US009112243B2

(12) **United States Patent**
Shao et al.

(10) **Patent No.: US 9,112,243 B2**
(45) **Date of Patent: Aug. 18, 2015**

(54) **ENERGY STORAGE DEVICES HAVING ANODES CONTAINING MG AND ELECTROLYTES UTILIZED THEREIN**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 147 days.

(21) Appl. No.: **13/858,764**

(22) Filed: **Apr. 8, 2013**

(65) **Prior Publication Data**

US 2014/0302400 A1 Oct. 9, 2014

(51) **Int. Cl.**
H01M 10/0569 (2010.01)
H01M 10/054 (2010.01)
H01M 10/0568 (2010.01)

(52) **U.S. Cl.**
CPC ***H01M 10/0569*** (2013.01); ***H01M 10/054*** (2013.01); ***H01M 10/0568*** (2013.01)

(58) **Field of Classification Search**
CPC H01M 10/0569; H01M 10/054
USPC 429/188, 326, 341
See application file for complete search history.

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(57) **ABSTRACT**

For a metal anode in a battery, the capacity fade is a significant consideration. In energy storage devices having an anode that includes Mg, the cycling stability can be improved by an electrolyte having a first salt, a second salt, and an organic solvent. Examples of the organic solvent include diglyme, triglyme, tetraglyme, or a combination thereof. The first salt can have a magnesium cation and be substantially soluble in the organic solvent. The second salt can enhance the solubility of the first salt and can have a magnesium cation or a lithium cation. The first salt, the second salt, or both have a BH_4 anion.

16 Claims, 4 Drawing Sheets