US 20240213792A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0213792 A1**

SOEJIMA et al. (43) **Pub. Date: Jun. 27, 2024**

(54) **BATTERY MODULE**

(71) Applicant: **Prime Planet Energy & Solutions, Inc.**, Tokyo (JP)

(72) Inventors: **Takanori SOEJIMA**, Toyota-shi (JP); **Hisataka FUJIMAKI**, Nisshin-shi (JP)

(73) Assignee: **Prime Planet Energy & Solutions, Inc.**, Tokyo (JP)

(21) Appl. No.: **18/395,028**

(22) Filed: **Dec. 22, 2023**

(30) **Foreign Application Priority Data**

Dec. 26, 2022 (JP) 2022-208370

Publication Classification

(51) **Int. Cl.**

H02J 7/00	(2006.01)
G01N 23/04	(2006.01)
G01N 23/083	(2006.01)
H01M 10/46	(2006.01)

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

CPC ***H02J 7/00714*** (2020.01); ***G01N 23/04*** (2013.01); ***G01N 23/083*** (2013.01); ***H01M 10/46*** (2013.01); ***H02J 7/0048*** (2020.01)

(57) **ABSTRACT**

The present disclosure provides a battery module that can properly suppress a high rate deterioration of a secondary battery and further that can maintain a charge efficiency equal to or more than a certain level. The herein disclosed battery module **1** includes a battery device **100** including a secondary battery **110** in which an electrode body and an electrolytic solution are accommodated inside a battery case, and includes a control device **200** that is configured to control a charge and discharge of the battery device **100**. Then, the control device **200** includes an increase amount measurer **210** that is configured to measure an increase amount L_{Δ} of an excess electrolytic solution of the secondary battery **110** for a charge, and includes a current value corrector **220** that is configured to perform a current correcting control in which a current value of a charge current is corrected with respect to the battery device **100** based on the increase amount L_{Δ} of the excess electrolytic solution. By doing this, it is possible to continue the charge while the current value is corrected according to an extent of the high rate deterioration, and thus it is possible to properly suppress the high rate deterioration of the secondary battery so as to maintain the charge efficiency equal to or more than a certain level.