



US 20230231182A1

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2023/0231182 A1**
(43) **Pub. Date:** **Jul. 20, 2023**
YAMADA et al.(54) **ALL-SOLID-STATE SECONDARY BATTERY MIXTURE, ALL-SOLID-STATE SECONDARY BATTERY MIXTURE SHEET AND PRODUCTION METHOD THEREOF, AND ALL-SOLID-STATE SECONDARY BATTERY**(71) Applicant: **DAIKIN INDUSTRIES, LTD.**, Osaka (JP)(72) Inventors: **Takaya YAMADA**, Osaka (JP); **Masahiko YAMADA**, Osaka (JP); **Shigeaki YAMAZAKI**, Osaka (JP); **Junpei TERADA**, Osaka (JP); **Kae FUJIWARA**, Osaka (JP); **Kentarou HIRAGA**, Osaka (JP); **Xianwei SUI**, Osaka (JP)(73) Assignee: **DAIKIN INDUSTRIES, LTD.**, Osaka (JP)(21) Appl. No.: **18/176,184**(22) Filed: **Feb. 28, 2023****Related U.S. Application Data**

(63) Continuation of application No. PCT/JP2021/031852, filed on Aug. 31, 2021.

(30) **Foreign Application Priority Data**

Sep. 1, 2020 (JP) 2020-146853

Publication Classification(51) **Int. Cl.**
H01M 10/056 (2006.01)(52) **U.S. Cl.**
CPC .. **H01M 10/056** (2013.01); **H01M 2300/0091** (2013.01)(57) **ABSTRACT**

An all-solid-state secondary battery mixture, a secondary battery electrode mixture sheet containing the all-solid-state secondary battery mixture, and a secondary battery including the all-solid-state secondary battery sheet. Also provided is a method for producing an all-solid-state secondary battery sheet containing a polytetrafluoroethylene resin having a fine fiber structure. The all-solid-state secondary battery mixture includes a solid-state electrolyte and a binder. The binder is a polytetrafluoroethylene resin, and the polytetrafluoroethylene resin has a fibrous structure with a fibril diameter (median value) of 70 nm or less. In addition, the all-solid-state secondary battery mixture sheet contains the all-solid-state secondary battery mixture.