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Composites Based on Conducting Polymers and Carbon Nanomaterials for Heavy Metal Ion Sensing (Review)

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ABSTRACT

Current review signifies recent trends and challenges in the development of electrochemical sensors based on organic conducting polymers (OCPs), carbon nanotubes (CNTs) and their composites for the determination of trace heavy metal ions in water are reviewed. OCPs and CNTs have some suitable properties, such as good electrical, mechanical, chemical and structural properties as well as environmental stability, etc. However, some of these materials still have significant limitations toward selective and sensitive detection of trace heavy metal ions. To overcome the limitations of these individual materials, OCPs/CNTs composites were developed. Application of OCPs/CNTs composite and their novel properties for the adsorption and detection of heavy metal ions outlined and discussed in this review.

KEYWORDS: Carbon nanotubes composite conducting polymer heavy metals sensors

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