

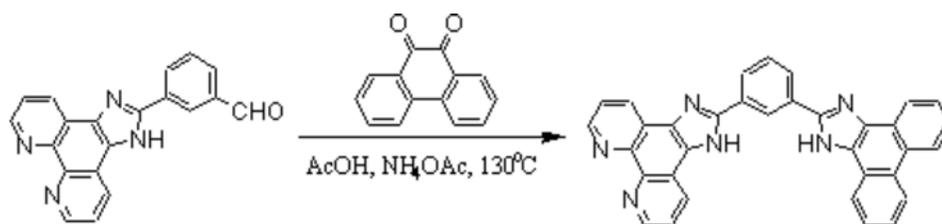
1-(Phenanthrolo[5,6-d]imidazol-2-yl)-3-(phenanthro[5,6-d]imidazol-2-yl)benzene

Hui Chao*, Cai-Wu Jiang, Xiang-Li Wang and Liang-Nian Ji**

State Key Laboratory of Optoelectronic Materials and Technologies / Department of Chemistry, Zhongshan University, Guangzhou 510275, P. R. China

E-mail: *ceschh@zsu.edu.cn, **cesjln@zsu.edu.cn

Received: 2 April 2002 / Accepted: 16 May 2002 / Published: 20 February 2003

Keywords: polypyridine ligands, phenanthroline, phenanthrenequinone

2-(3-Formylphenyl)imidazo[4,5-f][1,10]phenanthroline was prepared by a previously published method [1]. A mixture of 2-(3-formylphenyl)imidazo[4,5-f][1,10]phenanthroline (0.15 g, 0.46 mmol), 9,10-phenanthrenequinone (0.104 g, 0.50 mmol), ammonium acetate (0.713 g, 9.3 mmol) and glacial acetic acid (20 cm³) was refluxed for about 2 h. The cooled solution was filtered, diluted with water (ca, 60 cm³) and neutralized with concentrated aqueous ammonia. The crude product was collected and purified by column chromatography on alumina with ethanol-toluene (1:4 v/v) as eluent to give the title compound as pale yellow powders. Yield 0.183 g, 77.5%.

¹H NMR (500 MHz, *d*₆-DMSO): 13.99 (s, 1H), 13.71 (s, 1H), 9.25 (s, 1H), 9.07 (dd, 2H, *J* = 2), 9.05 (d, 2H, *J* = 8.5), 8.88 (d, 2H, *J* = 8.5), 8.69 (d, 2H, *J* = 7.5), 8.45 (d, 1H, *J* = 8.0), 8.40 (d, 1H, *J* = 8.5), 7.88-7.84 (m, 3H), 7.78 (t, 2H, *J* = 7.5), 7.67 (t, 2H, *J* = 7.5).

¹³C NMR (125 MHz, *d*₆-DMSO): 150.2, 148.7, 147.9, 143.8, 137.1, 135.8, 131.3, 130.8, 129.7, 127.9, 127.8, 127.6, 127.2, 126.9, 126.6, 125.5, 125.2, 124.2, 123.7, 123.1, 122.4, 122.1, 119.4.

IR (KBr, cm⁻¹): 3429.3, 1645, 1610, 1556, 1454, 1413, 1356, 1298, 1236, 1191, 1076, 954, 808, 756, 738, 710, 695, 672

UV-Vis (*l*, nm, in ethanol): 260, 324, 361.

FAB-MS ([*M*+1]⁺): 513.

Acknowledgement: Support for this research provided by the National Natural Science Foundation of China, the National Science Foundation of Guangdong Province and Research Fund of Royal Society of Chemistry U.K. is gratefully acknowledged.

References

1. Chao, H.; Ye, B.-H.; Li, H.; Li, R.-H.; Zhou, J.-Y.; Ji, L.-N. *Polyhedron* **2000**, *19*, 1975.

© 2002 [MDPI](#). All rights reserved.