

Positive Effects of e-beam Irradiation in Inorganic Particle Based Separators for Lithium Ion Battery

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A novel kind of inorganic separator was prepared by coating inorganic sub-micron sized particles on a non-woven matrix, followed by e-beam irradiation treatment. Its characteristics were investigated by scanning electron microscopy, tensile strength analysis, thermogravimetric analysis, ionic conductivity measurements, and charge-discharge analysis. The mechanical and thermal properties of the separator were greatly enhanced by the simple curing under e-beam irradiation. However, there was no significant change in the morphology or ionic conductivity of the e-beam treated separator.