Acidic ionic liquid immobilized on Cellulose: An efficient and recyclable heterogeneous catalyst for the solvent-free synthesis of hydroxylated trisubstituted pyridines.

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Supporting information

Spectral data of synthesized compounds

4,4',4''-(pyridine-2,4,6-triyl)triphenol (3a)

Yield: 88%, mp: 281-282°C, ^{1}H NMR (400MHz, MeOD): δ (ppm) 8.032(d, *J*= 8.8, 4H), 7.797(s, 2H, Py-H), 7.727(d, *J*=8.8, 2H), 6.973-6.921 (m, 6H); ^{13}C NMR (100MHz, MeOD): δ (ppm) 158.5, 158.11, 156.6, 150.09, 131.10, 129.78,128.26, 128.12, 115.55, 115.06, 114.49. IR (cm^{-1}): 3312, 1713, 1598, 1521, 1389, 1242, 1186, 826. Anal. Cal. $C_{23}H_{17}N$(355.12): C, 77.73; H, 4.82; N, 3.94. Found: C, 77.56; H, 4.96; N, 3.76.

3-(2, 6-bis(4-methoxyphenyl)pyridin-4-yl)phenol (3i)

Yield: 81%, mp: 138-139˚C, ^{1}H NMR (400MHz, MeOD): δ (ppm) 8.133(d, *J*=8.8 Hz, 4H), 7.824 (s, 2H, Py-H), 7.224–7.383 (m, 3H), 7.069 (d, *J*=8.8 Hz, 4H), 6.904-6.933 (m, 1H), 3.882 (s, 6H, OCH_3); ^{13}C NMR(100MHz, MeOD): δ(ppm) 160.83, 157.87, 157.14, 150.44, 140.29, 132.06, 129.85, 128.24, 128.03, 118.03, 115.44, 115.23, 113.77, 113.64, 54.47, 54.25. IR (cm^{-1}): 3412, 1614, 1504, 1409, 1248, 1163, 1026, 879, 761. Anal. Cal. $C_{25}H_{21}NO_3$ (383.44): C, 78.31; H, 5.52; N, 3.65. Found: C, 78.55; H, 5.74; N, 3.42.

3-(2,6-di([1,1'-biphenyl]-4-yl)pyridin-4-yl)phenol (3l)

Yield: 84%, mp: 233-234, ^{1}H NMR (400MHz, MeOD): δ (ppm) 8.305 (s, 2H, Py-H), 8.071 (d, *J*=8.4 Hz, 4H), 7.928(d, *J*=8.4 Hz, 4H), 7.711 (d, *J*=7.2 Hz, 4H), 7.096-7.516 (m, 10H) : ^{13}C NMR(100MHz, MeOD): δ(ppm) 159.04, 158.64, 158.37, 153.84, 145.09, 139.16, 136.19, 130.73, 129.11, 128.85, 127.79, 126.96, 121.37, 118.97, 114.44. IR (cm^{-1}): 3421, 1607, 1523, 1401, 1239, 1180, 1123, 842,

754. Anal. Cal. $C_{35}H_{25}NO$ (475.19): C, 88.39; H, 5.30; N, 2.95. Found: C, 88.63; H, 5.14; N, 3.02.

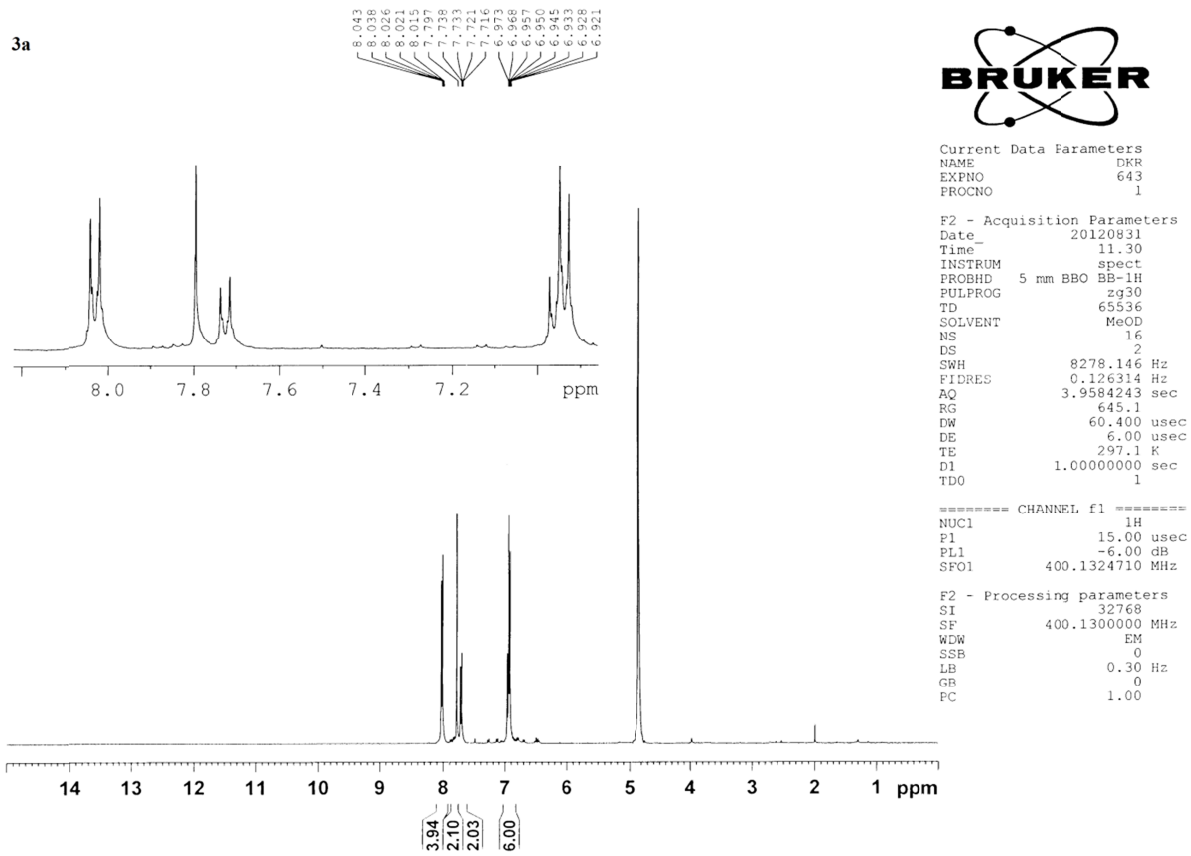

Figure S1 ^{1}H NMR of 3a

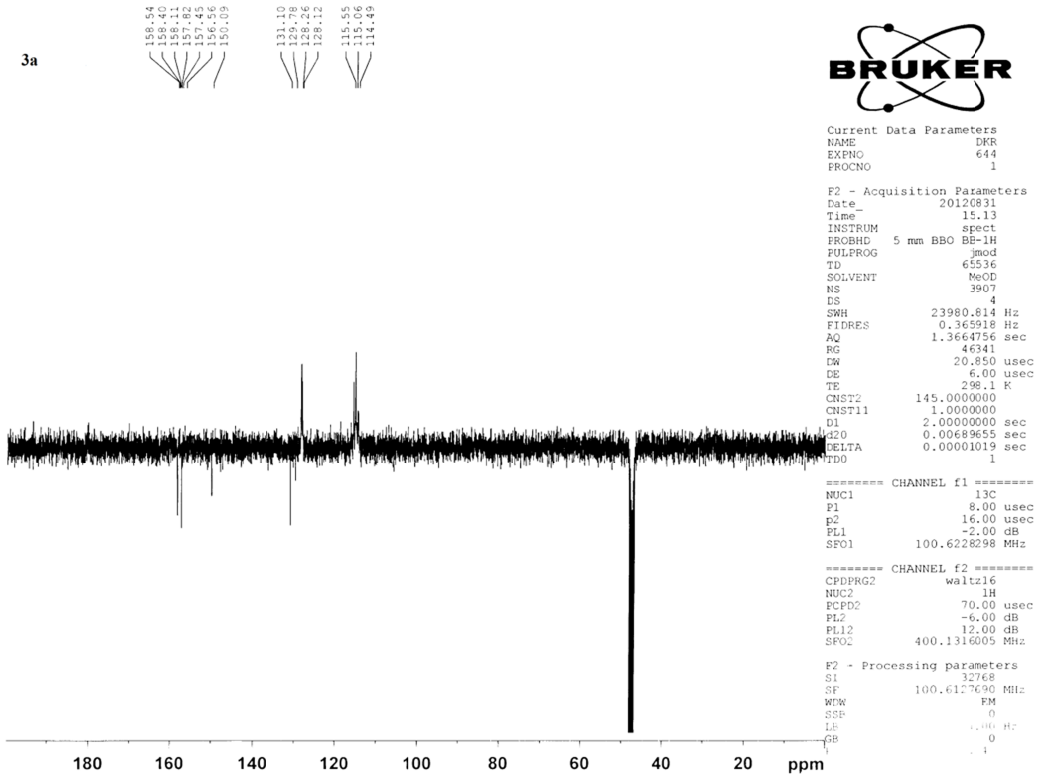

Figure S2 ^{13}C NMR of 3a

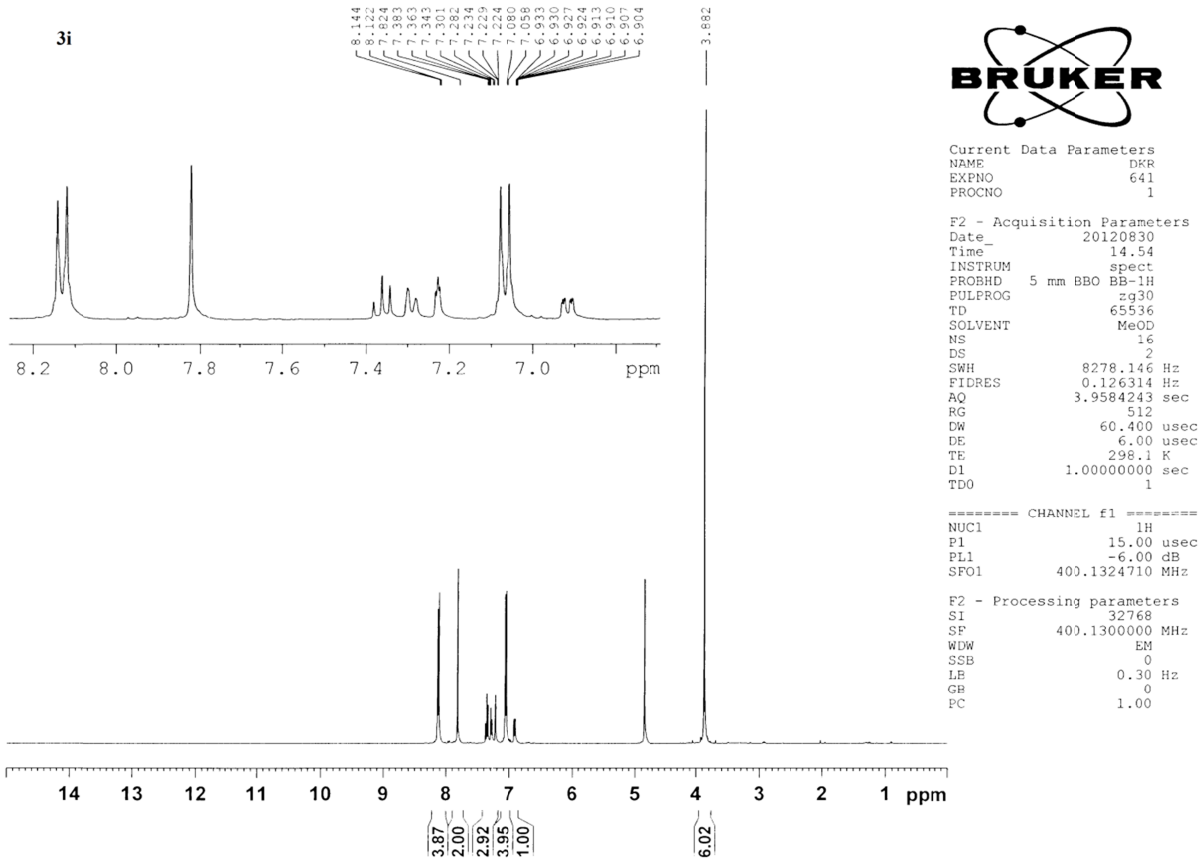

Figure S3 ^{1}H NMR of 3i

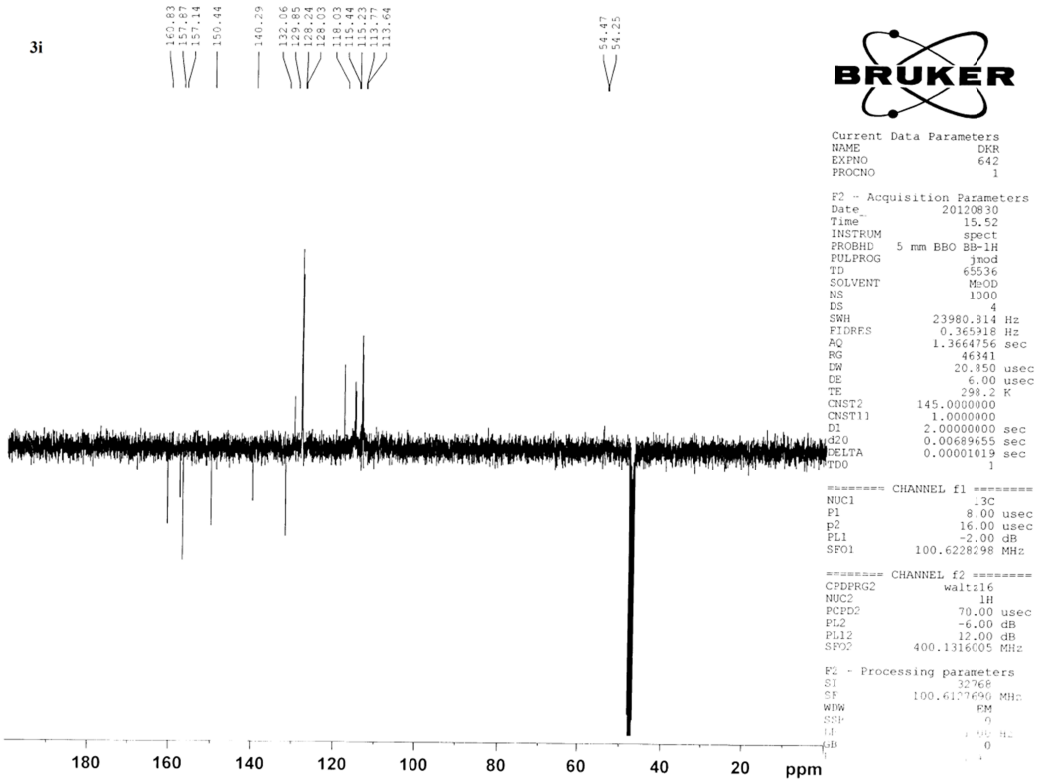

Figure S4 ^{13}C NMR of 3i

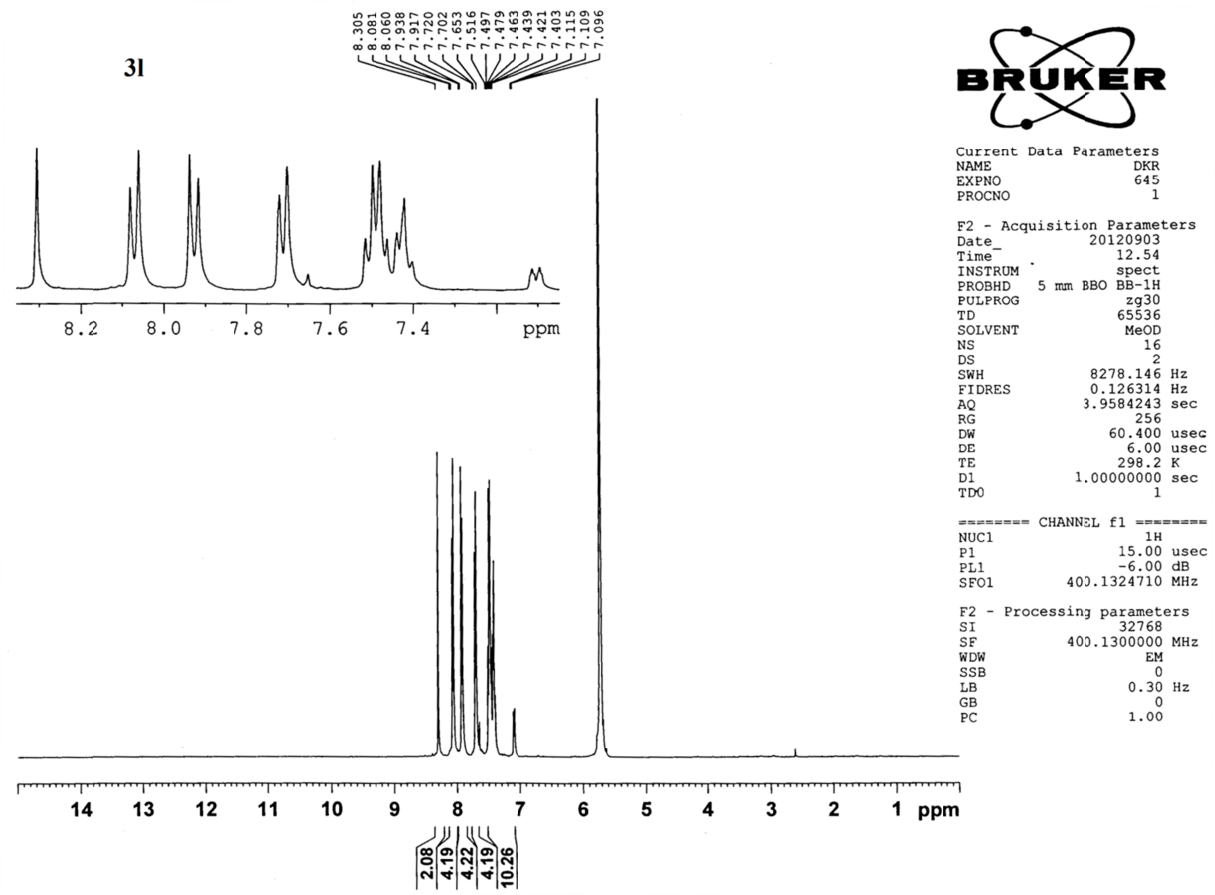

Figure S5 ^{1}H NMR of 3l

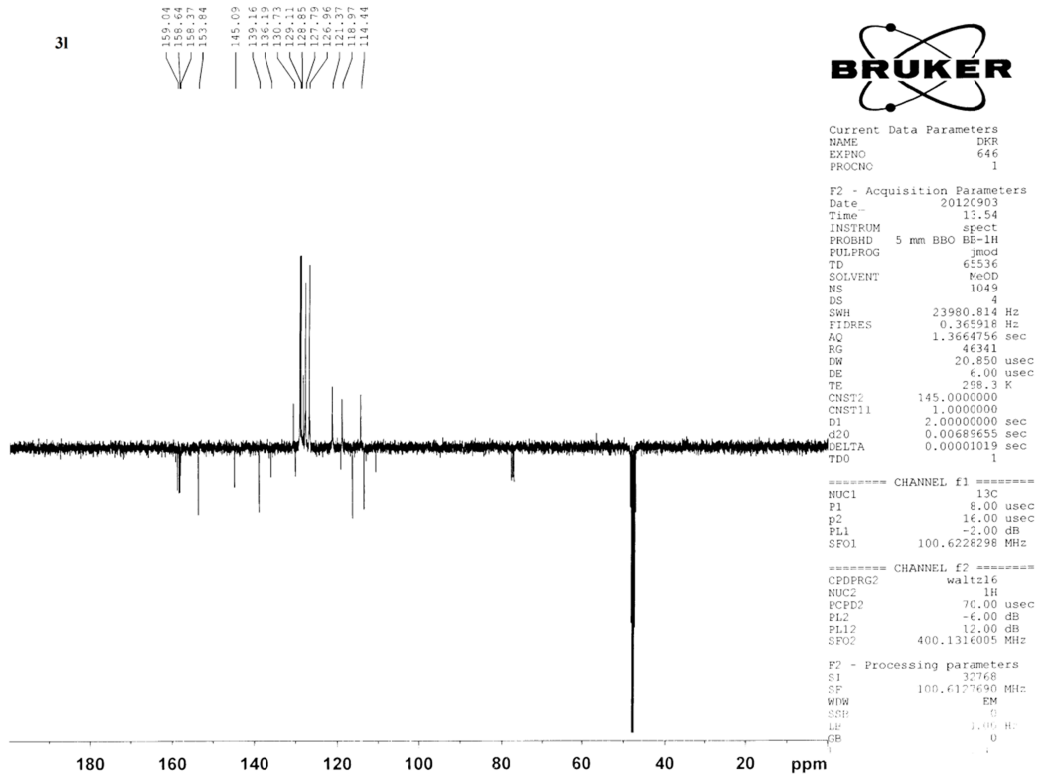

Figure S6 ^{13}C NMR of 3l