

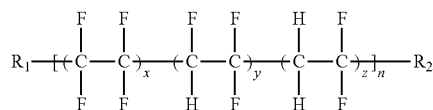


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(19) **United States**(12) **Patent Application Publication**  
**XIE**(10) **Pub. No.: US 2023/0231130 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **POSITIVE ELECTRODE SLURRY  
COMPOSITION, POSITIVE ELECTRODE  
PLATE COMPRISING SAME, SECONDARY  
BATTERY, BATTERY MODULE, BATTERY  
PACK AND POWER CONSUMING DEVICE***10/0525* (2013.01); *H01M 50/204* (2021.01);  
*H01M 2004/021* (2013.01)(71) Applicant: **CONTEMPORARY AMPEREX  
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Ningde (CN)(21) Appl. No.: **18/119,382**(22) Filed: **Mar. 9, 2023****Related U.S. Application Data**(63) Continuation of application No. PCT/CN2021/  
134474, filed on Nov. 30, 2021.**Publication Classification**(51) **Int. Cl.***H01M 4/58* (2006.01)*H01M 4/62* (2006.01)*H01M 10/0525* (2006.01)*H01M 50/204* (2006.01)(52) **U.S. Cl.**CPC ..... *H01M 4/5825* (2013.01); *H01M 4/623*  
(2013.01); *H01M 4/624* (2013.01); *H01M*(57) **ABSTRACT**A positive electrode slurry composition of the present appli-  
cation may comprise a positive electrode active material, a  
lithium-supplementing agent and a binder, whereinthe positive electrode active material may include a  
lithium-containing phosphate represented by formula  
(I),in which  $0 \leq b1 \leq 1$ ,  $0 \leq c1 \leq 0.1$ , and  $\text{M}^1$  is selected from at  
least one of transition metal elements and non-transi-  
tion metal elements in addition to Fe and Mn;the lithium-supplementing agent may be selected from  
one or more of lithium metal oxides of  $\text{Li}_{a1}\text{M}^2\text{O}_{0.5(2+a1)}$ ,  
 $\text{Li}_2\text{M}^3\text{O}_3$ ,  $\text{Li}_2\text{M}^4\text{O}_4$ ,  $\text{Li}_3\text{M}^5\text{O}_4$ ,  $\text{Li}_5\text{M}^6\text{O}_4$ , and  
 $\text{Li}_5\text{M}^7\text{O}_6$ , and

the binder may be represented by formula (II):

formula (II)

in which  $\text{R}_1$  and  $\text{R}_2$  are independently H or F, x, y, and z  
are all positive integers, and  $0.52 \leq (4x+3y+2z)/(4x+4y+4z) \leq 0.7$ .