



Review

Review on synthesis of ferrocene-based redox polymers and derivatives and their application in glucose sensing



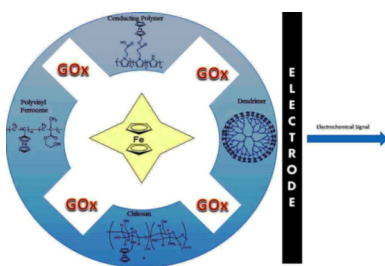
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HIGHLIGHTS

- Synthesis and analytical performance of ferrocene as redox mediators were discussed.
- Key features are their stability and excellent redox properties.
- Applications of ferrocene-based polymers in other biosensors were briefly mentioned.
- Challenges in this field and future trend were discussed.

GRAPHICAL ABSTRACT



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ABSTRACT

The interest in glucose biosensors persisted over many years and persistent efforts have been made to develop long term stable glucose biosensors with precision, smart analytical performance, good linearity and resistance to communal interferences. In this regard, ferrocene-based polymers and derivatives (FBPDs) for the development of glucose biosensor (GBs) as redox mediators have acquired utmost attention of the scientists, especially in the second generation biosensors, as a large number of innovative molecules have been synthesized. Most of the FBPDs are considered as active components in the development of GBs, due to their ease of modification, biocompatibility, stability, large surface area, good electrical conductivity and especially excellent redox properties. This review provides a brief description of synthesis, analytical performance and glucose sensing application of ferrocene-based dendrimers, polythiophenes, polypyrroles, polyethylenimine, chitosan and carbon nano tubes (CNTs). Moreover, the analytical performance of ferrocene-based glucose biosensors (FBGBs) is summarized and the problems associated with the construction of GBs and the future trends are discussed.

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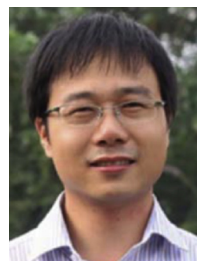
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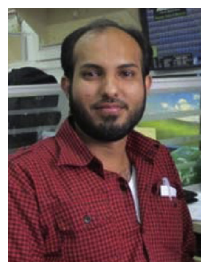
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