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FIG. 2A

electromechanical
responsive film having a
composition including
sodium (Na), potassium
(K), niobium (Nb) and
oxygen (O)

200

(57) Abstract: Various embodiments may provide an electro-mechanical responsive film. The electro-mechanical responsive film may include a composition including sodium (Na), potassium (K), niobium (Nb) and oxygen (O). The composition may have a formula $(\text{Na}_x\text{K}_y)\text{NbO}_{3-\delta}$, wherein $0 \leq x < 1$, wherein $0 \leq y < 1$, and wherein $0 < x+y < 1$. The composition may satisfy at least one condition selected from a group consisting of a first condition of $(x+y+4)/2 \leq (3-\delta) \leq (x+y+5)/2$ and a second condition of $0 < \delta < 1$.

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