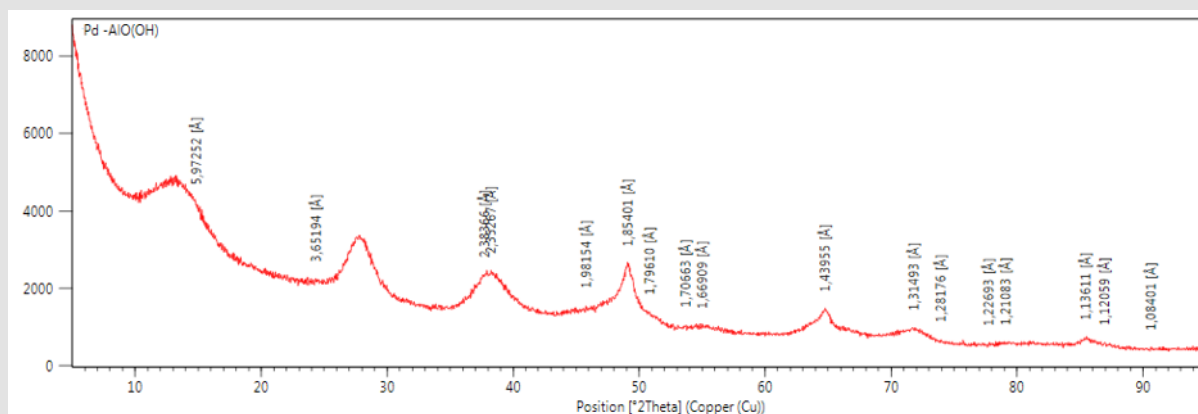
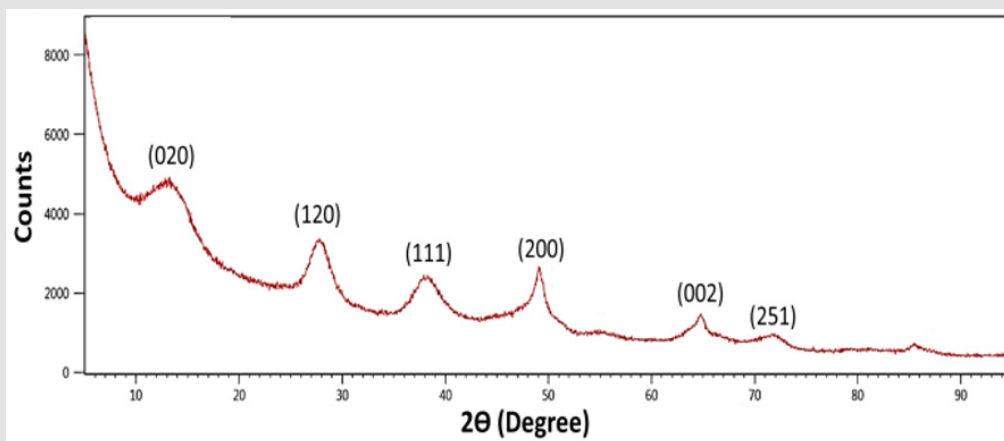


Synthesis of N-Arylimidazole Derivatives From Imidazole and Arylhalides in the Presence of Recoverable Pd/AIO(OH) NPs

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Peak List
98-009-3729; Boehmite; H1 Al1 O2
98-006-4922; Palladium; Pd1
98-002-9281; Palladinite; O1 Pd1
98-004-3732; Corundum; Al2 O3
98-005-2255; Aluminum; Al1

Figure S1: XRD pattern spectrum of Pd/AIO(OH).

¹H/¹³C NMR Data of *N*-Arylimidazole Derivates

***N*-fenil imidazol (2).** ¹H NMR (400 MHz, CDCl₃, δ ppm) **8.00 (s, 1H), 7.53–7.48 (m, 2H), 7.40–7.38 (m, 3H), 7.26 (s, 1H), 7.21 (s, 1H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm): **138.3, 135.9, 130.5, 130.1, 127.6, 122.1, 118.7.**

1-(4-nitrofenil)-1*H*-imidazol (6). ¹H NMR (400 MHz, CDCl₃, δ ppm) **7.32(s, 1H), 7.36–7.39 (s, 1H), 7.97–7.89 (s, 1H).7.62–7.59 (q, 2H), 8.41–8.38 (q, 2H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm): **146.5, 139.8, 135.6, 131.2, 120.8, 117.6.**

1-(4-Bromofenil)-4-nitro-1*H*-imidazol (10). ¹H NMR (400 MHz, CDCl₃, δ ppm): **8.92 (d, *J* = 1.5 Hz, 1H), 8.39 (d, *J* = 1.5 Hz, 1H), 7.72 (m, 4H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm):**148.8, 136.1, 134.1, 132.3, 123.8, 122.9, 121.3, 119.9.**

1-(4-Metoksifenil)-4-nitro-1*H*-imidazol (12). ¹H NMR (400 MHz, CDCl₃, δ ppm): **8.98 (d, *J* = 1.5 Hz, 1H), 8.32 (d, *J* = 1.5 Hz, 1H), 7.78 (dd, *J* = 6.8, 2.1 Hz, 2H), 7.18 (dd, *J* = 6.8, 2.1 Hz, 2H), 3.83 (s, 3H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm): **159.1, 147.2, 135.8, 128.6, 123.1, 119.9, 114.2, 55.5.**

1-(4-Metoksifenil)-2-metil-4-nitro-1*H*-imidazol (13). ¹H NMR (400 MHz, CDCl₃, δ ppm): **8.51 (s, 1H), 7.54 (d, *J* = 9.0 Hz, 2H), 7.13 (d, *J* = 9.0 Hz, 2H), 3.88 (s, 3H), 2.22 (s, 3H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm): **159.1, 145.6, 145.1, 128.5, 127.5, 122.4, 114.3, 55.8, 13.2.**

4-Etoksikarbonil-1-(2-nitrofenil)imidazol (15). ¹H NMR (400 MHz, CDCl₃, δ ppm): **8.13 (dd, *J* = 8.0, 1.5 Hz, 1H), 7.85–7.67 (m, 2H), 7.72 (d, *J* = 1.5 Hz, 1H), 7.64 (d, *J* = 1.5 Hz, 1H), 7.55 (dd, *J* = 8.0, 1.5 Hz, 1H), 4.44 (q, *J* = 7.0 Hz, 2H), 2.26 (s, 3H), 1.43 (t, *J* = 7.0 Hz, 3H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm): **162.6, 145.4, 138.0, 135.1, 134.2, 130.6, 129.7, 128.9, 126.5, 125.1, 61.2, 14.4.**

4-Etoksikarbonil-1-(4-metilfenil)imidazol (17). ¹H NMR (400 MHz, CDCl₃, δ ppm): **7.96 (d, *J* = 1.5 Hz, 1H), 7.84 (d, *J* = 1.5 Hz, 1H), 7.36–7.28 (m, 4H), 4.44 (q, *J* = 7.0 Hz, 2H), 2.41 (s, 3H), 1.48 (t, *J* = 7.0 Hz, 3H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm): **162.8, 146.3, 138.4, 136.2, 134.3, 134.7, 130.1, 124.0, 121.8, 60.8, 20.6, 14.4.**

4-Etoksikarbonil-1-(2-klorofenil)imidazol (19). ¹H NMR (400 MHz, CDCl₃, δ ppm): **7.87 (d, *J* = 1.5 Hz, 1H), 7.75 (d, *J* = 1.5 Hz, 1H), 7.64–7.59 (m, 1H), 7.49–7.38 (m, 3H), 4.45 (q, *J* = 7.0 Hz, 2H), 2.25 (s, 3H), 1.45 (t, *J* = 7.0 Hz, 3H).** ¹³C NMR (100 MHz, CDCl₃, δ ppm): **162.4, 138.1, 134.4, 133.5, 130.7, 130.8, 129.9, 127.1, 127.4, 125.3, 60.2, 14.5**