Supporting Information for

Capture of Radioactive Cations from Water Using Niobate Nanomaterials with Layered and Tunnel Structures

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Table S1. Phase compositions and crystallographic parameters for nanofibers in this study

Formula	KNb_3O_8	$Na_2Nb_2O_6 \cdot H_2O$
Crystal system	orthorhombic	monoclinic
Space-group	Amam	C2/c
Cell parameters	a=8.903(3) Å b=21.16(2) Å c=3.799(2) Å	a=17.0511 Å b=5.0293 Å c=16.4921 Å β=113.9420°
Cell ratio	a/b=0.4207 b/c=5.5699 c/a=0.4267	a/b=3.3904 b/c=0.3050 c/a=0.9672
Cell volume	715.68(81) $Å^3$	1292.59 $Å^3$
Z	4	8

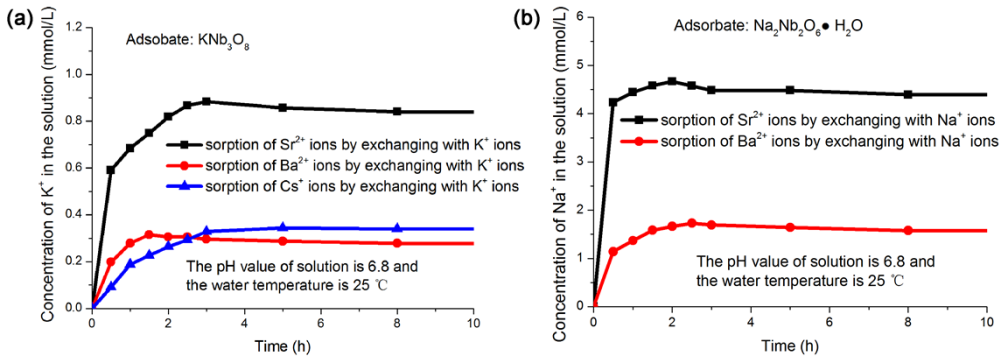

Fig. S1. The plot of the K^+ (Na^+) concentration with ion-exchange time when the initial concentration of M cations is 5 mmol/L and the amount of adsorbent = 1 g/L (M=Sr^{2+}, Ba^{2+} or Cs^+).

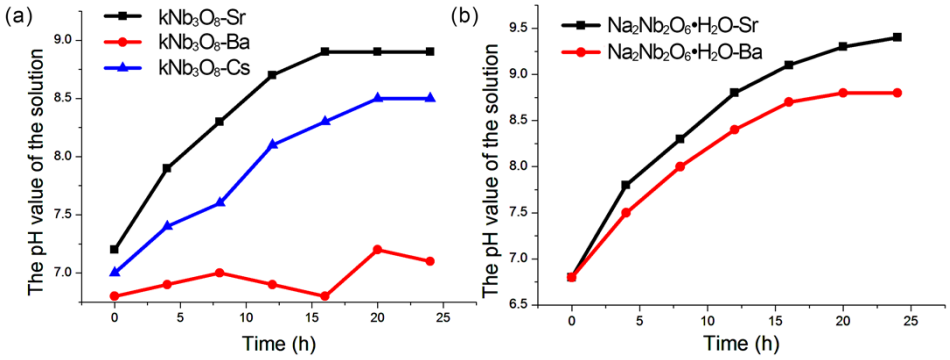

Fig. S2. The pH value of the solution with desorption time when 100 mg of (a) KNb_3O_8-M or (b) $Na_2Nb_2O_6 \bullet H_2O$-M were redispersed into 100 mL deionized water for 24 h (M=Sr^{2+}, Ba^{2+} or Cs^+).

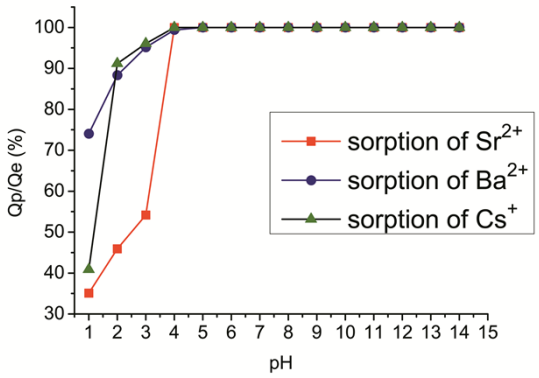

Fig. S3. Influence of the pH value of the solutions on equilibrium capacity for Sr^{2+}, Ba^{2+} and Cs^+ sorptions. Q_e is the equilibrium capacity in normal environment and Q_p is the equilibrium capacity in solutions with various pH values. The adsorbent is KNb_3O_8 nanorods.

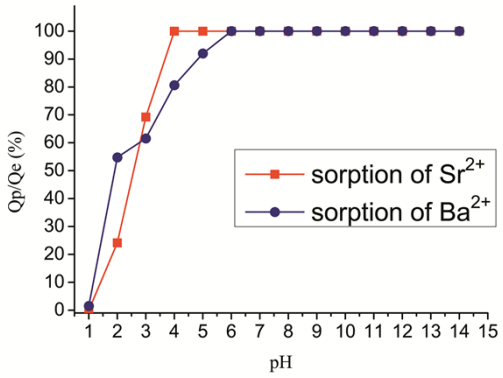

Fig. S4. Influence of the pH value of the solutions on equilibrium capacity for Sr^{2+} and Ba^{2+} sorptions. The adsorbent is $Na_2Nb_2O_6 \cdot H_2O$ nanofibers.