

TITLE:

ENERGY STORAGE DEVICE MADE OF ALLUMINUM ELECTRODE

ABSTRACT

5 An energy storage device made of an aluminum electrode includes a positive electrode, a
negative electrode, a separator, and an electrolyte. The negative electrode is the aluminum
electrode. The separator is arranged between the positive electrode and the negative electrode.
The electrolyte is arranged between the positive electrode and the negative electrode and partly
located in the separator. The electrolyte includes an aluminum halide and an ionic liquid. The
10 aluminum halide is configured to produce a faradaic pseudo-capacitance reaction in the energy
storage device. The ionic liquid is configured to cooperate with the faradaic pseudo-capacitance
reaction in the energy storage device.

FIG. 1A