Supporting information

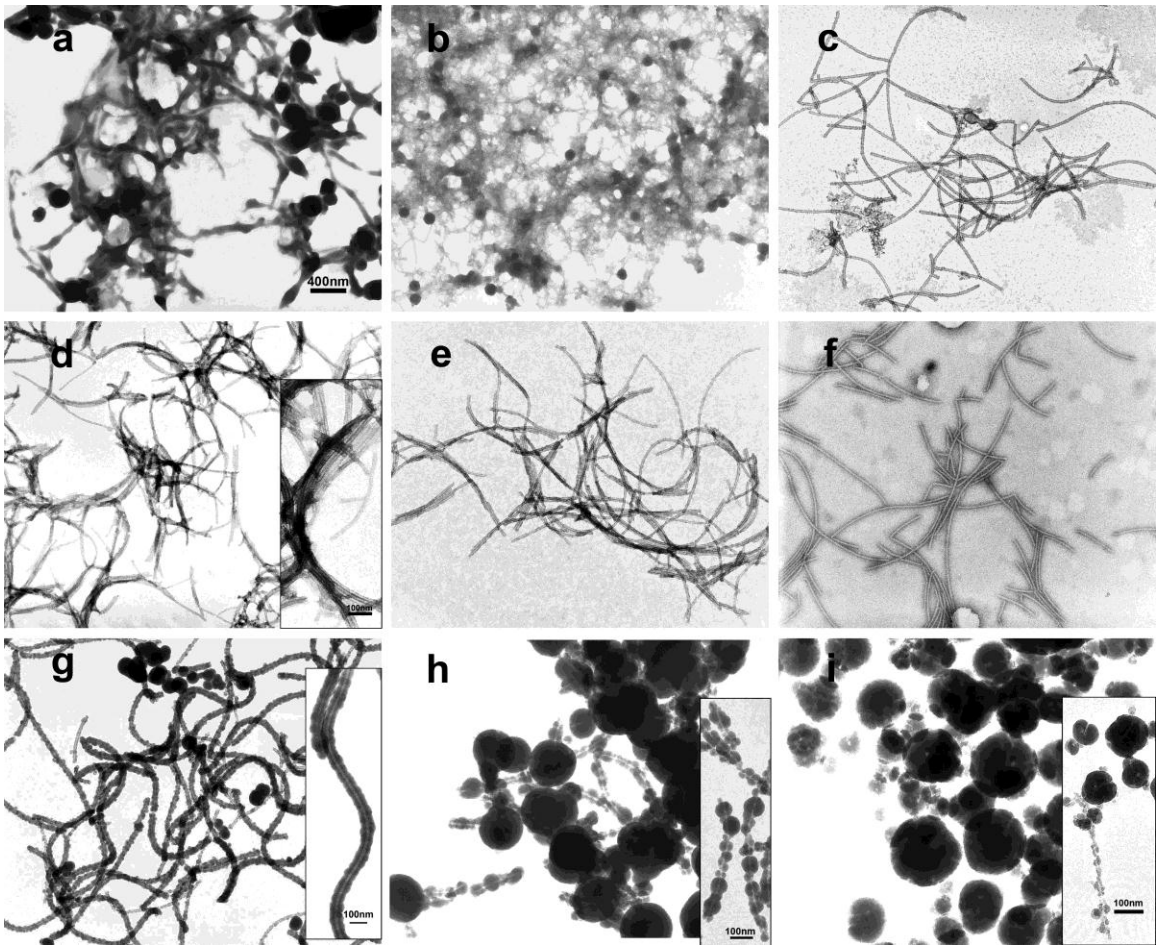


Fig. S1. More TEM images of SNTs on wild type flagella template formed at different pH values. (a) At pH=2, some linear-like structures and large spherical nanoparticles were observed. (b) At pH 2.5, non-specific aggregation with spherical nanoparticles were observed. (C) At pH=3, a very thin layer of silica nanoparticles was mineralized on flagella surface and most SNTs were separated. (d) Curly and bundled SNTs formed at pH=4. (e) At pH=5, similar structure and morphology of SNTs were observed to the SNTs at pH 3 but somem SNTs were organized into coiled bundles. (f) At pH=6 or 7, only a thin layer of amorphous mineral was nucleated on the surface of flagella. (g) At pH=8, SNTs with shorter wavelenth than that at pH=7 were formed. (h) At pH=11.5, flagella degraded into short fragments with straight morphology and coated with a layer of granular silica particles. (i) All flagella were degraded into small fragments and wrapped into spherical silica nanoparticles at pH=12. (Scale bar: 400 nm)

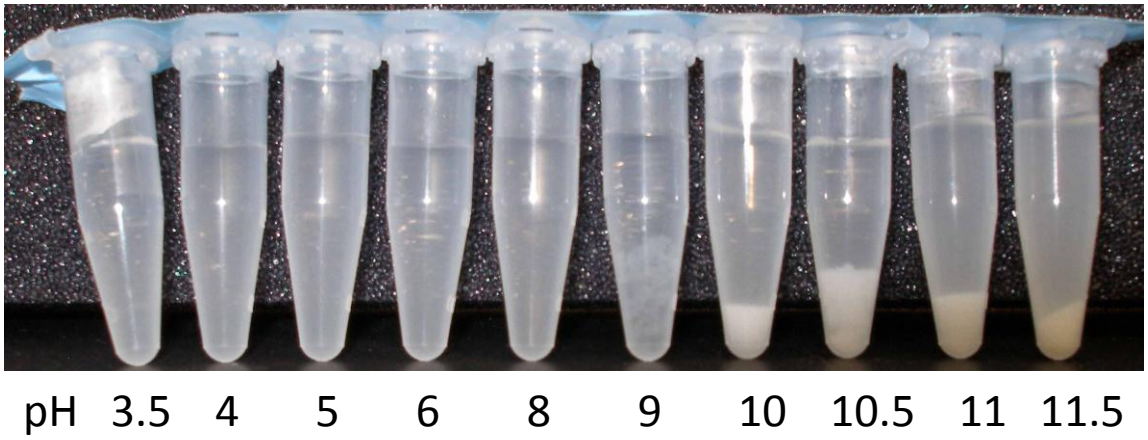
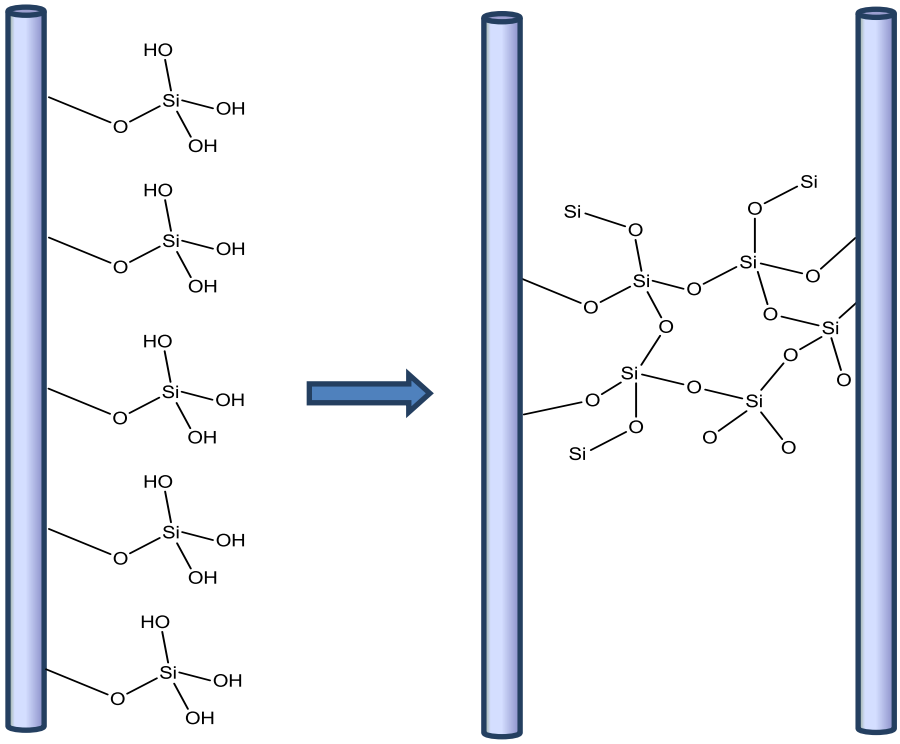


Fig. S2. White precipitates formed after the reactions at different pH values. This figure showed faborable formation of SNTs at alkaline conditions.



Scheme S1: Schematic illustration showing the formation of SNT bundles on wild-type flagella template by the direct condensation of silica between neighboring filaments.

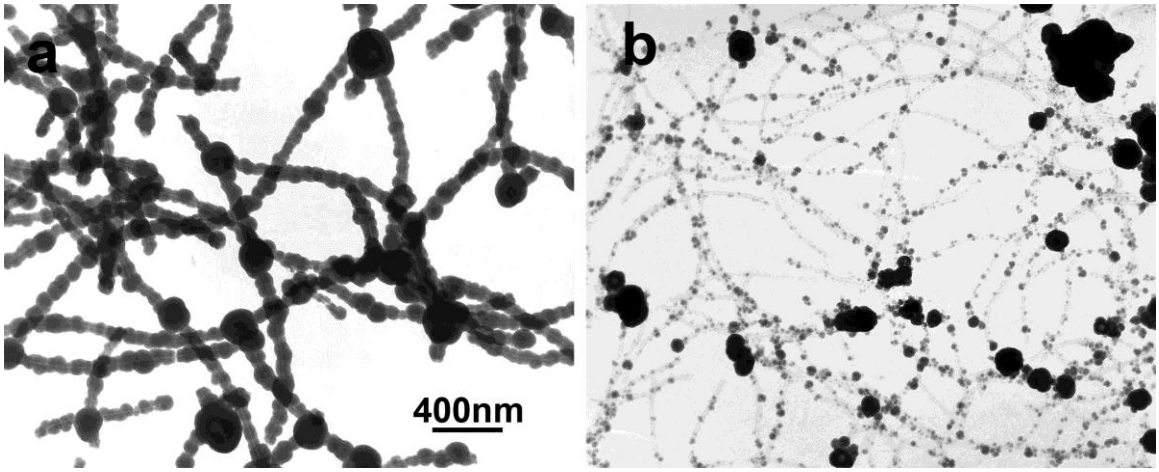


Fig. S3: TEM images of SNTs on flagella template displaying GPP8, a collagen-like peptide. (a) pH=~10.4. (b) pH=11. (Scale bar: 400 nm)

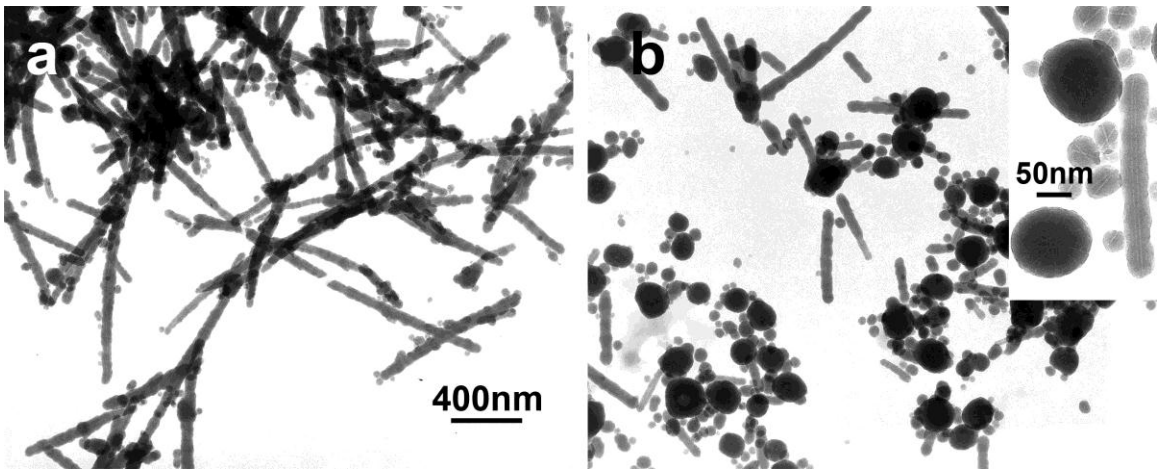


Fig. S4 TEM images of SNTs on pili template. (a) Straight and bundled SNTs on pili template. (b) Some spherical silica nanoparticles with radially organized pili fragments were formed. (Scale bar: 400 nm)