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本国际公布:
— 包括国际检索报告(条约第21条(3))。

(54) **Title:** COMPOSITE SEPARATOR, PREPARATION METHOD THEREFOR, AND USE THEREOF

(54) 发明名称: 一种复合隔膜及其制备方法和应用

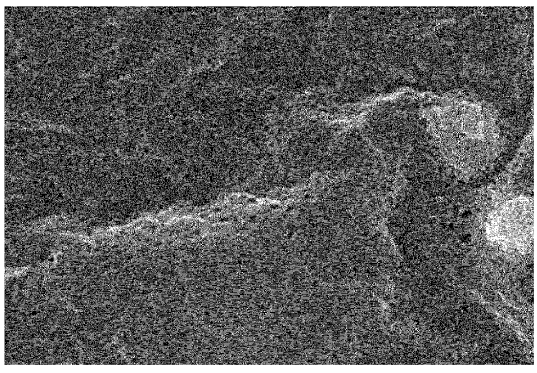


图 1

(57) **Abstract:** A composite separator, a preparation method therefor, and a use thereof. The composite separator comprises a nanofiber membrane and a hydrophobic polymer resin layer, the nanofiber membrane comprising a nanofiber layer, and the hydrophobic polymer resin layer being modified on at least one surface of the nanofiber layer. The ratio of the average volumetric pore size of the hydrophobic polymer resin layer to the average volumetric pore size of the nanofiber membrane is 1.3-1.75. By means of controlling the average volumetric pore size of the hydrophobic polymer resin layer to be greater than the average volumetric pore size of the nanofiber membrane, and controlling the pore size ratio of the two to be within a specific range, the hydrophobic polymer resin layer can not only facilitate the discharge of moisture from the nanofiber membrane in a drying stage during preparation, but also effectively prevent the nanofiber membrane from absorbing moisture in the air, thereby allowing the moisture content of the composite separator to be relatively low. In addition, the pore size ratio of the two being within a specific range also helps prevent lithium ion conduction from being affected by pore blockage of the nanofiber membrane.

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(57) 摘要: 一种复合隔膜及其制备方法和应用，所述复合隔膜包括纳米纤维膜以及疏水性聚合物树脂层，所述纳米纤维膜包括纳米纤维层，所述疏水性聚合物树脂层修饰于纳米纤维层至少一表面；所述疏水性聚合物树脂层的平均体积孔径与所述纳米纤维膜的平均体积孔径的比为1.3~1.75。通过控制疏水性聚合物树脂层的平均体积孔径大于纳米纤维膜的平均体积孔径，并控制二者的孔径比在特定范围内，使得疏水性聚合物树脂层既能够在制备过程的干燥阶段有利于纳米纤维膜中的水分排出，又能够有效阻碍纳米纤维膜吸收空气中的水分，使得复合隔膜的水分含量较低；此外，二者的孔径比在特定范围内，还有利于避免纳米纤维膜孔径堵塞而影响锂离子导通。