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(54) Title: AIR AND MOISTURE STABLE HIGH-CAPACITY POSITIVE ELECTRODE MATERIALS FOR SODIUM-ION BATTERY

(57) Abstract: The present invention relates to a sodium-ion battery comprising positive electrode compositions possessing improved battery performance and moisture and air stability. The positive electrode composition having a general formula $\text{Na}_x\text{A}_z\text{Ni}_i\text{M}_y\text{Mn}_j\text{Ti}_k\text{Sb}_f\text{O}_2$ where A is alkali or alkaline-earth metals selected from Ca, Li, M is divalent or trivalent element selected from Fe, Mg, Zn, Cu, Al, Co, and Ni is divalent element, Mn, Ti is tetravalent element and Sb is pentavalent/trivalent element where $(i+j+k+f+y=1)$, $0.7 \leq x \leq 1$, $0 \leq z \leq 0.2$, $0.1 \leq i \leq 0.6$, $0 \leq y \leq 0.5$, $0.1 \leq j \leq 0.5$, $0.05 \leq k \leq 0.4$, $0 \leq f \leq 0.2$. The present invention is applicable to energy storage applications.

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