

## Synthesis and Properties of the Copolymer Styrene-5-(4-Oxipentenylfenil)-2-Octyltetrazol to use as Electrolyte.

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### ABSTRACT

Sustainable growth requires increasing alternative sources of power generation and such task has been undertaken in the majority of research centers around the world. The high levels of pollution caused by the burning of fossil fuels used for power generation, especially in the use of vehicles in general, causes attention and is directed towards clean sources of power generation. In this respect, fuel cells appear as magnificent sources of clean energy generation. However, these materials have limitations on their application and durability, mainly related to the dependence of water, which limits the operating conditions of the cells; as well as problems with fuel permeation. This work aims to elucidate the relationship between structure and properties of new materials that can be used as solid electrolytes in fuel cells. Copolymers from comonomers styrene and 5-(4-oxipentenylfenil)-2-octyltetrazol were synthesized and characterized in a 92:8 molar ratio. Copolymers prepared were evaluated in their chemical structure, thermal stability and thin film morphology. The effect of material structure on physical properties and conductivity were also investigated.

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