



US 20230231180A1

(19) **United States**(12) **Patent Application Publication**
ZENG(10) **Pub. No.: US 2023/0231180 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **FLAT-PLATE SODIUM METAL BATTERY
AND ELECTROCHEMICAL DEVICE**(71) Applicant: **CONTEMPORARY AMPEREX
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Ningde (CN)(21) Appl. No.: **18/189,309**(22) Filed: **Mar. 24, 2023****Related U.S. Application Data**(63) Continuation of application No. PCT/CN2022/
077901, filed on Feb. 25, 2022.(30) **Foreign Application Priority Data**

Jun. 26, 2021 (CN) 202110742606.2

Publication Classification(51) **Int. Cl.**
H01M 10/054 (2006.01)
H01M 4/58 (2006.01)**H01M 4/583** (2006.01)**H01M 4/62** (2006.01)**H01M 4/80** (2006.01)**H01M 50/414** (2006.01)(52) **U.S. Cl.**CPC **H01M 10/054** (2013.01); **H01M 4/5825**
(2013.01); **H01M 4/583** (2013.01); **H01M**
4/622 (2013.01); **H01M 4/80** (2013.01);
H01M 50/414 (2021.01); **H01M 2004/021**
(2013.01)

(57)

ABSTRACT

A flat-plate type sodium metal battery and an electrochemical device are described. The battery comprises a positive electrode plate and a negative electrode plate, the positive electrode plate provided with a first micro-through-hole arranged in an array on at least part of the surface thereof, the negative electrode plate provided with a second micro-through-hole arranged in an array on at least part of the surface thereof, wherein the first micro-through-hole and the second micro-through-hole have an overlapping area of $\geq 5\%$ of the total area of the second micro-through-hole of the negative electrode plate. Disposing a first micro-through-hole on the positive electrode plate, and a second micro-through-hole on the negative electrode plate, and setting the aperture size and aperture spacing of micro-through-holes are beneficial to increasing infiltration and penetration of the electrolyte in the positive electrode plate and are conducive to rapid infiltration to large-sized electrode plates.