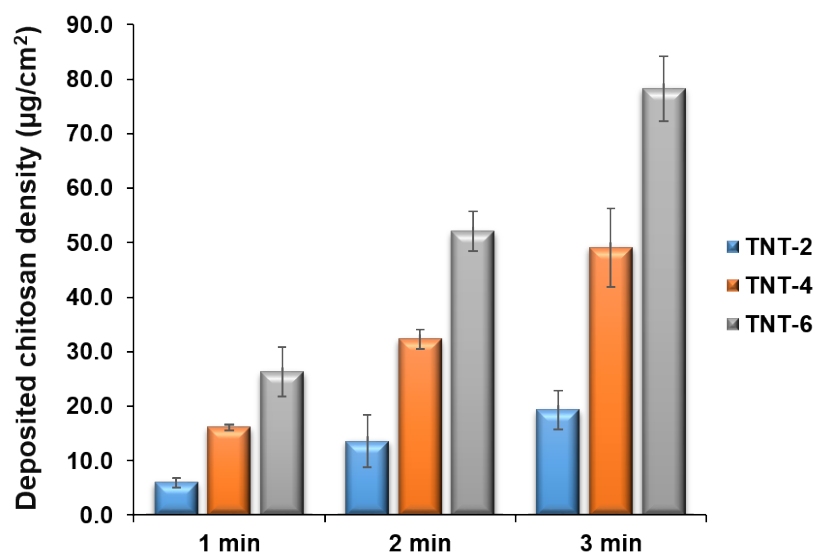
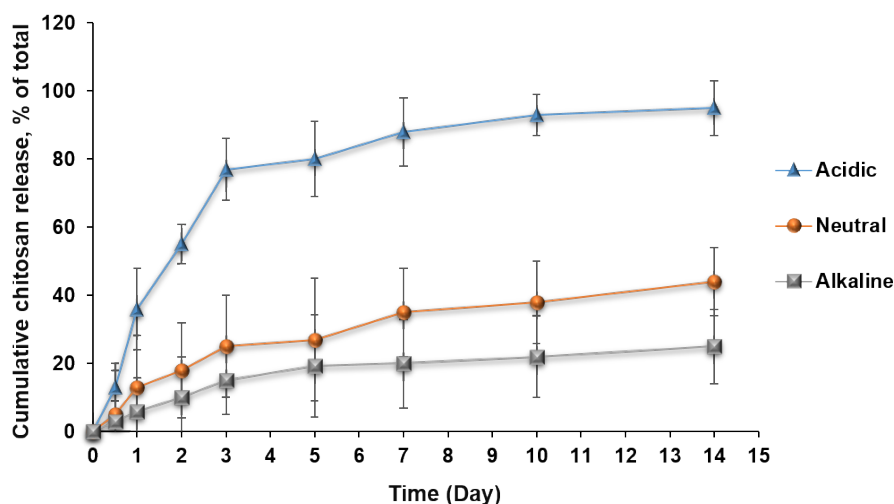


**Fig. S1.** Quantification of chitosan at different current densities and depositing durations. The fluorescein isothiocyanate (FITC) conjugated chitosan was used to fabricate the coating under different current densities and depositing durations, which were then dissolved in 0.04 M HCl to perform chitosan quantification analysis by fluorescence plate reader.



**Fig. S2.** The release profile of chitosan from CED film. The FITC conjugated chitosan was used to formulate the CS/siRNA biofunctionalization on TNT. The cumulative chitosan release profiles under different pH condition were monitored by fluorescence plate reader.



**Fig. S3.** The Cy5 labeled siRNA and FITC conjugated chitosan were used to fabricate the coating. After three days incubation in different pH condition, the cumulative released particles were observed by fluorescence microscope. The naked siRNA was indicated by white arrows.

