

ABSTRACT

The present application belongs to the technical field of separator material preparation, in particular to a microporous membrane, and a preparation method therefor and an application thereof. The microporous membrane includes a polymer and an ionic liquid. Based on a total mass of the microporous membrane, the microporous membrane includes 0.01 wt% - 5 wt% of the ionic liquid, optionally, 0.1 wt% - 5 wt% of the ionic liquid. By introducing an appropriate amount of the ionic liquid into the microporous membrane, the ionic liquid can be continuously or discontinuously adsorbed on surfaces of fibrils inside the microporous membrane. The ionic liquid is adsorbed on the surfaces of the fibrils inside the microporous membrane by means of lipophilic ends of the ionic liquid. This can not only eliminate internal static electricity, but also better avoid the reduction of ionic conductivity, increasing the migration speed of ions in an electrolyte solution, and reducing lithium dendrites. When the microporous membrane of the present application is used as separators of batteries, an appropriate amount of the ionic liquid is added to the microporous membrane, which is conducive to alleviating the problem of static electricity accumulation in the microporous membrane, and meanwhile enables the microporous membrane to have low thermal shrinkage, thereby avoiding the compromise of battery capacity and the occurrence of electrochemical safety issues.

FIG.1