

Supporting Information

Safe disposal of radioactive iodide by Ag₂O grafted Nb₂Na₂O₆·H₂O nanofibers

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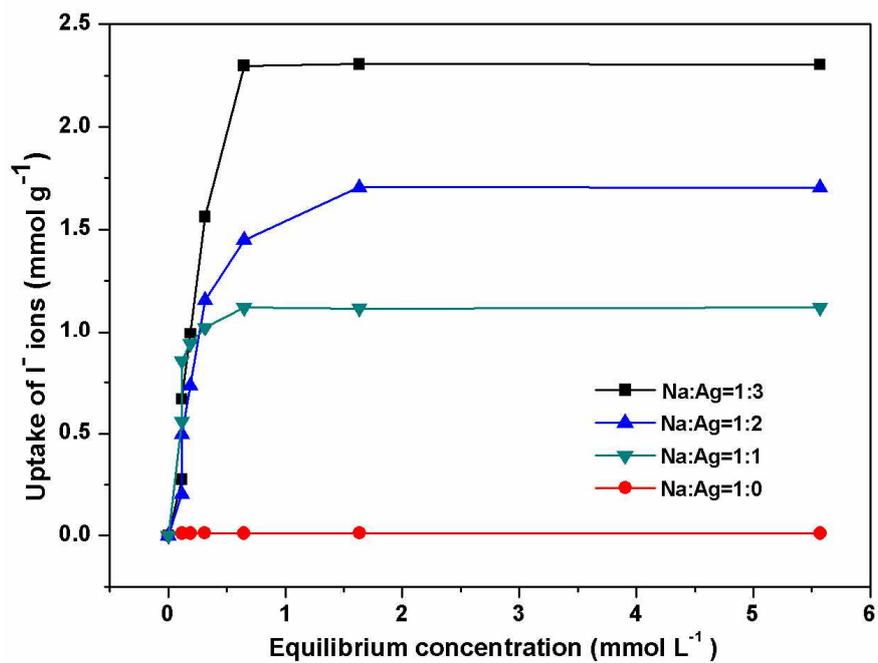


Fig.S1. Removal of I^- anions from aqueous solution by $Ag_2O-Na_2Nb_2O_6 \cdot H_2O$ with different Na:Ag ratios.

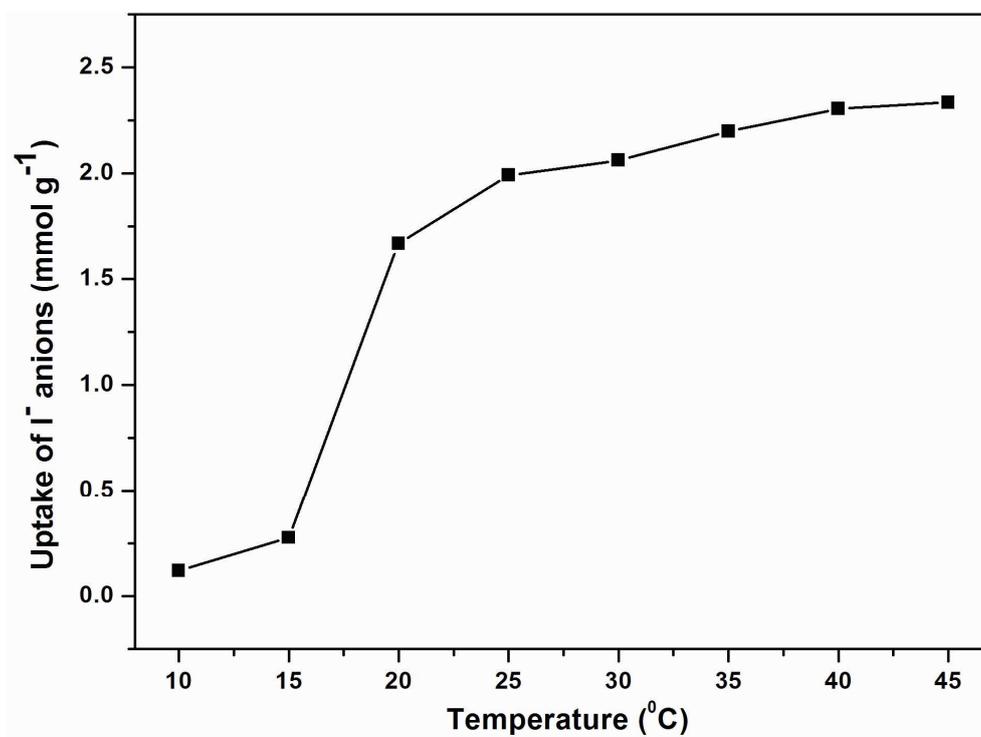


Fig.S2. The effect of temperature on I⁻ anions absorption (Ag₂O-Na₂Nb₂O₆ · H₂O)

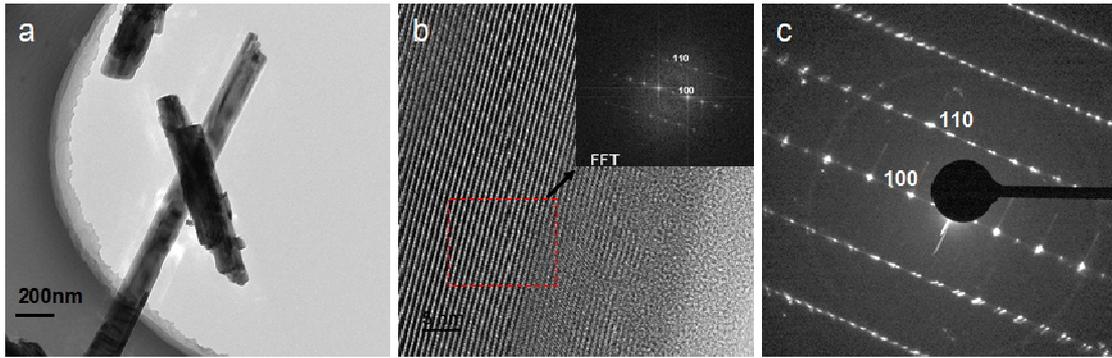


Fig.S3. The TEM images of $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers. (a) TEM at low magnification. (b) HRTEM image of a single nanoparticle, and the fast flourier transformation (FFT) shows inset. (c) SAED pattern.

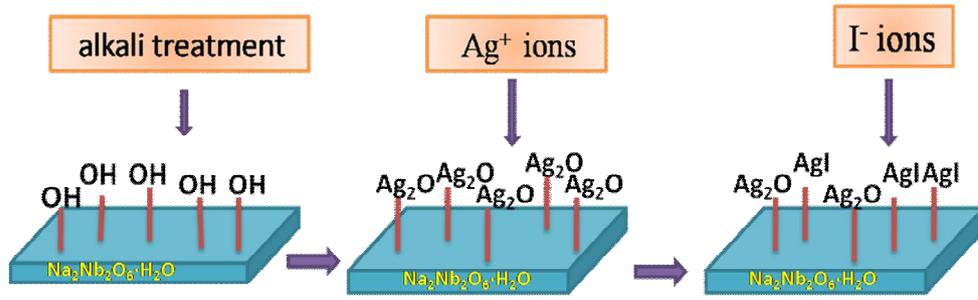


Fig.S4. Formation of Ag_2O nanoparticles on the hydroxyl group rich $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers surface and subsequent removal of I^- ions

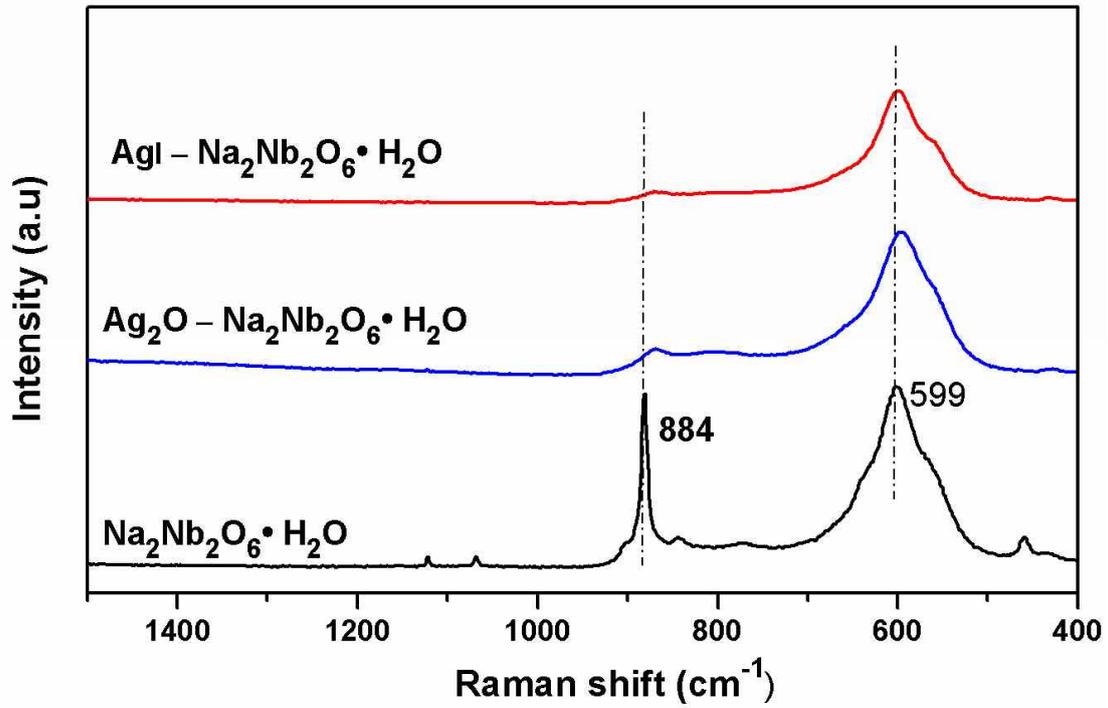


Fig.S5. Raman spectra of Na₂Nb₂O₆·H₂O nanofibers, Ag₂O nanocrystals anchored Na₂Nb₂O₆·H₂O nanofibers and AgI nanocrystals coated Na₂Nb₂O₆·H₂O nanofibers.

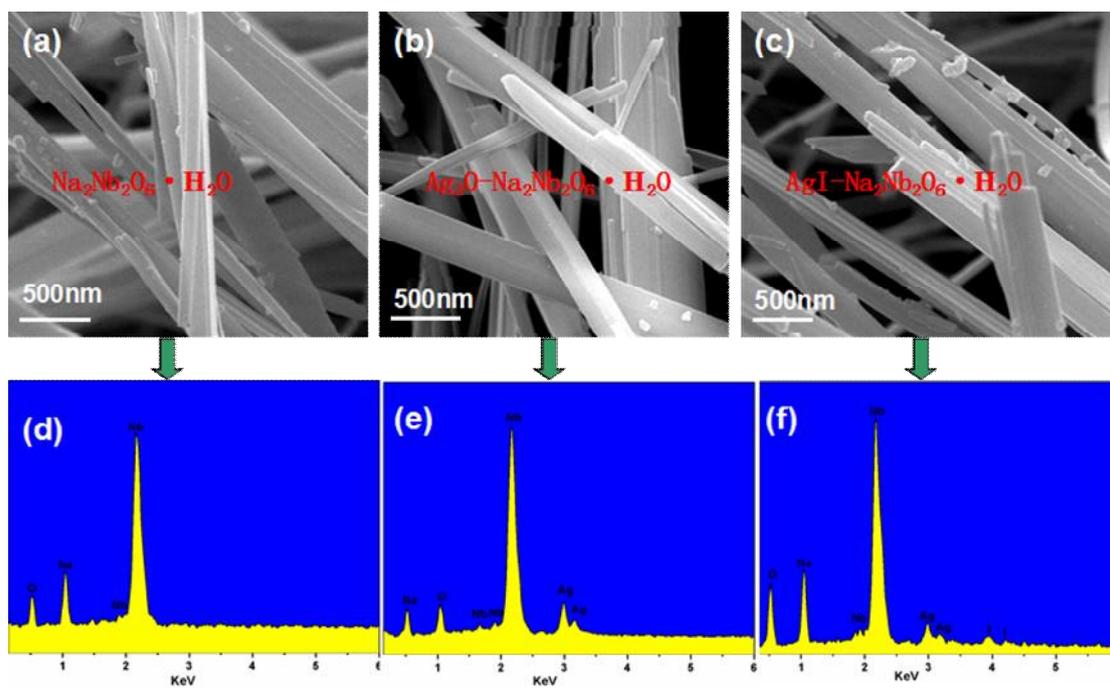


Fig.S6. SEM images and EDS spectra of the $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers, Ag_2O nanocrystals anchored $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers and AgI nanocrystals coated $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers.

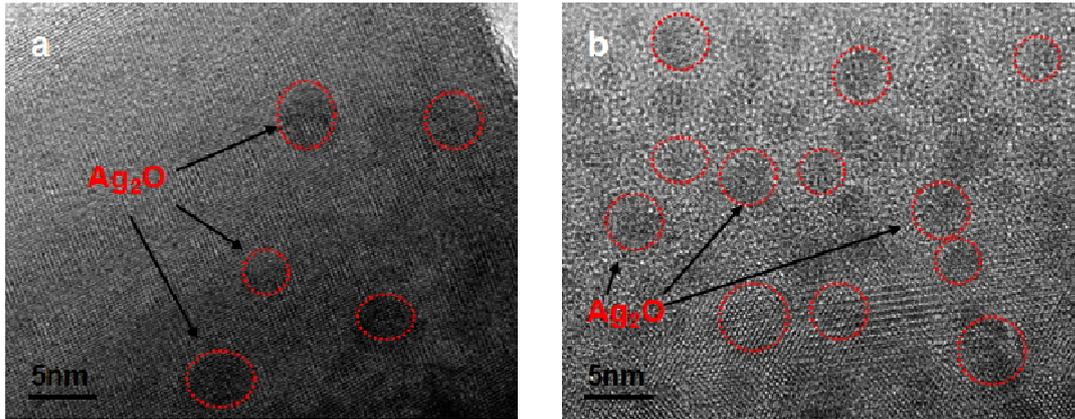


Fig. S7. TEM images of Ag_2O nanocrystals anchored on the surface of $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers. (a) $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers with small amount of Ag_2O nanocrystals. (b) $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers with large amount of Ag_2O nanocrystals.

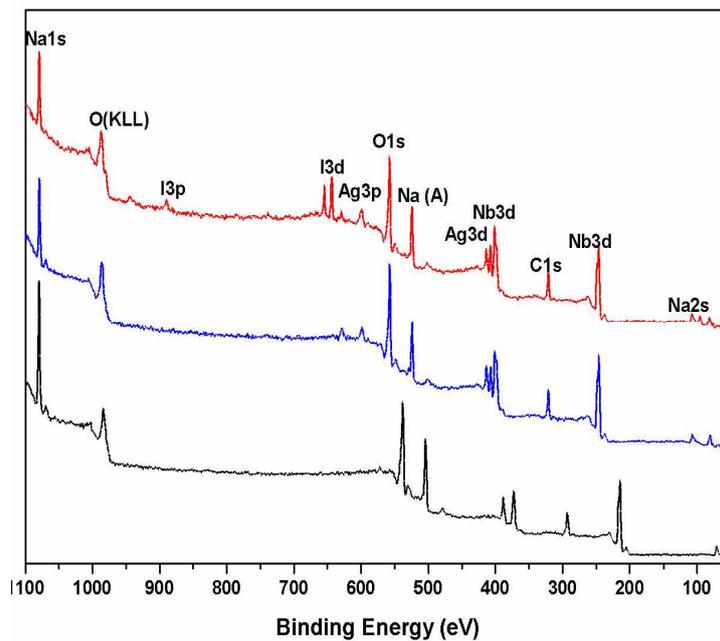


Fig.S8. XPS spectra of $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers, Ag_2O nanocrystals anchored $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers and AgI nanocrystals coated $\text{Na}_2\text{Nb}_2\text{O}_6 \cdot \text{H}_2\text{O}$ nanofibers.

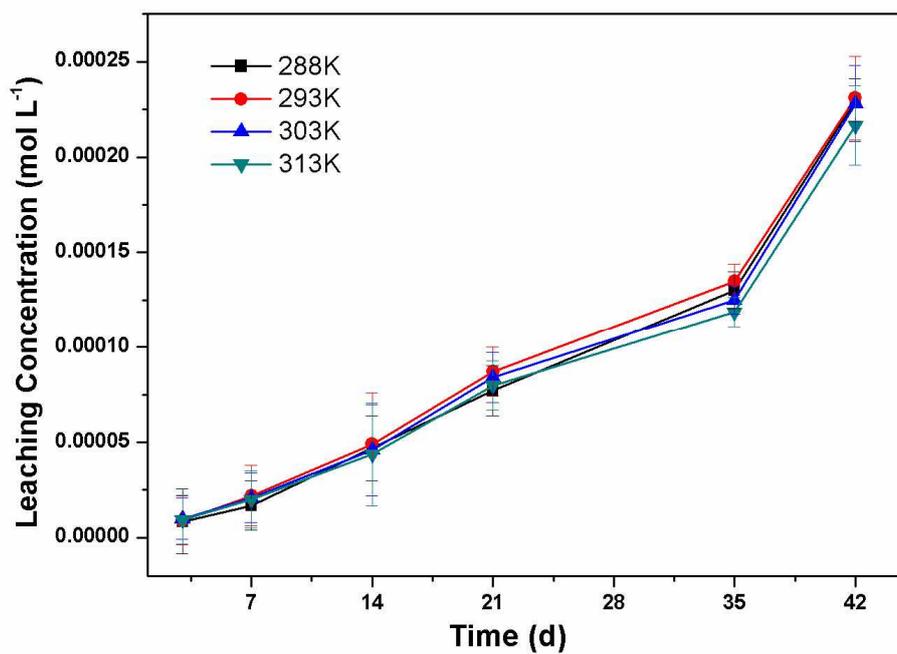


Fig.S9. The leaching concentration of Γ^- anions as a function of temperature