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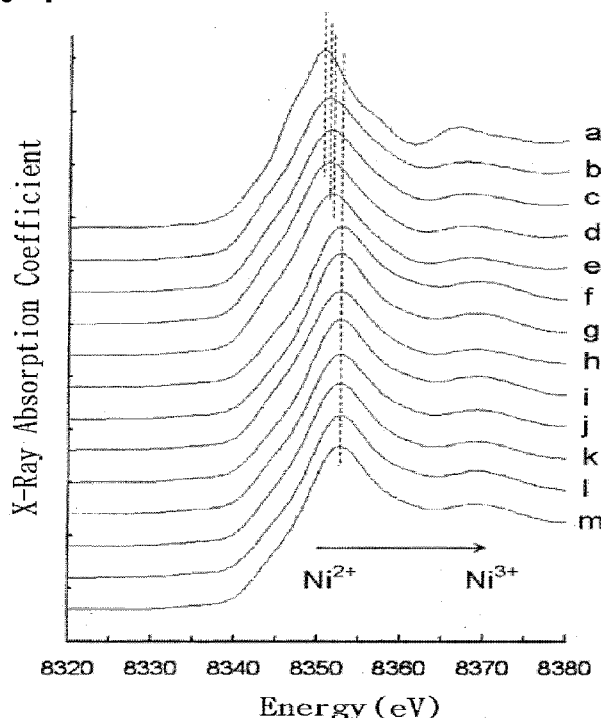
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[Continued on next page]

(54) Title: SINGLE-PHASE LITHIUM-DEFICIENT LITHIUM MULTICOMPONENT TRANSITION METAL OXIDE HAVING A LAYERED CRYSTAL STRUCTURE AND A METHOD FOR PRODUCING THE SAME

[Fig. 3]



(57) Abstract: The present invention relates to a single-phase lithium-deficient lithium multicomponent transition metal oxide having a layered crystal structure represented by the formula $\text{Li}_{1-a}\text{M1}_{1-x-y-z}\text{M2}_x\text{M3}_y\text{M4}_z\text{O}_2$, wherein M1 is one or more transition metals having an oxidation number of +3; M2 is one or more transition metals having an oxidation number of +4; M3 is one or more transition metals having an oxidation number of +5; M4 is one or more elements having an oxidation number of +2; $x+2y-z>0$; $x+y+z < 1$; $0 < a < 1$; $0 < x < 0.75$; $0 \leq y < 0.6$; and $0 \leq z < 0.3$.



LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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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)

C01G 53/00; H01M 10/40; H01M 4/131; C01G 45/00; H01M 4/58; H01M 4/485

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: single-phase lithium-deficient lithium multicomponent transition metal oxide, electrode, secondary battery

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 2001-250551 A (NISSAN MOTOR CO., LTD. et al.) 14 September 2001 See abstract; paragraph [0010-0019]; claims 1-11	1-4, 11-12 5-10, 13
A	KR 10-2010-0086413 A (HANWHA CHEMICAL CORPORATION) 30 July 2010 See abstract; paragraph [0038-0089]	1-13
A	KR 10-0628797 B1 (HITACHI MAXELL LTD.) 26 September 2006 See abstract; claims 1, 10	1-13
A	JP 2006-526255 A (UMICORE et al.) 16 November 2006 See abstract; paragraph [0006-0014]	1-13



Further documents are listed in the continuation of Box C.



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