

Abstract

RECHARGEABLE ALKALINE METAL AND ALKALINE EARTH ELECTRODES HAVING CONTROLLED DENDRITIC GROWTH AND METHODS FOR MAKING AND USING THE SAME

A device for extending the life of a battery, including an electrode having a metal portion, wherein the metal portion is selected from the group including lithium, calcium, magnesium, sodium, potassium and combinations thereof, an electrolyte permeable membrane, and a metal dendrite seeding material disposed between the electrode and the membrane. The electrode, the membrane and the metal dendrite seeding material are positioned in an electrolyte matrix. At least one dendrite extends from the electrode toward the electrolyte permeable membrane combines with at least one dendrite extending from the dendrite seeding material.

Fig. 1