

## TECH-NEWS

(An initiative of SCIENCE CLUB & PROJECT COMMITTEE, MITS-JADAN)  
Presents Technological Update On

### Ferrocene derivatives based electrochemical immunosensors

By

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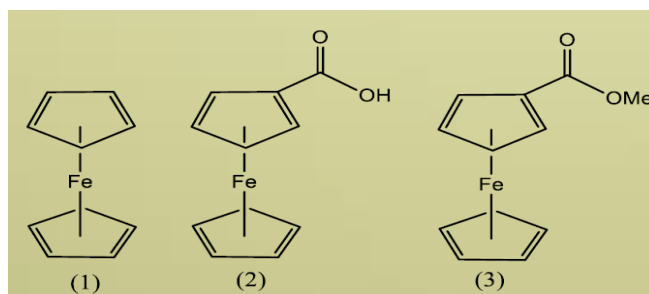
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#### Introduction:

Ferrocenes undergo a simple one-electron oxidation between the ferrocene and ferricinium states. This transition was measured by cyclic voltammetry to determine the redox potential for ferrocene and two of its derivatives (ferrocene carboxylic acid and methyl ferrocenoate).

**Keywords:** Nanomaterials, ferrocene, ELISA, electrochemical immunosensors



**Figure: Ferrocene Derivatives Analyzed (1) ferrocene (2) ferrocene carboxylic acid (3) methyl ferrocenoate**

#### Electrochemical Properties of Ferrocene Derivatives:

Methyl ferrocenoate, ferrocene carboxylic acid, and ferrocene were then analyzed by cyclic voltammetry to determine their respective redox potentials (potential measured vs. Ag/AgCl reference electrode, 1 mM in acetonitrile containing 0.1 M sodium perchlorate) It was found that the ferrocenes substituted with electron withdrawing groups had a greater redox potentials than the unsubstituted ferrocene. This is because the electron-withdrawing groups make the metal center more electron-poor, and therefore more likely to be reduced.