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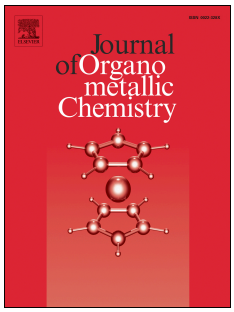

Simple and rapid synthesis of conducting metallopolymers, their electrochemical characterizations and application in electrochromics

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Simple and rapid synthesis of conducting metallopolymers, their electrochemical characterizations and application in electrochromics

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Abstract

Conducting metallopolymers have attracted a great deal of attention due to their multifunctional properties based on presence of metal centers as well as the interactions metal and p-conjugated polymer backbone. Due to their multifunctional properties, conducting metallopolymers have a great potential to use in various technological applications. In this work, starting with Lawesson's reagent and hydroxyl functionalized thiophene, a simple and rapid synthesis method for design conductive metallopolymer is proposed. Structural and electrochemical characterization of trans–bis[O-(thiopheneth-3-yl)(4-methoxyphenyl) dithiophosphonato]nickel(II) (TBTNi) were achieved. Spectroelectrochemical and electrochromic properties of the copolymer of TBTNi with thiophene were investigated.

Keywords: metallopolymer, conducting polymer, electrochromic, spectroelectrochemistry, dithioorganophosphonates

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