Electronic supplementary materials *Mendeleev Commun.*, 2012, **22**, 167−168

Simple and efficient synthesis of substituted 1*H*-indazoles

Galina P. Sagitullina,* Anna K. Garkushenko, Nikolay V. Poendaev and Reva S. Sagitullin

3,5-Bis(4-chlorobenzoyl)-1,2,6-trimethylpyridinium fluoridosulfate **2b**: colourless crystals, yield 97 %, mp 263−264 °C (ethanol). ^{1}H NMR (DMSO-d_6), δ: 2.71 (s, 6H, 2,6-Me), 4.18 (s, 3H, N-Me), 7.66–7.74 (m, 4H, 3,5-COAr), 7.86–7.93 (m, 4H, 3,5-COAr), 8.61 (s, 1H, 4-H). Found (%): C, 53.09; H, 3.65; N, 2.75. Calc. for $C_{22}H_{18}Cl_2FNO_5S$ (%): C, 53.02; H, 3.64; N, 2.81.

1,2,6-Trimethyl-3,5-di(1-naphthoyl)pyridinium fluoridosulfate **2c**: colourless crystals, yield 94%, mp 247−248 °C (ethanol). ^{1}H NMR (DMSO-d_6), δ: 2.81 (s, 6H, 2,6-Me), 4.24 (s, 3H, N-Me), 7.57–7.77 (m, 6H, 1-Naphthoyl), 7.90–7.96 (m, 2H, 1-Naphthoyl), 8.03–8.10 (m, 2H, 1-Naphthoyl), 8.24–8.32 (m, 2H, 1-Naphthoyl), 8.65 (s, 1H, 4-H), 8.83–8.93 (m, 2H, 1-Naphthoyl). Found (%): C, 67.98; H, 4.60; N, 2.68. Calc. for $C_{30}H_{24}FNO_5S$ (%): C, 68.04; H, 4.57; N, 2.64.

(4-Methyl-6-methylamino-1,3-phenylene)bis[(4-chlorophenyl)methanone] **3b**: pale yellow crystals, yield 94%, mp 169−170 °C (ethanol). IR (ν/cm^{-1}): 3325 (NH), 1660, 1613 (C=O). ^{1}H NMR ($CDCl_3$), δ: 2.00 (s, 3H, 4-Me), 3.01 (d, 3H, NH-*Me*, *J* 5.1 Hz), 6.57 (s, 1H, 5-H), 7.26–7.32 (m, 2H, 1,3-COAr), 7.38–7.43 (m, 2H, 1,3-COAr), 7.44–7.50 (m, 2H, 1,3-COAr), 7.56–7.63 (m, 2H, 1,3-COAr), 7.97 (s, 1H, 2-H), 8.90 (br.s, 1H, N*H*-Me). Found (%): C, 66.40; H, 4.32; N, 3.52. Calc. for $C_{22}H_{17}Cl_2NO_2$ (%): C, 66.34; H, 4.30; N, 3.52.

(4-Methyl-6-methylamino-1,3-phenylene)bis(1-naphthylmethanone) **3c**: pale yellow crystals, yield 90%, mp 191−192 °C (propan-2-ol). IR (ν/cm^{-1}): 3310 (NH), 1650, 1618 (C=O). ^{1}H NMR ($CDCl_3$), δ: 2.76 (s, 3H, 4-Me), 3.12 (br.s, 3H, NH-*Me*), 6.69 (s, 1H, 5-H), 6.97–7.08 (m, 3H, 1-Naphthoyl), 7.12–7.15 (m, 1H, 1-Naphthoyl), 7.29–7.43 (m, 5H, 1-Naphthoyl, 2-H), 7.62–7.76 (m, 5H, 1-Naphthoyl), 7.81–7.85 (m, 1H, 1-Naphthoyl). Found (%): C, 83.92; H, 5.37; N, 3.27. Calc. for $C_{30}H_{23}NO_2$ (%): C, 83.89; H, 5.40; N, 3.26.