

# Supplementary Materials: Palladium Nanoparticles Tethered in Amine-Functionalized Hypercrosslinked Organic Tubes as an Efficient Catalyst for Suzuki Coupling in Water

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## Spectroscopic Data of $^1\text{H}$ & $^{13}\text{C}$ NMR for Suzuki Coupling Products

1. **Biphenyl:** Colorless solid, m.p. = 65 °C;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 7.5 (d, 4H,  $J$  = 8.7 Hz, ArH),  $\delta$  = 7.4 (t, 4H,  $J$  = 7.77 Hz, ArH),  $\delta$  = 7.26 (t, 2H,  $J$  = 7.32 Hz) ppm;  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 141.4, 129, 128, 127.3 ppm.
2. **4-Nitro-Biphenyl:** Yellow solid, m.p = 114 °C;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 8.3 (d, 2H,  $J$  = 8.84 Hz, ArH), 7.76 (d, 2H,  $J$  = 8.85 Hz, ArH), 7.6 (d, 2H,  $J$  = 7.85), 7.53 (m, 3H, ArH) ppm;  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 147.7, 147.3, 139, 129.2, 130, 128, 127.5, 124.2 ppm.
3. **4-Acetyl-Biphenyl:** White powder, m.p = 118 °C;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 2.6 (s, 3H,  $-\text{CH}_3$ ), 8.0 (d, 2H,  $J$  = 8.30 Hz, ArH), 7.7 (d, 2H,  $J$  = 8.30 Hz, ArH), 7.64 (d,  $J$  = 7.2 Hz, 2H, ArH), 7.6 (m, 3H, ArH) ppm;  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 27, 198, 146, 139, 135.5, 129, 128.4, 127.4, 127.4 ppm.
4. **Product, 4-Methoxy-Biphenyl:** White solid, m.p = 92 °C;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 3.87 (s, 3H,  $-\text{CH}_3$ ), 6.9 (d, 2H,  $J$  = 8.76 Hz, ArH), 7.3 (t, 2H,  $J$  = 7.24 Hz, ArH), 7.36 (t, 1H,  $J$  = 7.29 Hz, ArH), 7.5 (m, 4H, ArH) ppm;  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 160, 140.3, 134, 128.8, 128.5, 126.3, 126.9, 114.3, 56 ppm.
5. **4-Methyl-Biphenyl:** White solid, m.p = 50 °C;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 2.38 (s, 3H,  $-\text{CH}_3$ ), 7.6 (d, 2H,  $J$  = 7.10 Hz, ArH), 7.5 (d, 2H,  $J$  = 8.13 Hz), 7.45 (t, 2H,  $J$  = 7.2 Hz), 7.35 (t, 1H,  $J$  = 7.23 Hz), 7.3 (d, 2H,  $J$  = 7.8 Hz);  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 142, 139, 137.2, 136, 133.8, 129.8, 128.91, 128.23, 127.2 ppm.
6. **4-Phenyl-Benzonitrile:** Pale yellow solid, m.p = 85 °C;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 7.74 (d, 4H,  $J$  = 8.62 Hz, ArH), 7.61 (d, 2H,  $J$  = 7.82 Hz, ArH), 7.57 (m, 3H, ArH);  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ):  $\delta$  = 145.84, 139.3, 132.75, 129.26, 128.81, 127.89, 127.38, 119.08, 111.08 ppm.
7. **Biphenyl-4-carboxylic acid:** White solid, m.p = 228 °C;  $^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ ):  $\delta$  = 7.8 (d, 2H,  $J$  = 8.49 Hz, ArH), 7.60 (d, 2H,  $J$  = 8.46 Hz, ArH), 7.71 (d, 2H,  $J$  = 6.44 Hz), 7.33 (m, 3H, ArH) ppm;  $^{13}\text{C}$  (75 MHz,  $\text{DMSO}-d_6$ ):  $\delta$  = 168.2, 135.1, 132.31, 131.8, 130.8, 128.1, 127.9 ppm.