

A comparison study of a gel polymer electrolyte with the parent liquid electrolyte

The origin of gel polymer electrolytes is a result of the attempts to overcome the drawbacks of solid polymer electrolytes and liquid electrolytes. The most important feature they have is the appreciable conductivity values with mechanical properties at ambient temperatures. So far, no solid polymer electrolyte or liquid electrolyte has exhibited that property. Hence, gel polymer electrolyte or liquid electrolyte has exhibited that property. Hence, gel polymer electrolytes are considered as suitable substitutes for solid polymer electrolytes and liquid electrolytes. Generally, a gel electrolyte consists of a liquid electrolyte trapped in a polymer network. As liquid electrolytes, a mixture of a salt and one or few solvents are used. Some of the polymers used are polyacrylonitrile (PAN) and polymethylmethacrylate (PMMA). This paper describes about a comparison study of the gel electrolyte, PAN: EC:PC:LiCF₃SO₃ with its parent liquid electrolyte. Room temperature conductivity of the two systems with

varying salt concentrations have been presented and the performance in Li cells have been discussed.