Title (en)

ELECTRODE MATERIALS COMPRISING A LAYERED OXIDE THAT CONTAINS POTASSIUM AND A METAL, ELECTRODES COMPRISING SAID MATERIALS AND USE THEREOF IN ELECTROCHEMISTRY

Title (de)

ELEKTRODENMATERIAL MIT EINEM GESCHICHTETEN OXID, DAS KALIUM UND EIN METALL ENTHÄLT, ELEKTRODEN MIT DIESEN MATERIALIEN UND DEREN VERWENDUNG IN DER ELEKTROCHEMIE

Title (fr)

MATÉRIAUX D'ÉLECTRODE COMPRENANT UN OXYDE LAMELLAIRE DE POTASSIUM ET DE MÉTAL, ÉLECTRODES LES COMPRENANT ET LEUR UTILISATION EN ÉLECTROCHIMIE

Publication

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Application

EP 20812764 A 20200529

Priority

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- CA 2020050735 W 20200529

Abstract (en)

[origin: WO2020237386A1] Electrode materials comprising an electrochemically active material, in which materials said electrochemically active material comprises a layered oxide that contains potassium and a metal. The layered oxide that contains potassium and a metal may be of formula KxMO2. The invention also relates to electrodes, electrochemical cells and batteries comprising said electrode material. For example, said battery may be a lithium or lithium-ion battery, a sodium or sodium-ion battery, or a potassium or potassium-ion battery.

IPC 8 full level

H01M 4/131 (2010.01); **C01G 45/12** (2006.01); **C01G 49/00** (2006.01); **C01G 53/00** (2006.01); **H01M 4/485** (2010.01); **H01M 4/505** (2010.01); **H01M 4/525** (2010.01); **H01M 10/0525** (2010.01); **H01M 10/054** (2010.01); **H01M 10/056** (2010.01)

CPC (source: EP KR US)

C01G 45/1228 (2013.01 - EP); **C01G 49/0072** (2013.01 - EP); **C01G 53/50** (2013.01 - EP); **H01M 4/0459** (2013.01 - EP KR); **H01M 4/131** (2013.01 - EP KR); **H01M 4/134** (2013.01 - EP KR); **H01M 4/366** (2013.01 - US); **H01M 4/38** (2013.01 - KR); **H01M 4/381** (2013.01 - EP KR); **H01M 4/382** (2013.01 - EP KR); **H01M 4/386** (2013.01 - EP KR); **H01M 4/405** (2013.01 - EP KR); **H01M 4/485** (2013.01 - EP KR US); **H01M 4/505** (2013.01 - EP KR); **H01M 4/525** (2013.01 - EP KR); **H01M 4/587** (2013.01 - EP KR); **H01M 4/622** (2013.01 - EP KR); **H01M 4/623** (2013.01 - EP KR US); **H01M 4/625** (2013.01 - EP KR US); **H01M 10/052** (2013.01 - EP KR); **H01M 10/0525** (2013.01 - US); **H01M 10/054** (2013.01 - EP KR US); **H01M 10/0562** (2013.01 - EP KR); **H01M 10/0565** (2013.01 - EP KR); **H01M 10/0568** (2013.01 - EP KR); **H01M 14/00** (2013.01 - KR); C01P 2002/72 (2013.01 - EP); C01P 2002/76 (2013.01 - EP); C01P 2002/77 (2013.01 - EP); C01P 2006/40 (2013.01 - EP); H01M 10/0562 (2013.01 - US); H01M 10/0565 (2013.01 - US); H01M 10/0568 (2013.01 - US); H01M 2004/027 (2013.01 - KR); H01M 2004/028 (2013.01 - EP KR US); H01M 2300/0025 (2013.01 - EP KR US); H01M 2300/0071 (2013.01 - EP KR US); H01M 2300/0082 (2013.01 - US); Y02E 60/10 (2013.01 - KR)

Citation (search report)

- [XI] LIU CAI-LING ET AL: "Influence of Na-substitution on the structure and electrochemical properties of layered oxides K0.67Ni0.17Co0.17Mn0.66O2 cathode materials", ELECTROCHIMICA ACTA, vol. 286, 8 August 2018 (2018-08-08), AMSTERDAM, NL, pages 114 - 122, XP093054804, ISSN: 0013-4686, DOI: 10.1016/j.electacta.2018.08.028
- [XAI] LIU CAILING ET AL: "K0.67Ni0.17Co0.17Mn0.66O2: A cathode material for potassium-ion battery", ELECTROCHEMISTRY COMMUNICATIONS, ELSEVIER AMSTERDAM, NL, vol. 82, 8 August 2017 (2017-08-08), pages 150 - 154, XP085158245, ISSN: 1388-2481, DOI: 10.1016/J.ELECOM.2017.08.008
- [XAI] WANG XUANPENG ET AL: "Earth Abundant Fe/Mn-Based Layered Oxide Interconnected Nanowires for Advanced K-Ion Full Batteries", NANO LETTERS, vol. 17, no. 1, 16 December 2016 (2016-12-16), US, pages 544 - 550, XP093054810, ISSN: 1530-6984, DOI: 10.1021/acs.nanolett.6b04611
- [XAI] ZOU XIAOXI ET AL: "Recent research progress in non-aqueous potassium-ion batteries", PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol. 19, no. 39, 1 January 2017 (2017-01-01), pages 26495 - 26506, XP093054814, ISSN: 1463-9076, DOI: 10.1039/C7CP03852F
- See also references of WO 2020237386A1

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DOCDB simple family (application)

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