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1,1-Dicyanovinyl-2-ferrocene

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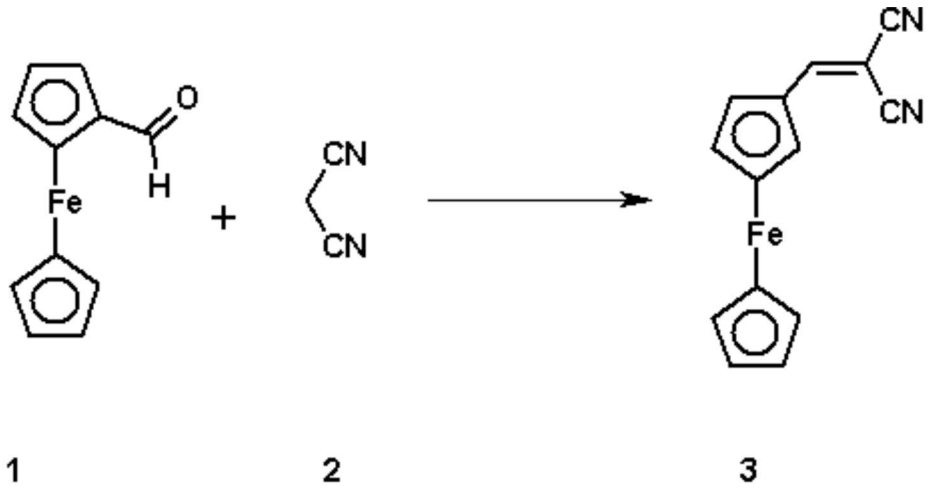

To a refluxed solution of ferrocenecarboxaldehyde **1** (2.14g, 0.01 mol) and malononitrile **2** (0.66g, 0.01 mmol) in ethanol (25 ml), Piperidine (1 ml) was added. After the addition, the solution became darker and the reflux was continued for six hours, then the solution was left to cool to room temperature and the products were precipitated. The precipitates were filter and washed with cold water and finally with ethanol, dried and recrystallized from ethanol to give the title compound **3**. Deep red crystal (1.31g, 50%).

Melting point: 231-233 °C (uncorrected).

UV (EtOH; λ_{max} nm; ε $dm^3.mol^{-1}.cm^{-1}$): 345 (16376); 395 (4945); 521 (4913).

IR (KBr, cm^{-1}): 2185, 2170 (CN); 1630 (C=C); 1101, 992, 814.

^{1}H-NMR (400 MHz; $CDCl_3$): δ= 7.70 (s, 1H, -CH=C); 5.01 (broad s, 2H, H-2, H4, H-5); 4.85 (broad s, 2H, H-2, H3, H-4); 4.33 (s, 5H, C_5H_5).

Elemental Analysis: Calculated for $C_{14}H_{10}N_2Fe$ (262.16): C 64.18%; H 3.82%; N 10.68%; Found; C 64.06%; H 4.01%; N 10.49%.

References

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