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(54) Title: COMPOSITION COMPRISING AN ALKALI METAL SALT OF BIS(FLUORO SULFONYL)IMIDE

(57) Abstract: The present invention relates to a composition comprising an alkali metal salt of bis(fluoro sulfonyl)imide and to the use of such composition in an electrolyte for batteries.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. C01B21/086 C01B21/093
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C01B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| A | WO 2021/074142 A1 (SOLVAY [BE]) 22 April 2021 (2021-04-22) cited in the application examples 1, 3 | 1-12 |
| A | ----- US 2020/155963 A1 (SINGH RAJENDRA P [US] ET AL) 21 May 2020 (2020-05-21) claims 1-30; examples 1-8 | 1-12 |
| A | ----- CN 113 603 069 A (JIANGSU HSC NEW ENERGY MAT CO LTD) 5 November 2021 (2021-11-05) cited in the application claims 1-9; examples 1-3 | 1-12 |
| A | ----- WO 2020/099527 A1 (SOLVAY [BE]) 22 May 2020 (2020-05-22) claims 1-15; examples 1-3 | 1-12 |

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See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|----------------------------------------|-------------------|---------------------------|-------------------|
| WO 2021074142 A1 | 22-04-2021 | CN 114585586 A | 03-06-2022 |
| | | EP 4045459 A1 | 24-08-2022 |
| | | JP 2022552308 A | 15-12-2022 |
| | | KR 20220084067 A | 21-06-2022 |
| | | WO 2021074142 A1 | 22-04-2021 |
| ----- | | | |
| US 2020155963 A1 | 21-05-2020 | CN 113165875 A | 23-07-2021 |
| | | DE 112019005762 T5 | 29-07-2021 |
| | | GB 2593391 A | 22-09-2021 |
| | | JP 2022507459 A | 18-01-2022 |
| | | KR 20210092226 A | 23-07-2021 |
| | | US 2020155963 A1 | 21-05-2020 |
| | | WO 2020100114 A1 | 22-05-2020 |
| ----- | | | |
| CN 113603069 A | 05-11-2021 | NONE | |
| ----- | | | |
| WO 2020099527 A1 | 22-05-2020 | NONE | |
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