

Supplementary information

One-step packing of anti-voltage photonic crystals into microfluidic channels for ultra-fast separation of amino acids and peptides

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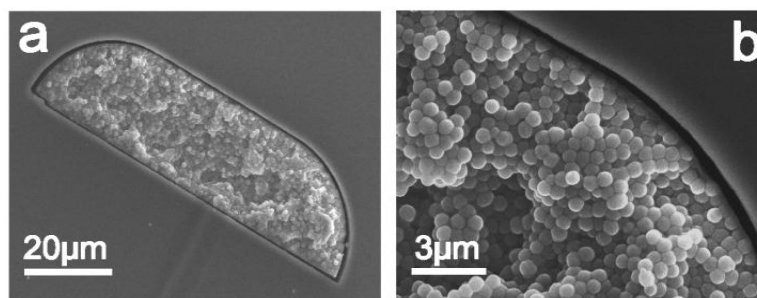


Fig. S1 Low (a) and high (b) resolution SEM image of the cross section of a PC column assembled from bare silica particles with a diameter of 0.5 μm after cutting the glass chip and drying the PC by natural vaporization.

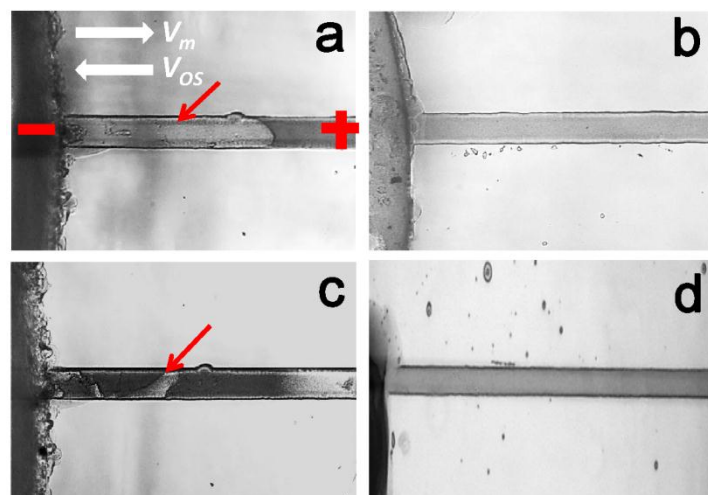


Fig. S2 The stability of three PC-packed columns against an electric field with negative polar connected to the left reservoirs. (a) the unfixed PC column at 100 V/cm, (b) the fixed end of the one-end-fixed PC column at 1000V/cm, (c) the unfixed end of the one-end-fixed PC column at 100V/cm and (d) the wholly fixed PC column at 2000V/cm. The red arrows indicate the cracks of PCs due to electric migration (v_m) and electroosmotic (v_{os}) pumping effect.

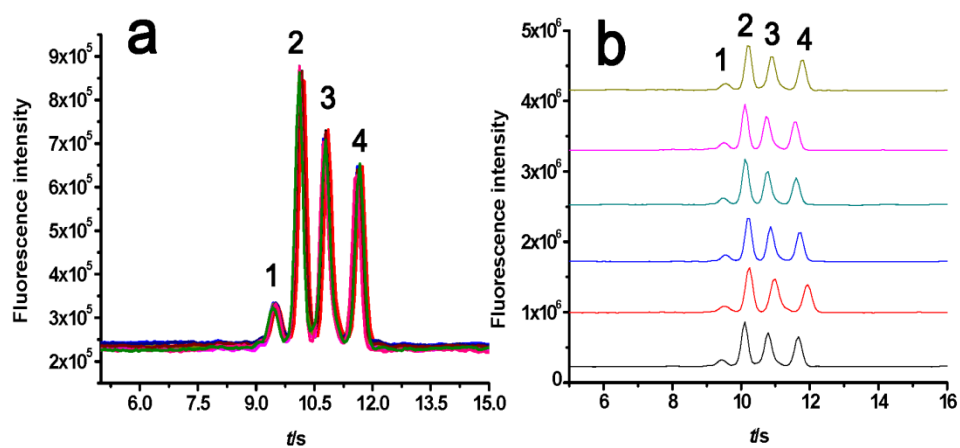


Fig. S3 Reproducibility of packed PCs checked by separation of FITC and three FITC-labeled peptides using a running buffer of 20mM $\text{Na}_2\text{B}_4\text{O}_7$ at pH 10.02. (a) Ten consecutive injections, and (b) measured from six individual packed PCs. Peak identity: 1= FITC, 2= G_6 , 3= G_5 , 4= G_4 .