Patent Search

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Abstract:

The present invention describes a method for preparing silver paste. PVP silver paste are prepared by adding lithium doped silver nanoparticles in PVP solution. 160 mg of lithiu doped silver nanoparticles are dispersed in 20 mL of milli Q water and sonicated for 20 min. A separate solution of 50% w/v PVP in 20 ml double distilled water is stirred for 1 hour. The two solutions are intermixed with each other and dispersed well using ultrasonicator.

Complete Specification

DESC:FIELD OF INVENTION:
This invention generally relates to the field of a method for preparing silver paste, and more particularly relates to silver nanoparticles are doped with lithium ions. Lithium ion doped silver nanoparticles are incorporated into PVP aqueous solution to prepare the conducting silver paste.
BACKGROUND OF THE INVENTION
Solid polymer electrolytes have inspired remarkable research efforts due to their multiple potential uses in diverse electrochemical devices such as secondary batteries, super capacitors, fuel cells, and sensors. PVP is a unique conjugate polymer due to its high amorphous nature, which allows for faster ionic mobility, and it is also easily soluble in water. The pyrrolidone group of the PVP is well known to form various salt complexes with many inorganic salts. Another significant advantage of the PVP is that it can be thermally cross-linked, resulting in suitable thermal stability, and improves the mechanical strength of the blended polymer material. Lithium ion conducting solid polymer electrolytes have received a great deal of interest in the last two decades. Lithium polymer have drawn much attention due to their wide variety of advantages such as the absence of electrolyte leakage, light weight, ease of fabrication, flexible geometry and improved safety. Hence, lithium salt has been chosen as a dopant to present blended polymer complex electrolytes. Despite the blended polymer films containing some conducting ions like lithium, there is no significant ionic conductivity that might be achieved until now. To overcome this problem, we can add some nanoparticles to the polymer matrix. The major goal of the researchers has been directed towards improving the ionic conductivity at ambient temperature, while retaining the mechanical properties and stability towards metallic anodes by the incorporation of nanostructured inorganic fillers like SiO2, TiO2 and Al2O3 and also some metal nanoparticles like silver (Ag) , Fe , Cu-Sn , etc., in the polymer electrolytic systems. By using different additives such as nanoparticles, polymer composites may be made more durable, stiffer, and electrically conductive. The majority of these alterations are

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