

## Layer-by-Layer self-assembled thin films by chitin fiber and heparin with anti-thrombus characteristics

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### SUPPORTING INFORMATION

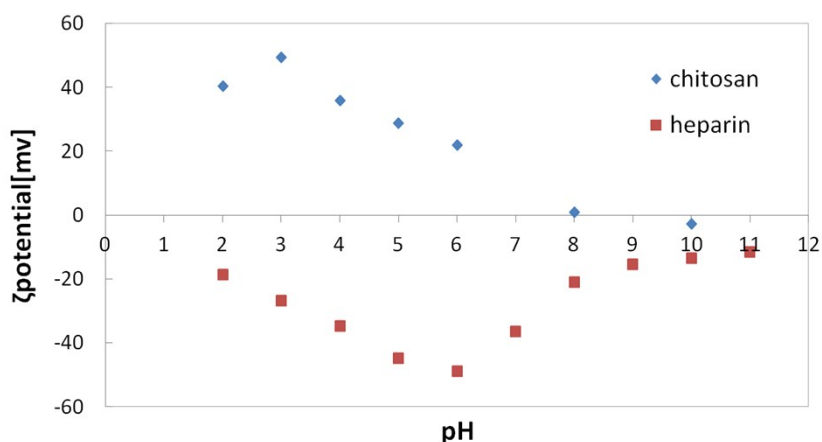


Figure of supporting information 1.  $\zeta$  potential of each polymer at different pH.

In LbL experiment, the difference of pH of two polymer solution is not suitable because the adsorbed polymer become unstable when dipping the other polymer solution which have different pH due to the difference of  $\zeta$  potential. Moreover, for suitable film growth, nearly equal  $\zeta$  potential of two polymers is suitable for LbL. This is the reason why we fabricated LbL with pH 4.0.

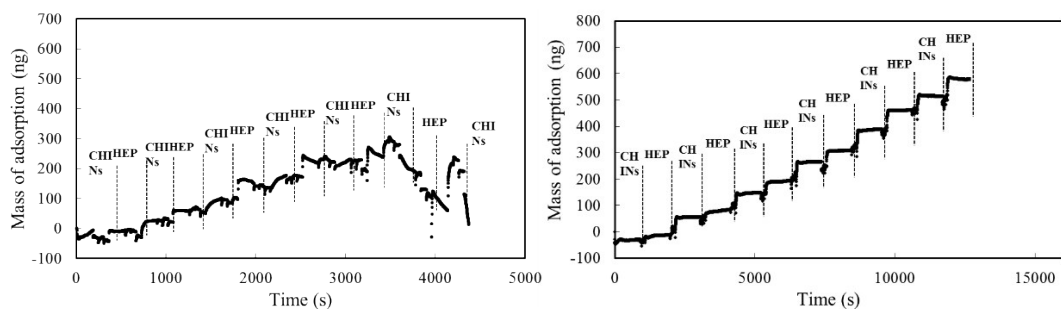


Figure of supporting information 2. QCM adsorption data of 3 min and 15 min dipping.

As shown in the above figures, we can compare the QCM datum of 3 minutes adsorption (left) with that of 15min adsorption (right). (Fig.3 in the manuscript). From these results, low adsorption time makes the adsorption behavior unstable, and makes adsorbed polymer detached on over 6 cycle, because

homogeneous adsorption do not occur on the low time adsorption and it is expected that the next layer was laminated without negating the electric charge of previously adsorbed layer completely. Therefore, it was found that for stable and homogeneous coating long time adsorption process was strongly required.