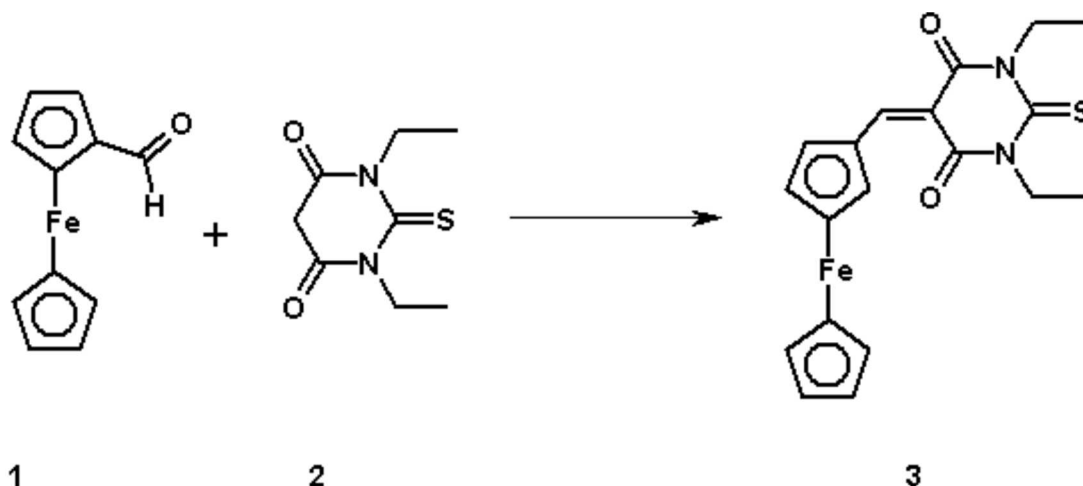


5-Ferrocnylidene(1,3-diethylthiobarbituric acid)**Abdullah Mohamed Asiri**Chemistry Department, Faculty of Science, King Abdul-Aziz University,
Jeddah 21413, P.O. Box 9028, Saudi Arabia.Tel. (+966)-2-6952293, Fax (+966)-2-6952293, e-mail: aasiri2@kaau.edu.sa*Received: 8 April 2004 / Accepted: 20 April 2004 / Published: 1 July 2005***Key Word:** ferrocen, knovenagel condensation, dyes

There is considerable interest in the synthesis of new materials with large second-order optical non-linearity because of their potential applications in optical data storage, telecommunications and optical signals processing¹⁻⁴. First and second hyperpolarizability can be observed with molecules which possess an electron donor and acceptor groups connected by a conjugated Π -electron bridge which allow the possibility of intramolecular charge transfer⁵⁻⁶.



To a refluxed solution of ferrocenecarboxaldehyde **1** (2.0g, 9.34 mmol) and N,N-diethylthiobarbituric acid **2** (1.87g, 9.34 mmol) in ethanol (50 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 product **3** was precipitated. The precipitates were filter and washed with cold water and finally with ethanol, dried and recrystallized from ethanol. Deep blue crystal (3g, 81.01%).

Melting point: 164-166 °C (uncorrected).

UV (EtOH; $\lambda_{\max}$ nm; ϵ (dm³·mol⁻¹·cm⁻¹): 374 (16521); 575 (3700).IR_{KBr} (KBr, cm⁻¹): 1680, 1660 (C=O); 1620 (C=C); 1115 (C=S); 1101, 992, 809.

¹H-NMR (400 MHz; CDCl₃): δ = 8.46 (1H, s, -CH=C); 5.36 (2H, broad s, H-2, H4, H-5); 4.97 (2H, broad s, H-2, H3, H-4); 4.31 (5H, s, C₅H₅); 4.31 (4H, q, CH₂N); 1.32 (6H, t, CH₃CH₂N).

Elemental Analysis: Calculated for C₁₉H₂₀N₂O₂SFe (396.19): C, 57.57%; H, 5.05%; N, 7.07%. Found; C, 57.36%; H, 4.88%; N, 7.14%

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