

Search Report

Application No.

10202402555S

Application filing date

21/08/2024

(Earliest) Priority Date

This Search Report is issued under Section 29(5) of the *Patents Act*.

☒ It is also accompanied by a copy of each prior art document cited in this report, except where otherwise indicated.

1. ☐ Certain claims were found **unsearchable** (*see Box I*)

2. ☒ **Unity of invention** is lacking (*see Box II*)

3. ☐ The application discloses **nucleotide and/or amino acid sequence(s)** (*see Box III*)

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Office to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Office as appears in Box IV.

6. The figure of the **drawings** to be published with the abstract is Fig. no. 8,

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ because there are no drawings in the application.

☐ none of the figures.

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Box II Observations where unity of invention is lacking

1. There are multiple inventions in this application, as follows:

Group 1: Claims 1-12 relate to a battery sorting apparatus comprising an imaging device configured to capture an image of a battery to determine an actual orientation of the battery and a platform moveable relative to a base to align the battery along a predetermined orientation of a measurement device.

Group 2: Claims 13-17 relate to a battery sorting method comprising obtaining a discharging rate of the battery and determining a grade of the battery based on the discharging rate.

The common features among the inventions defined in the above 2 groups of claims which could potentially provide a contribution over the prior art relate to a battery sorting apparatus configured to measure electrical characteristics of the battery to determine a grade of the battery. However, the common features are disclosed in D1 (para. [0067]-[0079]). Thus, the inventions defined in the 2 groups of claims are not so linked as to form a single inventive concept involving one or more of the same or corresponding special technical features. Therefore, there is a lack of unity *a posteriori*.

2. Consequently, this report has been established in respect of the following parts of the application:

- ☐ all parts
- ☒ the parts relating to claim(s) no. 1-12

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A. CLASSIFICATION OF SUBJECT-MATTER According to International Patent Classification (IPC) G01R 1/04, G01R 31/385, H01M 10/48												
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) G01R, H01M Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic database consulted during the search (name of database and, where applicable, search terms used) FAMPAT: sorting, grading, battery, orientation, tilt, misalignment, rotate, platform, stage, discharge rate, probe, pitch and other related terms												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim no.										
Y A	US 2013/0317639 A1 (CHOI, S. ET AL.) 28 November 2013 Para. [0049]-[0052], [0076]-[0087], [0102], fig. 1, 7	1-6, 9 7-8, 10-12										
Y	CN 212808551 U (ALLEGRO TECH LTD) 26 March 2021 Para. [n0014], [n0017] of the machine translation, fig. 1-3	1-6, 9										
A	CN 220509099 U (GUANGDONG JINLU NEW ENERGY CO LTD) 20 February 2024 Whole document of the machine translation											
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input type="checkbox"/> See supplemental box for details of the scope of the search.												
Special categories of cited documents: <table border="0"> <tr> <td>A: document defining the general state of the art which is not considered to be of particular relevance</td> <td>T: later document published after the filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>E: earlier application or patent but published on or after the filing date</td> <td>X: document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>L: document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>Y: document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents; such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>O: document referring to an oral disclosure, use, exhibition or other means</td> <td>&: document member of the same patent family</td> </tr> <tr> <td>P: document published prior to the filing date but later than the priority date claimed</td> <td></td> </tr> </table>			A: document defining the general state of the art which is not considered to be of particular relevance	T: later document published after the filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	E: earlier application or patent but published on or after the filing date	X: document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	L: document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	Y: document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents; such combination being obvious to a person skilled in the art	O: document referring to an oral disclosure, use, exhibition or other means	&: document member of the same patent family	P: document published prior to the filing date but later than the priority date claimed	
A: document defining the general state of the art which is not considered to be of particular relevance	T: later document published after the filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention											
E: earlier application or patent but published on or after the filing date	X: document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone											
L: document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	Y: document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents; such combination being obvious to a person skilled in the art											
O: document referring to an oral disclosure, use, exhibition or other means	&: document member of the same patent family											
P: document published prior to the filing date but later than the priority date claimed												
Intellectual Property Office of Singapore 1 Paya Lebar Link #11-03 PLQ 1, Paya Lebar Quarter Singapore 408533 Email: operations@iposinternational.com		Date of actual completion of the search: 06/09/2024 Authorized Officer Sim Cheow Hin (Dr)										

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C. (Continuation) DOCUMENT CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim no.
A	CN 110539111 B (JIESHOU NANDU HUAYU POWER SOURCE CO LTD) 13 April 2021 Whole document of the machine translation	
A	KR 10-2022-0133417 A (KAPJIN CO LTD) 5 October 2022 Whole document of the machine translation	