

Poly(acrylonitrile)-montmorillonite nanocomposites. Effects of the intercalation of the filler on the conductivity of composite polymer electrolytes

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In this work, a series of composite polymer electrolytes (CPEs) basically constituted by polyacrylonitrile (PAN) and a clay, montmorillonite (Bentonite), as filler have been developed, in which the clay in its lithiated form was used both as prepared and intercalated with PAN. The effect of these two forms of nanoceramic active filler on the properties of the CPEs was analyzed. Results show that the ionic conductivity of the CPEs using as filler Bentonite-Li⁺-polyacrylonitrile nanocomposite is about one order of magnitude higher than that using Bentonite-Li⁺ under the same conditions. The effect of the concentration of the filler on the conductivity of the products is discussed. © 2009 Elsevier Ltd. All rights reserved.