US 20230231099A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2023/0231099 A1

GABEN (43) Pub. Date: Jul. 20, 2023

(54) **METHOD FOR MANUFACTURING AN ASSEMBLY COMPRISING A SEPARATOR AND POROUS ELECTRODE, AN ASSEMBLY COMPRISING A SEPARATOR AND POROUS ELECTRODE, AND MICROBATTERY CONTAINING SUCH AN ASSEMBLY**

(71) Applicant: **I-TEN**, Dardilly (FR)

(72) Inventor: **Fabien GABEN**, Dardilly (FR)

(21) Appl. No.: **17/996,346**

(22) PCT Filed: **Apr. 28, 2021**

(86) PCT No.: **PCT/IB2021/053498**

§ 371 (c)(1),
(2) Date: **Oct. 16, 2022**

(30) **Foreign Application Priority Data**

Apr. 28, 2020 (FR) 2004191

Publication Classification

(51) **Int. Cl.**

H01M 4/04	(2006.01)
H01M 10/058	(2006.01)
H01M 4/139	(2006.01)

(52) **U.S. Cl.**

CPC ***H01M 4/0404*** (2013.01); ***H01M 10/058*** (2013.01); ***H01M 4/139*** (2013.01)

(57) **ABSTRACT**

A method for manufacturing a lithium-ion microbattery having a capacity not exceeding 1 mAh, implementing a method for manufacturing an assembly comprising a porous electrode and a porous separator comprising a porous layer deposited on a substrate having a porosity comprised between 20% and 60% by volume, and pores with an average diameter of less than 50 nm. The separator comprises a porous inorganic layer deposited on the electrode, the porous inorganic layer having a porosity comprised between 20% and 60% by volume, and pores with an average diameter of less than 50 nm.