

Preparation and characterization of Agar-based electrolyte with nickel oxide nanoparticles

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The development of new solid materials for application as electrolytes offers opportunity for the creation of new generation systems and electric power storage and stock systems that can revolutionize a lot of areas of the industry. Recently it was proposed by Gandini et al [1, 2] a new type of electrolyte solid polymeric based on natural polymeric. The present work aims to obtain solid polymeric electrolytes through agar plasticized with glycerin and containing acetic acid [3]. The films were characterized through techniques of ultraviolet spectroscopy (UV-vis), scanning electronic microscopy (SEM), X-ray and electrochemical impedance spectroscopy (EIS). The obtained films were also submitted to ionic conductivity measurements that revealed that the value with nanoparticle of nickel oxide was about 2.19×10^{-5} S/cm at room temperature. The conductivity values show that the systems studied here can be applied in electrochromic devices as a solid polymer electrolyte.

Keywords: Solid electrolyte, conductivity, nanoparticles

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