

## The latest content on IONEL™ patent rights

NIPPON SHOKUBAI CO., LTD. (the “NIPPON SHOKUBAI”) have been marketing Lithium bis (fluorosulfonyl) imide" "LiFSI" "(our product name" IONEL™ "), which is a lithium battery electrolyte. By using our IONEL™ as an electrolyte, it is effective in improving battery life, rate characteristics, and high / low temperature characteristics, and has been well received in related industries.

We are striving to protect our products by improving the performance of our products and filing numerous patent applications, including the following patent rights, in order to meet the needs of our customers.

### Patent No.

- EP 2 257 495 B1 SULFONYLIMIDE SALT AND METHOD FOR PRODUCING THE SAME  
currently in force in FR.
- EP 2 578 533 B1 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION METHOD  
THEREFOR currently in force in CZ, DE, FR, HU, PL, SE
- EP 2 505 551 B1 FLUOROSULFONYL IMIDE SALT AND METHOD FOR PRODUCING  
FLUOROSULFONYL IMIDE SALT  
currently in force in FR, HU, PL
- EP 2 958 183 B1 ELECTROLYTE SOLUTION AND LITHIUM ION SECONDARY BATTERY PROVIDED  
WITH SAME  
currently in force in DE, FR, GB, PL, HU
- EP 3 461 789 B1 PRODUCTION METHOD FOR ALKALI METAL SALT OF BIS(FLUOROSULFONYL)  
IMIDE  
currently in force in DE, FR
- EP 3 705 453 B1 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE  
currently in force in CZ, DE, FR, GB, HU, PL, SE
- EP 3 316 381 B1 CONDUCTIVE MATERIAL AND METHOD FOR PRODUCING OR PURIFYING THE  
SAME, AS WELL AS NON-AQUEOUS ELECTROLYTE SOLUTION COMPRISING SAID  
CONDUCTIVE MATERIAL  
currently in force in DE, FR
- EP 3 466 871 B1 METHOD FOR PRODUCING BIS(FLUOROSULFONYL)IMIDE ALKALI METAL SALT

AND BIS(FUOROSULFONYL)IMIDE ALKALI METAL SALT COMPOSITION  
currently in force in DE, FR

EP 3 466 872 B1 METHOD FOR PRODUCING BIS(FUOROSULFONYL)IMIDE ALKALI METAL SALT  
AND METHOD FOR PRODUCING NON-AQUEOUS ELECTROLYTIC SOLUTION  
currently in force in FR

US9079780 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION METHOD  
THEREOF

US9586833 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION METHOD  
THEREOF

US9985317 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION METHOD  
THEREOF

US10829377 METHOD FOR PRODUCING BIS(FUOROSULFONYL)IMIDE ALKALI METAL SALT  
AND METHOD FOR PRODUCING NON-AQUEOUS ELECTROLYTIC SOLUTION

US10978740 ELECTROLYTE SOLUTION AND LITHIUM ION SECONDARY BATTERY PROVIDED  
WITH SAME

US8134027 SULFONYLIMIDE SALT AND METHOD FOR PRODUCING THE SAME

US9947967 FLUOROSULFONYL IMIDE SALT AND METHOD FOR PRODUCING  
FLUOROSULFONYL IMIDE SALT

US10461365 CONDUCTIVE MATERIAL AND MANUFACTURING METHOD AND PURIFICATION  
METHOD FOR SAME, AND NON AQUEOUS ELECTROLYTE SOLUTION AND  
ANTISTATIC AGENT USING SAID CONDUCTIVE MATERIAL

US11097949 BIS(FUOROSULFONYL)IMIDE METAL SALT AND METHOD FOR PREPARING SAME

CN ZL200980111233.6 SULFONYLIMIDE SALT AND METHOD FOR PRODUCING THE SAME

CN ZL201180026278.0 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION  
METHOD THEREFOR

CN ZL201480008985.0 ELECTROLYTE SOLUTION AND LITHIUM ION SECONDARY BATTERY  
PROVIDED WITH SAME

CN ZL201780032629.6 METHOD FOR PRODUCING BIS(FUOROSULFONYL)IMIDE ALKALI  
METAL SALT AND BIS(FUOROSULFONYL)IMIDE ALKALI METAL SALT  
COMPOSITION

KR1345271 FLUOROSULFONYL IMIDE SALT AND METHOD FOR PRODUCING  
FLUOROSULFONYL IMIDE SALT

KR1361701 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION METHOD  
THEREFOR

KR2141903 ELECTROLYTE SOLUTION AND LITHIUM ION SECONDARY BATTERY PROVIDED

WITH SAME

KR2209506 METHOD FOR PRODUCING BIS(FLUOROSULFONYL)IMIDE ALKALI METAL SALT AND METHOD FOR PRODUCING NON-AQUEOUS ELECTROLYTIC SOLUTION

KR2328454 METHOD FOR PRODUCING BIS(FLUOROSULFONYL)IMIDE ALKALI METAL SALT AND BIS(FLUOROSULFONYL)IMIDE ALKALI METAL SALT COMPOSITION

KR2208181 METHOD FOR PRODUCING BIS(FLUOROSULFONYL)IMIDE ALKALI METAL SALT

KR2231961 BIS(FLUOROSULFONYL)IMIDE METAL SALT AND METHOD FOR PREPARING SAME

TW406869 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION METHOD THEREFOR

JP4959859 FLUOROSULFONYL IMIDE SALT AND METHOD FOR PRODUCING FLUOROSULFONYL IMIDE SALT

JP5074636 ALKALI METAL SALT OF FLUOROSULFONYL IMIDE, AND PRODUCTION METHOD THEREFOR

JP6208929 PACKAGE OBTAINED BY PACKAGING IONIC COMPOUND CONTAINING FLUORINE ATOM OR IONIC COMPOUND-CONTAINING COMPOSITION CONTAINING FLUORINE ATOM

JP6266702 PACKAGE OBTAINED BY PACKAGING IONIC COMPOUND CONTAINING FLUORINE ATOM OR IONIC COMPOUND-CONTAINING COMPOSITION CONTAINING FLUORINE ATOM

JP6208934 LITHIUM ION SECONDARY BATTERY

JP6204647 LAMINATED ALKALI METAL BATTERY

JP6113496 LITHIUM SECONDARY BATTERY

JP6139944 METHOD FOR PRODUCING ALKALI METAL SALT OF FLUOROSULFONYL IMIDE

JP6315775 LITHIUM ION SECONDARY BATTERY

JP4660596 SULFONYLIMIDE SALT AND METHOD FOR PRODUCING THE SAME

JP5208782 SULFONYLIMIDE SALT AND METHOD FOR PRODUCING THE SAME

JP4621783 SULFONYLIMIDE SALT AND METHOD FOR PRODUCING THE SAME

JP5744779 FLUOROSULFONYL IMIDE SALT AND METHOD FOR PRODUCING FLUOROSULFONYL IMIDE SALT

JP5401336 METHOD FOR MANUFACTURING A FLUOROSULFONYLIMIDE SALT

JP6212180 NONAQUEOUS ELECTROLYTE AND LITHIUM SECONDARY BATTERY USING THE SAME

JP6093516 ELECTROLYTE AND METHOD FOR MANUFACTURING THE SAME, AND POWER STORAGE DEVICE ARRANGED BY USE THEREOF

JP6205451 ELECTROLYTE AND METHOD FOR MANUFACTURING THE SAME, AND POWER

STORAGE DEVICE ARRANGED BY USE THEREOF

- JP6038463 NONAQUEOUS ELECTROLYTE AND ELECTRICITY STORAGE DEVICE INCLUDING THE SAME
- JP5848587 LITHIUM SECONDARY BATTERY
- JP6018820 NONAQUEOUS ELECTROLYTE FOR LITHIUM SECONDARY BATTERY, AND LITHIUM SECONDARY BATTERY INCLUDING THE SAME
- JP6483943 LITHIUM SECONDARY BATTERY
- JP5893517 NONAQUEOUS ELECTROLYTE
- JP5727985 ELECTRODE FOR BATTERY AND BATTERY USING THE SAME
- JP6078629 ELECTROLYTE SOLUTION AND LITHIUM ION SECONDARY BATTERY PROVIDED WITH SAME
- JP6353564 ELECTROLYTE SOLUTION AND LITHIUM ION SECONDARY BATTERY PROVIDED WITH SAME
- JP6592228 OVERCHARGE INHIBITOR, ELECTROLYTE INCLUDING THE SAME, AND LITHIUM ION SECONDARY BATTERY
- JP6147523 METHOD FOR MANUFACTURING A FLUOROSULFONYLIMIDE SALT
- JP6368466 PRODUCTION METHOD OF PACKAGE OF FLUORO SULFONYL IMIDE
- JP6276575 NONAQUEOUS ELECTROLYTE AND LITHIUM ION SECONDARY BATTERY INCLUDING THE SAME
- JP6278758 NONAQUEOUS ELECTROLYTE AND POWER STORAGE DEVICE INCLUDING THE SAME
- JP6267038 NONAQUEOUS ELECTROLYTE AND POWER STORAGE DEVICE INCLUDING THE SAME
- JP6591184 NON-AQUEOUS ELECTROLYTIC SOLUTION AND LITHIUM ION SECONDARY BATTERY COMPRISING
- JP6603014 NON-AQUEOUS ELECTROLYTE AND LITHIUM ION SECONDARY BATTERY COMPRISING
- JP6324845 NON-AQUEOUS ELECTROLYTE AND LITHIUM ION SECONDARY BATTERY COMPRISING
- JP6577317 METHOD FOR PRODUCING FLUOROSULFONYLIMIDE COMPOUND
- JP6523314 METHOD FOR MANUFACTURING ELECTROLYTE MATERIAL
- JP6645855 MANUFACTURING METHOD OF FLUOROSULFONYLIMIDE COMPOUND
- JP6669506 NON-AQUEOUS ELECTROLYTE AND LITHIUM ION SECONDARY BATTERY COMPRISING
- JP6637237 NON-AQUEOUS ELECTROLYTE AND LITHIUM ION SECONDARY BATTERY COMPRISING
- JP6647877 NONAQUEOUS ELECTROLYTE AND NONAQUEOUS ELECTROLYTE SECONDARY BATTERY USING THE SAME

JP6666679 LITHIUM ION SECONDARY BATTERY

JP6646522 NONAQUEOUS ELECTROLYTE SECONDARY BATTERY

JP6663986 METHOD FOR PRODUCING BIS(FUOROSULFONYL)IMIDE ALKALI METAL SALT

JP6595104 METHOD FOR PRODUCING NON-AQUEOUS ELECTOROLYTE

JP6709686 MANUFACTURING METHOD OF THE BIS(FUOROSUFONYL)IMIDE ALKALI METAL SALT

JP6712117 NON-AQUEOUS ELECTROLYTIC SOLUTION AND LITHIUM ION SECONDARY BATTERY COMPRISING SAME

JP6714111 BIS(FUOROSULFONYL) IMIDE METAL SALT AND METHOD FOR PREPARING SAME

JP6715096 NON-AQUEOUS ELECTROLYTE AND NON-AQUEOUS ELECTROLYTE BATTERY USING THE SAME

JP6770295 NON-AQUEOUS ELECTROLYTE AND ELECTRICAL STORAGE DEVICE PROVIDED WITH THE SAME

JP6785148 NON-AQUEOUS ELECTROLYTE AND NON-AQUOUS ELECTROLYTE SECONDARY BATTERY USING THE SAME

JP6792394 MANUFACTURING METHOD OF THE ELECTROLYTE SOLUTION MATERIAL CONTAINING THE ALKALI METAL SALT OF THE BIS(FUOROSULFONYL)IMIDE AND ORGANIC SOLVENT

JP6806514 MANUFACTURING METHOD OF THE ELECTROLYTE SOLUTION MATERIAL CONTAINING THE ALKALI METAL SALT OF THE BIS(FUOROSULFONYL)IMIDE AND ORGANIC SOLVENT

JP6918855 ELECTROLYTIC SOLUTION MATERIAL

JP6246983 CONDUCTIVE MATERIAL AND METHOD FOR PRODUCING OR PURIFYING THE SAME, AS WELL AS NON-AQUEOUS ELECTROLYTE SOLUTION AND ANTISTATIC AGENT COMPRISING SAID CONDUCTIVE MATERIAL

JP6452786 ION CONDUCTIVE MATERIAL, PRODUCTION METHOD AND PURIFICATION METHOD THEREOF

JP6931965 LITHIUM ION SECONDARY BATTERY

JP6931966 LITHIUM ION SECONDARY BATTERY

JP6876369 LITHIUM ION SECONDARY BATTERY

JP6975525 LITHIUM ION SECONDARY BATTERY

JP6916666 METHOD FOR PRODUCING BIS(FUOROSULFONYL)IMIDE ALKALI METAL SALT AND BIS(FUOROSULFONYL)IMIDE ALKALI METAL SALT COMPOSITION

JP7042018 MANUFACTURING METHOD OF ELECTROLYTIC SOLUTION MATERIAL

JP6983548 ELECTROLYTE COMPOSITION AND CELL

JP6952777 ELECTROLYTE COMPOSITION, ELETROLYTE MEMBRANE, ELECTRODE, CELL AND METHOD FOR EVALUATING ELECTROLYTE COMPOSITION

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