

Electronic Supplementary Information for

**Boronic Acid-Functionalized Spherical Polymer Brushes for Efficient  
and Selective Enrichment of Glycoproteins**

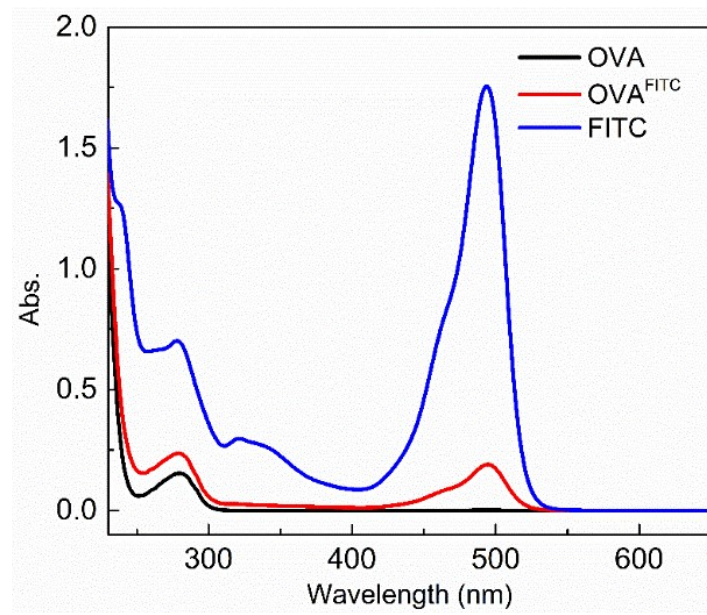
Chen Hua <sup>a</sup>, Kaimin Chen <sup>\*b</sup> and Xuhong Guo <sup>\*a,c</sup>

<sup>a</sup> State Key Laboratory of Chemical Engineering, East China University of Science and Technology, Shanghai 200237,  
People's Republic of China

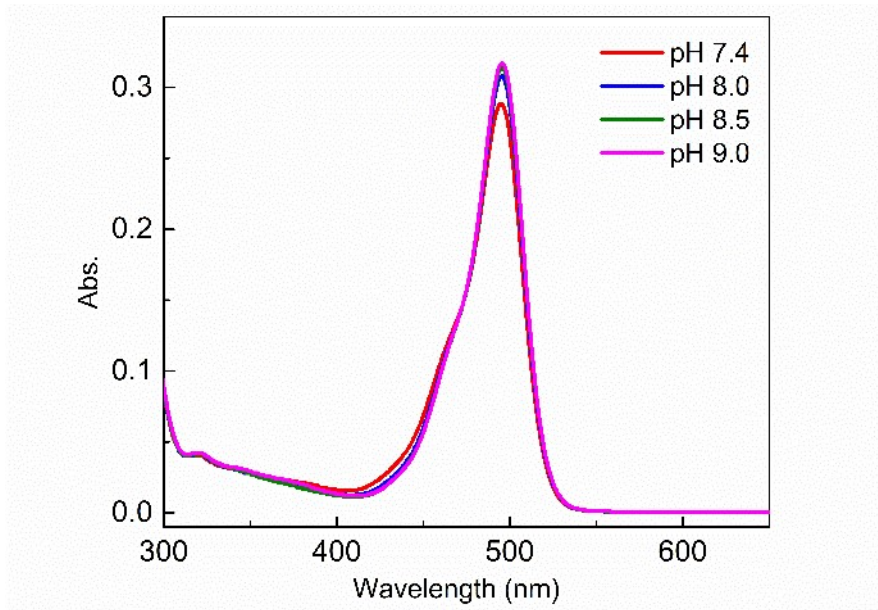
<sup>b</sup> College of Chemistry and Chemical Engineering, Shanghai University of Engineering Science, Shanghai 201620,  
People's Republic of China

<sup>c</sup> Engineering Research Center of Materials Chemical Engineering of Xinjiang Bingtuan, Shihezi University, Xinjiang  
832000, People's Republic of China

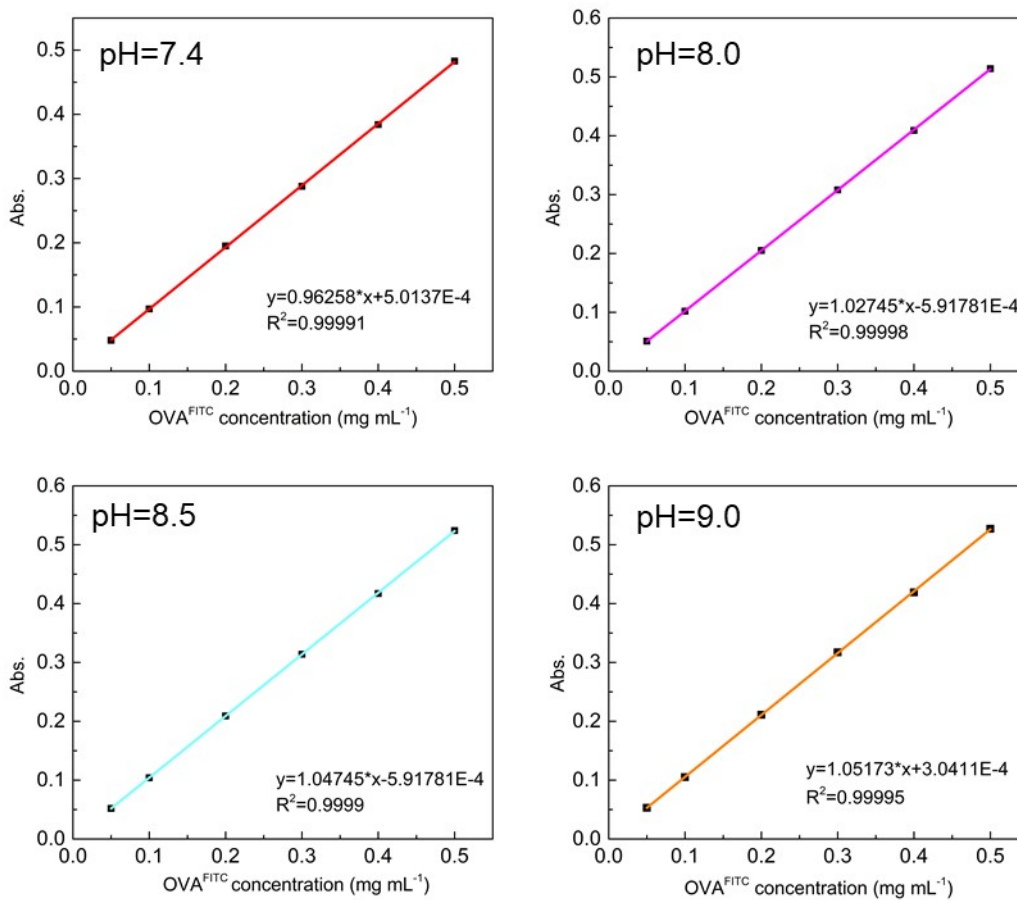
\* corresponding author e-mail: kmchen@sues.edu.cn (K. Chen); guoxuhong@ecust.edu.cn (X. Guo)



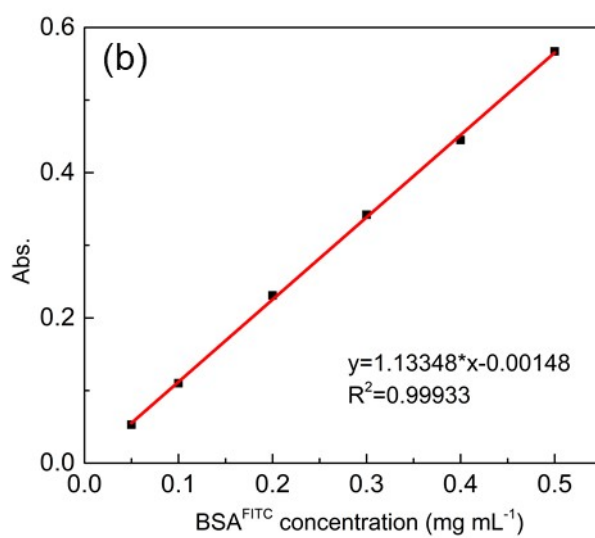
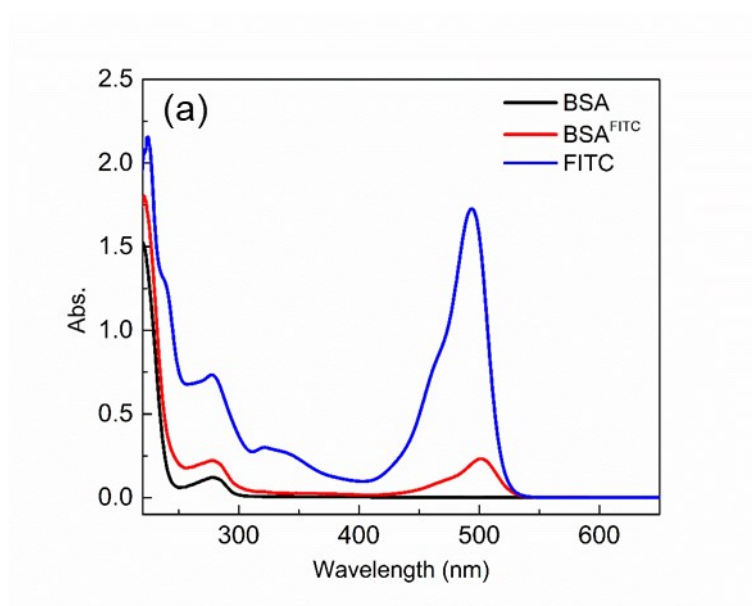
**Fig. S1** UV-vis spectra of OVA, FITC and OVA<sup>FITC</sup>.



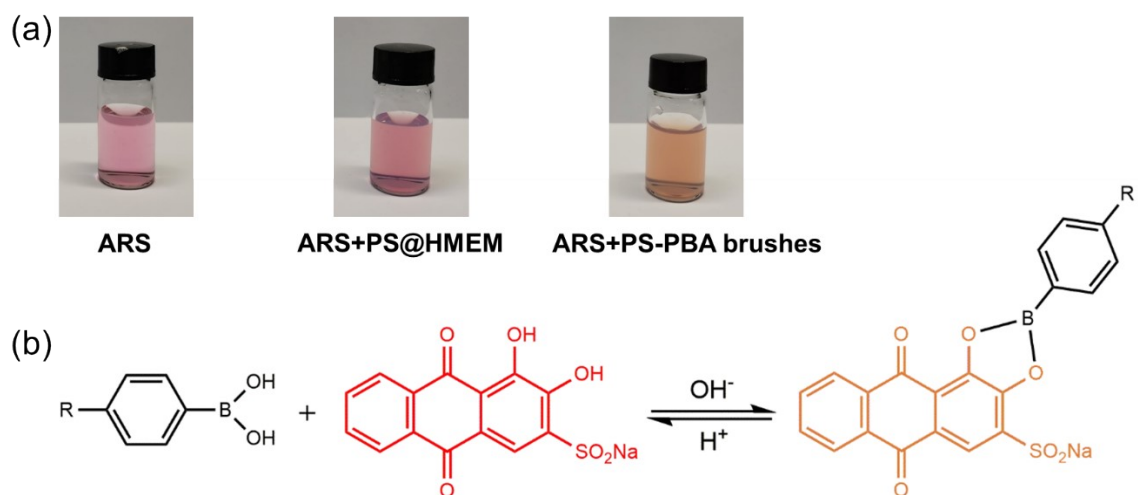
**Fig. S2** The effect of pH values on the UV-vis absorbance of OVA<sup>FITC</sup>.



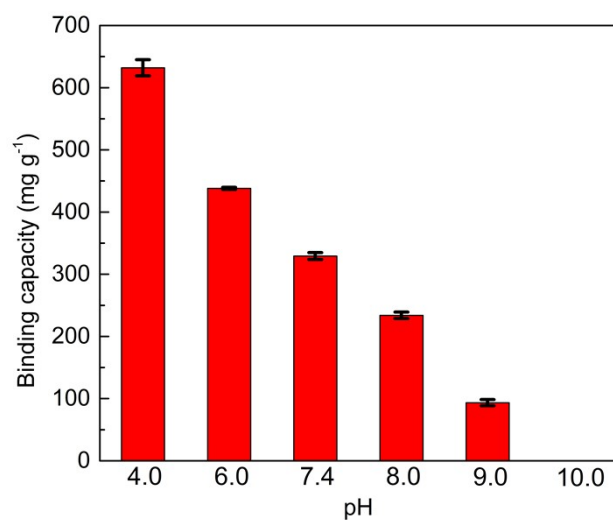
**Fig. S3** Standard curves of OVA<sup>FITC</sup> at different pH values.



**Fig. S4** UV-vis spectra of BSA, FITC and BSA<sup>FITC</sup> (a); Standard curve of BSA<sup>FITC</sup> at pH 7.4.

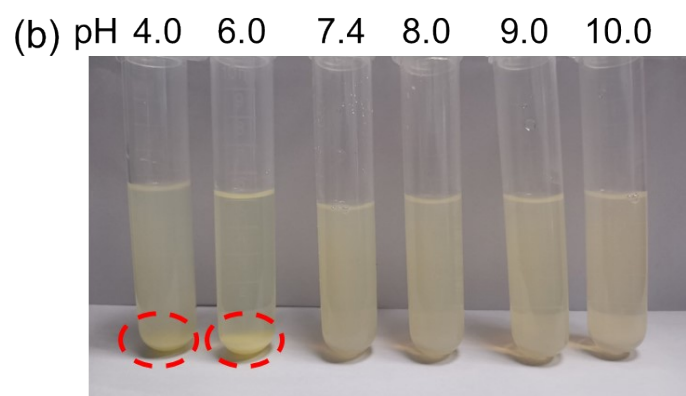
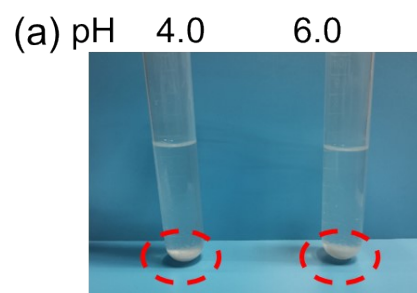


**Fig. S5** (a) Optical photographs of the color reaction of boronic acid with ARS; (b) reaction equation of phenylboronic acid and ARS. Experimental condition: 0.05 mM ARS, 0.05 mg/mL PS@HMEM and PS-PBA brushes, pH 7.4, 20 mM PBS.



**Fig. S6** Influence of pH value on the binding capacity of PS-PBA brushes for OVA in 50 mM MOPS buffer. PS-PBA brushes and OVA concentrations were 0.4 mg mL<sup>-1</sup> and 0.3 mg mL<sup>-1</sup>, respectively.

The results showed that the binding capacity was 631.9 mg g<sup>-1</sup> at pH 4.0 and 438.1 mg g<sup>-1</sup> at pH 6.0, respectively. The high binding capacities were ascribed to the lower electrostatic repulsion at pH 4.0 and pH 6.0 and the non-specific hydrophobic interaction between PS-PBA brushes and OVA.



**Fig. S7** (a) Photographs of PS-PBA brushes after shaking for 5 h at ionic strength of 50 mM. (b) Photographs of OVA/PS-PBA brushes of different pH values after shaking for 5 h at ionic strength of 50 mM. PS-PBA brushes and OVA concentrations were 0.4 mg mL<sup>-1</sup> and 0.3 mg mL<sup>-1</sup>, respectively.