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(54) **ELECTRODE MATERIALS FOR RECHARGEABLE ZINC CELLS AND BATTERIES PRODUCED THEREFROM**

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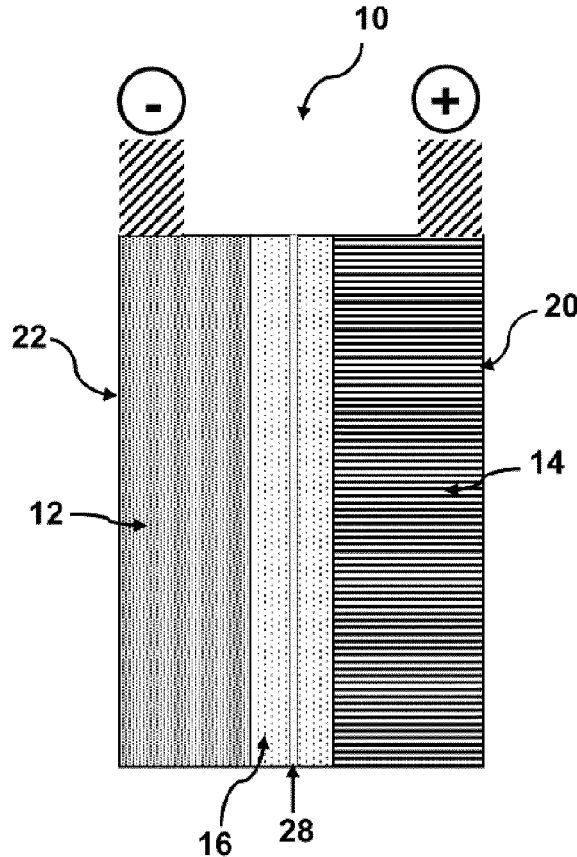
(51) **Int. Cl.**

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(57) **ABSTRACT**

The present disclosure discloses a rechargeable Zn battery based on layered/tunnelled structure vanadium/molybdenum oxides, with/without the presence of neutral/cationic/anionic species and/or water molecules inserted into the interlayers/tunnels, of nano/microparticle morphology as robust materials for high rate and long term reversible Zn<sup>2+</sup> ion intercalation storage at the positive electrode, that are coupled with a metallic Zn negative electrode, and an aqueous electrolyte. The positive electrode may include electronically conducting additives and one or more binders along with the Zn<sup>2+</sup> intercalation material; the negative electrode is Zn metal in any form; the aqueous electrolyte is of pH 1 to 9 and contains a soluble zinc salt in a concentration range from 0.01 to 10 molar.



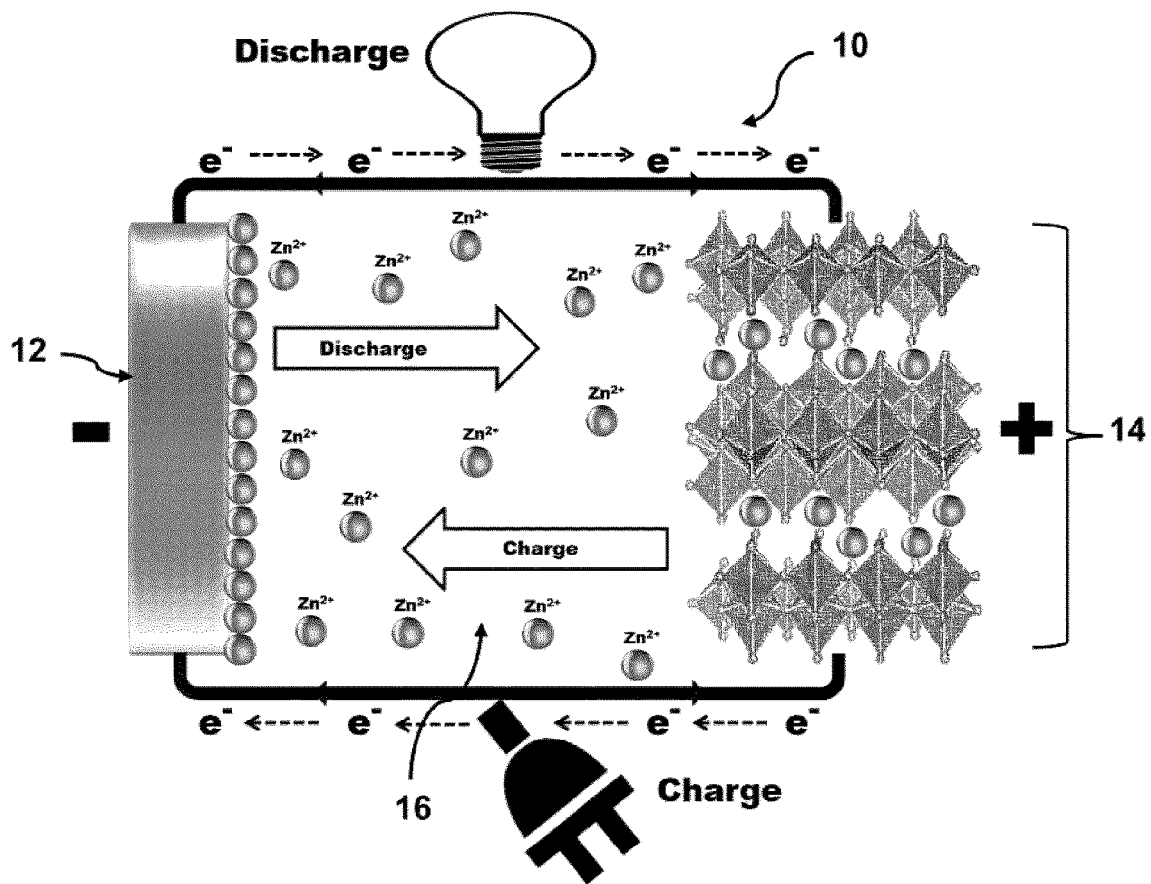


Figure 1A

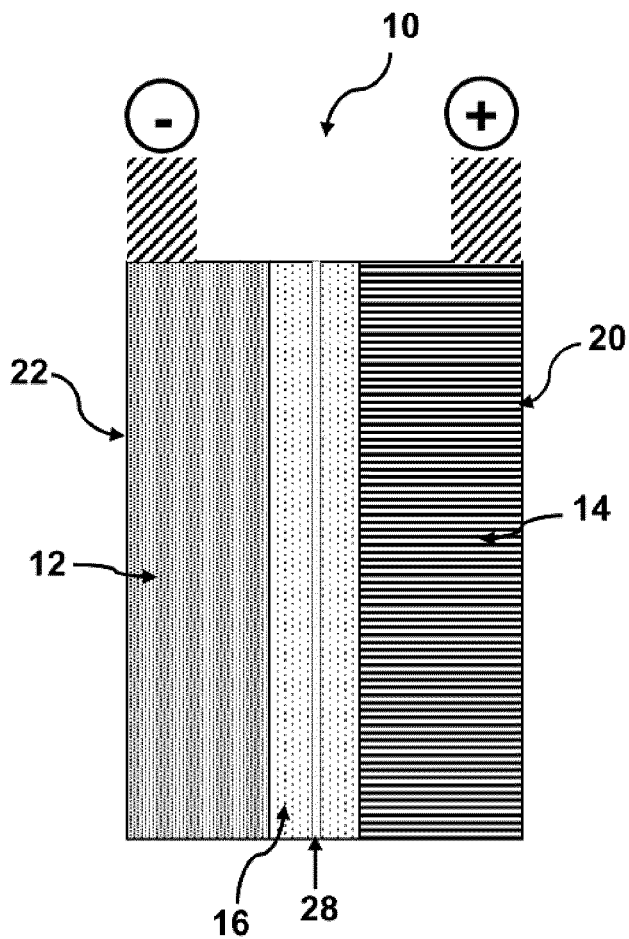


Figure 1B

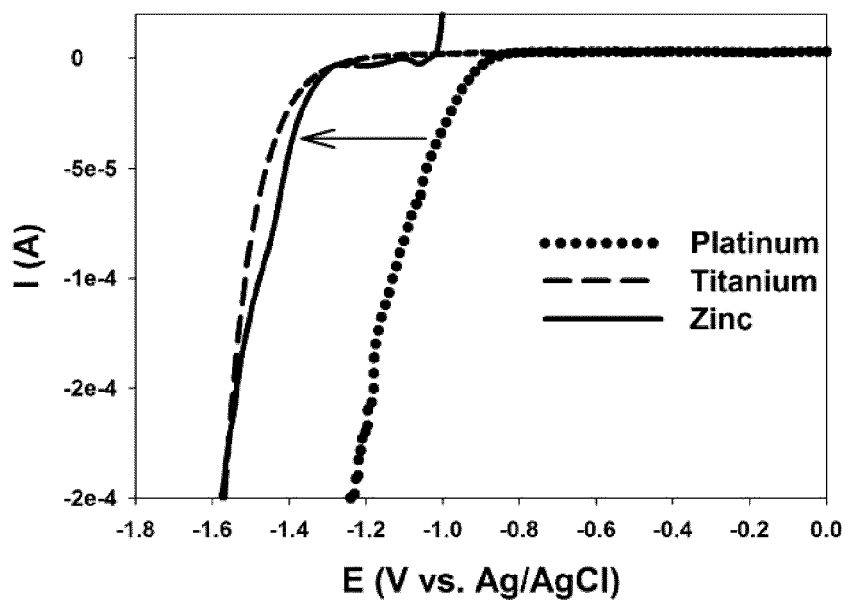


Figure 2

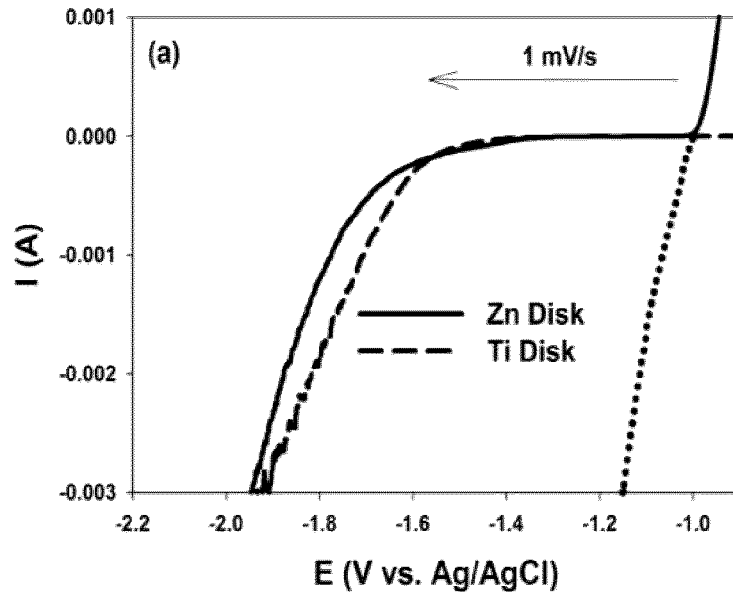


Figure 3A

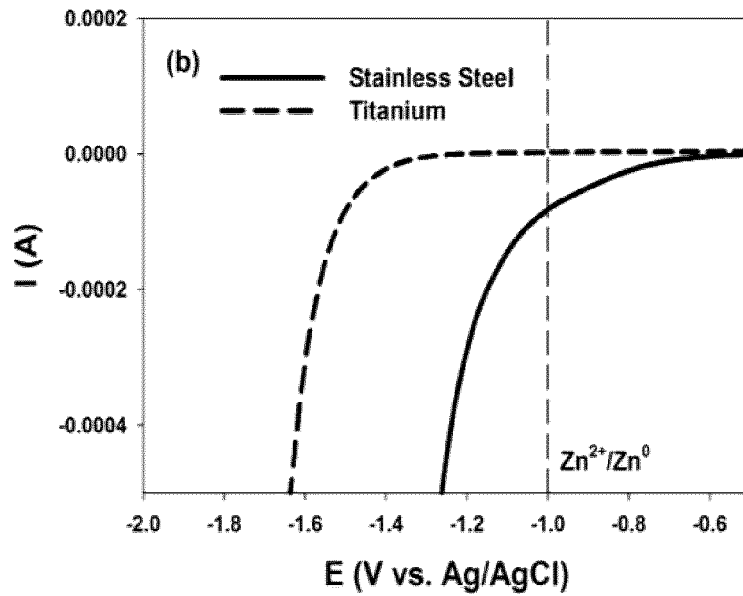


Figure 3B

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