Electronic Supplementary Material (ESI) for RSC Advances

Supporting Information

Controlled biosilification using self-assembled short peptides A_6K and V_6K

Qinrong Wang, Jun Yu, Xin Zhang,* Daojun Liu, Jinhong Zheng, Ying Pan and Yuejuan Lin

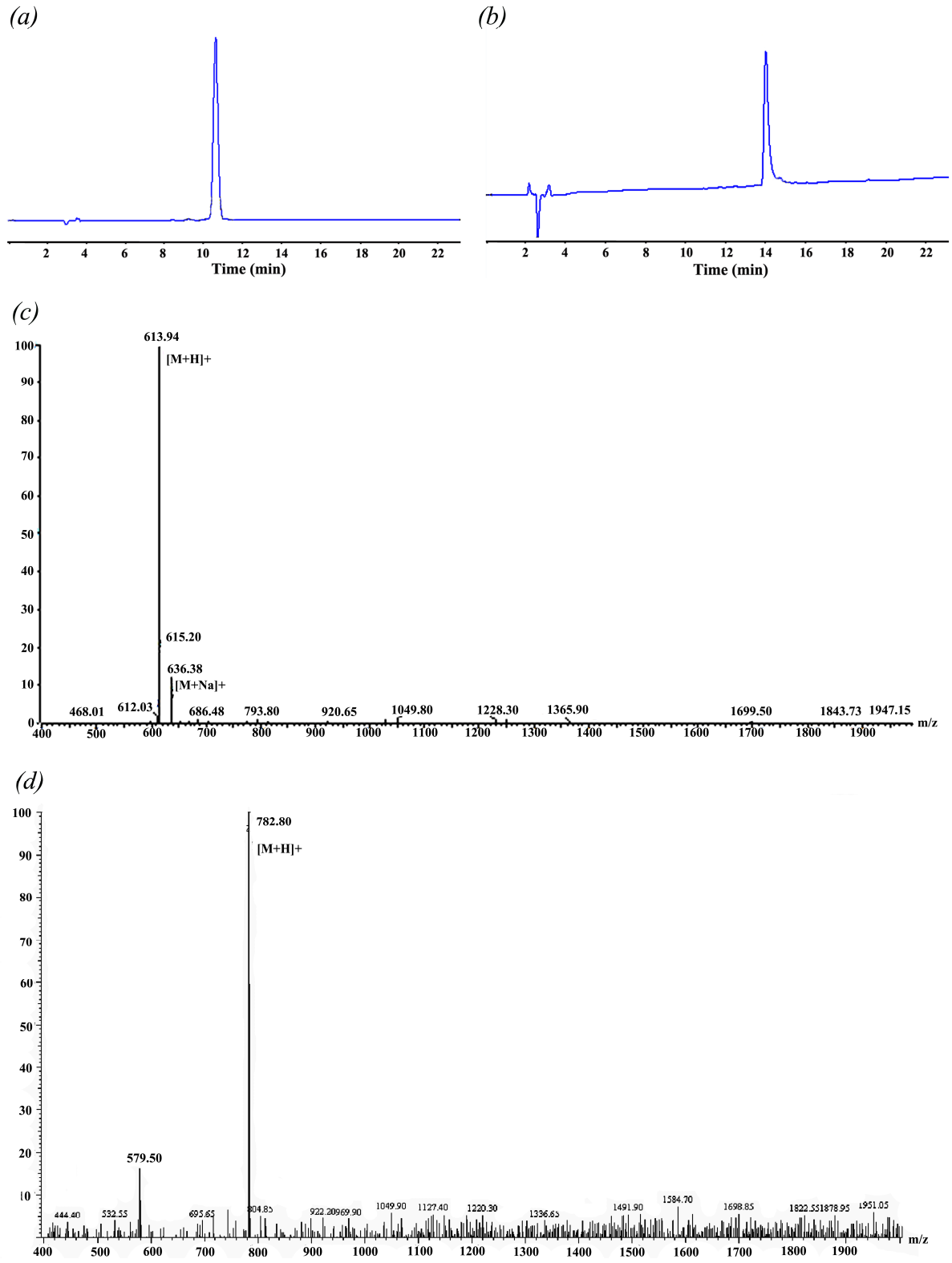

Fig. S1 HPLC spectra of (a) A_6K and (b) V_6K. ESI-MS spectra of (c) A_6K and (d) V_6K. The conditions for HPLC analysis of the two peptides are as follows: eluent A, 0.1% trifluoroacetic acid in acetonitrile, eluent B, 0.1% trifluoroacetic acid in water, 0→2 min, 95% (A%), 3→22 min, 95→40% (A%); UV detector, 214 nm; flow rate, 1.0 mL/min; column, VYDAC-C18, 4.6 mm × 250 mm.

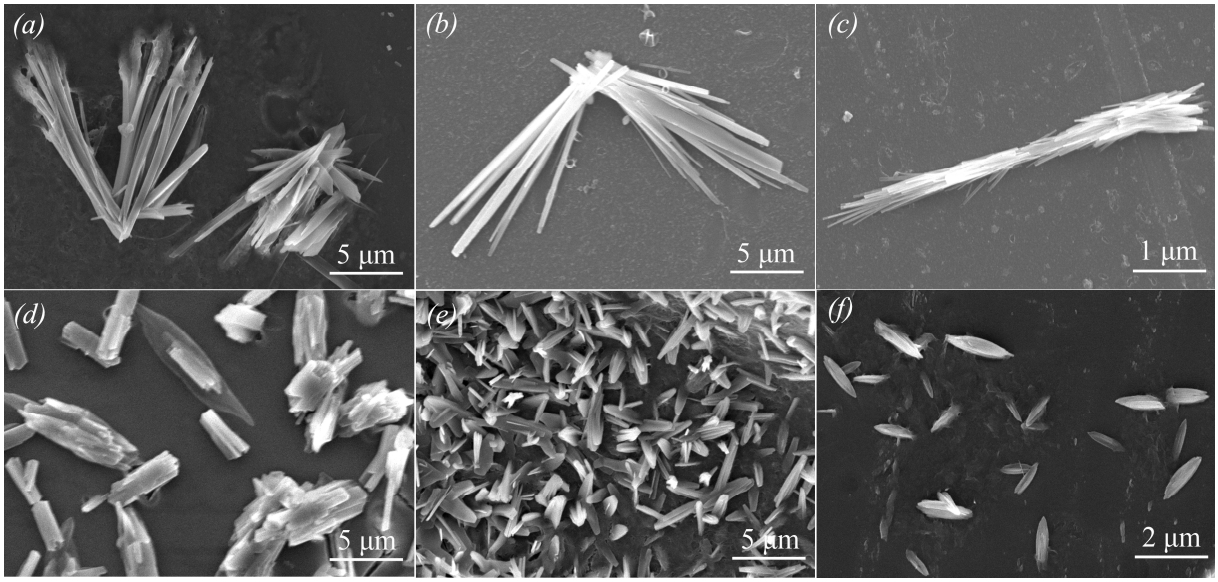

Fig. S2 SEM images of biosilica produced by A_6K using different TEOS concentration of (a) 100 mM, (b) 20 mM, and (c) 5 mM. SEM images of biosilica produced by V_6K using different TEOS concentration of (a) 100 mM, (b) 20 mM, and (c) 5 mM. The additive anion is phosphate.

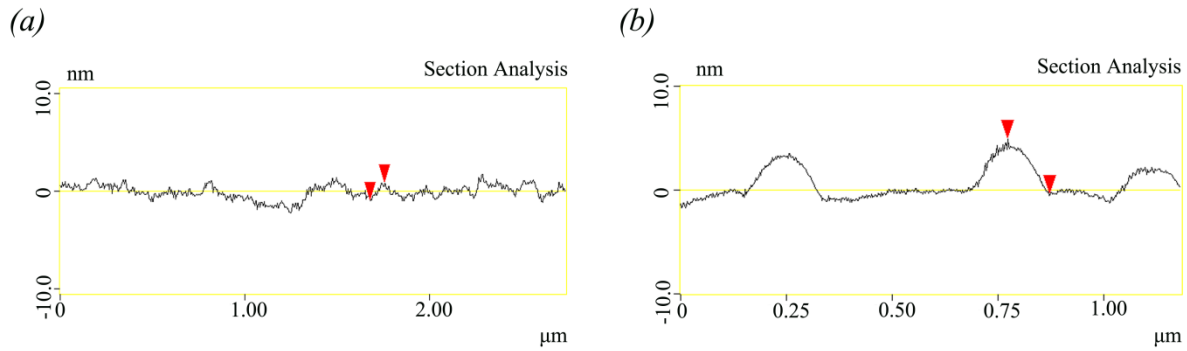

Fig. S3 Typical height sections of (a) A_6K nanofibers and (b) V_6K nanostacks, respectively.

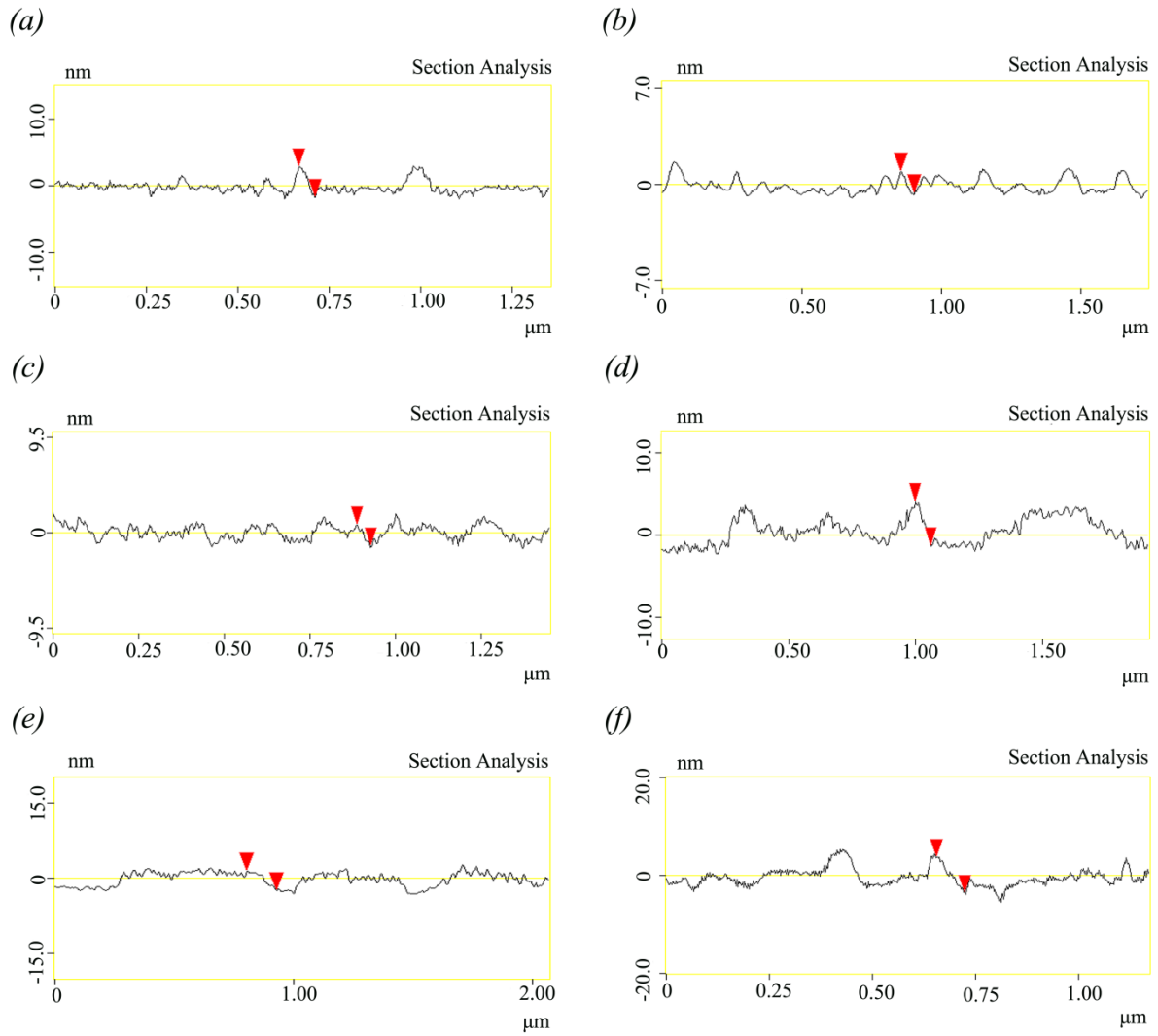

Fig. S4 Typical height sections of A_6K in the presence of (a) sodium carbonate, (b) sodium sulfate, and (c) sodium phosphate. Typical height sections of V_6K in the presence of (d) sodium carbonate, (e) sodium sulfate, and (f) sodium phosphate.

Table 1. Shifts in the negative CD peak from A_6K/V_6K solutions with different counterions with reference to the A_6K/V_6K peak without any added counterions

	A_6K/carbonate	**A_6K/sulfate**	**A_6K/phosphate**	**V_6K/carbonate**	**V_6K/sulfate**	**V_6K/phosphate**
peak shift (nm)	-7	-8	-10	1	1	2

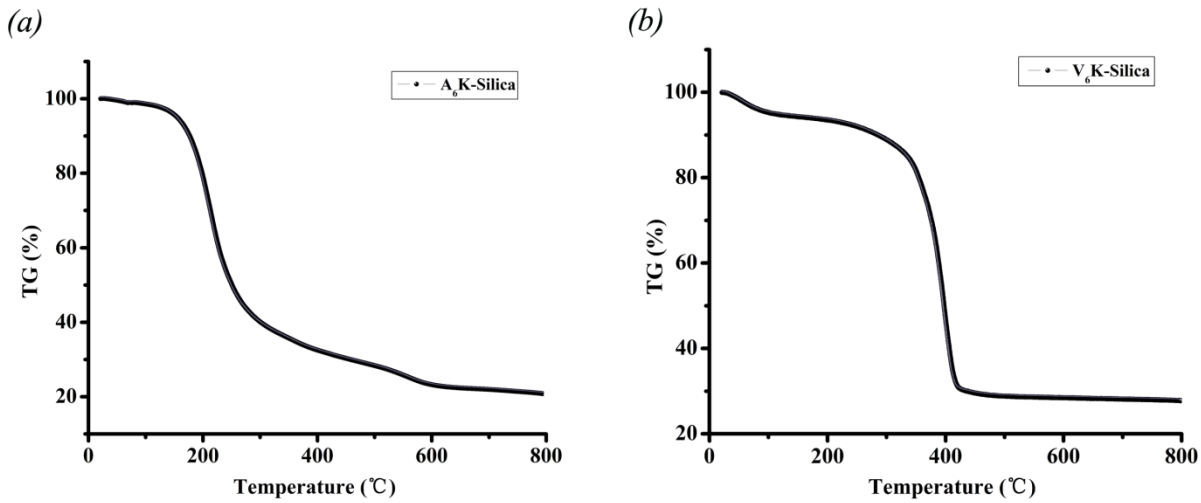

Fig. S5 Thermogravimetric analysis (TGA) spectrum of (a) A_6K-silica and (b) V_6K-silica composites, respectively.