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New Polymer Syntheses Part 57: Thermally Stable New Ferrocene-Polyazomethines, Synthetic Methodology, and Characterization

By: **Abdel-Rahman, MA** (Abdel-Rahman, Mona Ahmed)^[1]; **Hussein, MA** (Hussein, Mahmoud Ali)^[1,2]
; **Aly, KI** (Aly, Kamal Ibrahim)^[1]; **Sarhan, AAH** (Sarhan, Abdelwareth Abdel-Haleam)^[1]

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Abstract

A new interesting category of higher thermally stable polyazomethines containing ferrocene in the polymers main chain 6a-e was synthesized by solution-polycondensation reaction of 1-(m-formylphenyl)-1'-(5-formyl-2-methoxyphenyl)-ferrocene monomer 4 with different aliphatic and aromatic diamines. A model compound 5 was synthesized from dialdehyde monomer 4 with aniline and was characterized by elemental and spectral analyses. The desirable resulting polymers were characterized by elemental and spectral analyses, in addition to solubility measurement using different solvents. The thermal properties of these polymers were evaluated by thermogravimetric analysis (TGA) and differential scanning calorimetry (DSC) measurements. The redox behaviours were studied for the ferrocene polymers in comparison with both the parent ferrocene monomer and the model compound by using cyclic voltammetry (CV).

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KeyWords Plus: ELECTROCHEMICAL PROPERTIES; AROMATIC POLYAZOMETHINES; SCHIFF-BASES; MAIN-CHAIN; MOIETIES; COMPLEXES; CATALYSTS; ETHYLENE; LACTIDE; RING

Author Information

Reprint Address: Abdel-Rahman, MA (reprint author)

+ Assiut Univ, Fac Sci, Dept Chem, Polymer Lab 122, Assiut 71516, Egypt.

Addresses:

+ [1] Assiut Univ, Fac Sci, Dept Chem, Polymer Lab 122, Assiut 71516, Egypt

- [2] King Abdulaziz Univ, Fac Sci, Dept Chem, Jeddah 21589, Saudi Arabia

Organization-Enhanced Name(s)

King Abdulaziz University

E-mail Addresses: manoush00@yahoo.com

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