

INTEGRATED ELECTRODE FRAME STRUCTURE, AND PREPARATION METHOD THEREFOR AND APPLICATION THEREOF

ABSTRACT

The present application provides an integrated electrode frame and preparation method and use thereof. The integrated electrode frame includes a positive electrode frame, a negative electrode frame, and a membrane. Each of the positive electrode frame and the negative electrode frame is a flat plate with a central through-hole. The membrane is placed between the positive electrode frame and the negative electrode frame, and the membrane is located at the through-hole and hermetically connected to a peripheral edge of the through-hole. A peripheral edge of the positive electrode frame is hermetically connected to a peripheral edge of the negative electrode frame. A material composition of a connecting part of the positive electrode frame and the negative electrode frame contains at least one material which is the same as that of the positive electrode frame or the negative electrode frame. In the present application, the structures and materials of the electrode frames and the membrane are optimized to achieve a direct hermetical connection between the membrane and the electrode frames and improve the sealing reliability and volumetric energy density of an all-vanadium flow battery.

Fig. 2 for publication.