. #
	Ni/CaO-H-ZSM-5	140 1 MPa H_2[a]	EtOH	83	15	52
	Ni/CaO-H-ZSM-5	140 1 MPa H_2[a]	EtOH	44	99	52
	Ni/CaO-H-ZSM-5	140 1 MPa H_2[a]	EtOH	47	10	52
	Ni/CaO-H-ZSM-5	140 1 MPa H_2[a]	EtOH	100	49.3	52
	Ni/Al_2O_3	100[c]	IPA	100	50	42
	Ni/AC	140[a] 2 MPa H_2	MeOH	100	50	54
	Ni/AC	140[a] 2 MPa H_2	MeOH	100	96	54
	Ni/CB	70[a] 0.2 MPa H_2	$EtOH/H_2O$	99	9.5	53
	Ni/CB	80[d]	$EtOH/H_2O$	99	46.7	53

Substrate	Catalyst	T(°C) P/Flow	Solvent	Conv%	HDO Sel.%	Ref. #
	Ni-10CeO_2/HZSM-5	150[a] 1 MPa H_2	EtOH	100	63.4	44
	Ni-10CeO_2/HZSM-5	150[a] 1 MPa H_2	EtOH	100	50.7	44
	Ni-10CeO_2/HZSM-5	150[a] 1 MPa H_2	EtOH	~50	0	44
	Ni_3S_2-CSs-0.4-700	260[c]	IPA	100	48	55
	Ni_3S_2-CSs-0.4-700	260[c] 2 MPa N_2	IPA	100	51	55
	Ni_3S_2-CSs-0.4-700	260[c] 2 MPa N_2	IPA	70	52	55
	Ni@NC-800-H	180[c] 1 MPa N_2	IPA	100	49	60
	Ni@NC-800-H	220[c] 1 MPa N_2	IPA	100	6.7	60
	Ru/C	280[c] 8 MPa N_2	EtOH 1,4-Dioxane	52.7	20.6	71
	Ru/Nb_2O_5	250[a] 0.5 MPa	H_2O	72.3	68.1	74
	Ru/AC	240[a] 1 MPa	IPA	98.8	50	75
	Ru/SiO_2-ZrO_2	260[a] 1 MPa H_2	Octane	100	0	72

Substrate	Catalyst	T(°C) P/Flow	Solvent	Conv%	HDO Sel.%	Ref. #
	Ru/Mordenite	160[a] 3 MPa H_2	n-hexane	100	0	76
	Ru/HZSM-5	210[a] 1 MPa H_2	n-hexane	100	0	XX
	Pd/G60	50 5 bar H_2	IPA	100	>99.5	78
	Pd/CN_x	220[c]	IPA	100	69.2	79
	Pd/NC	400[b] 0.5sccm H_2 80sccm N_2	N/A	100	>99	80
	[Pd(tpy)Cl]Cl	100[a] 20 bar H_2	MeOH	>99	>99	40
	[Pd(tpy)Cl]Cl/A300	100[a] 20 bar H_2	n-Dodecane	>99	>99	77
	Pd-2	200[a] 5 bar H_2	MeOH	>99	>99	32
	AuPd/CeO_2	150[c]	EtOH/H_2O 2mmol formic acid	100	52.4	81
	1Pd-10Ni/HZSM-5	220[a] 2 MPa H_2	n-hexane	>99.9	0	82
	Ni-Ru/AC	120 0.5 MPa H_2	MeOH	>99	50	83
	Ni-Ru/AC	120 0.5 MPa H_2	MeOH	>99	98	83
	Ni-Ru/AC	250 4 MPa H_2	MeOH	86.4	50	83
[a]Batch process	[b]Flow	[c]hydrogen source is solvent	[d]$NaBH_4$ hydrogen source			