



Supporting Information

for

Biocatalytic synthesis and ordered self-assembly of silica nanoparticles via a silica-binding peptide

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Additional experimental data

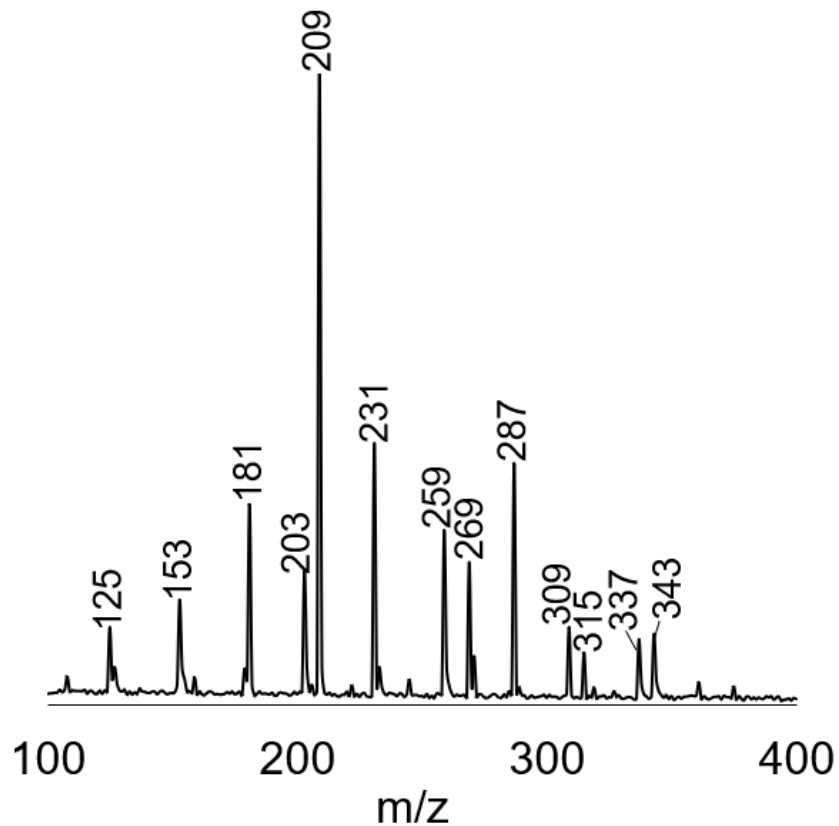


Figure S1: Mass spectra of the reaction solution of NH_3 only after 60 min.

m/z	Species
125	$[\text{Si}(\text{OEt})_3(\text{OH})_1]^+$
153	$[\text{Si}(\text{OEt})_2(\text{OH})_2]^+$
181	$[\text{Si}(\text{OC}_2\text{H}_5)_1(\text{OH})_3]^+$
203	$[\text{Si}_2\text{O}(\text{OEt})_1(\text{OH})_5]^+$
209	$[\text{Si}(\text{OEt})_4]^+$
231	$[\text{Si}_2\text{O}(\text{OEt})_2(\text{OH})_4]^+$
259	$[\text{Si}_2\text{O}(\text{OEt})_3(\text{OH})_3]^+$
287	$[\text{Si}_2\text{O}(\text{OEt})_4(\text{OH})_2]^+$
309	$[\text{Si}_3\text{O}_2(\text{OC}_2\text{H}_5)_2(\text{OH})_6]^+$
315	$[\text{Si}_2\text{O}(\text{OC}_2\text{H}_5)_5(\text{OH})_1]^+$
337	$[\text{Si}_3\text{O}_2(\text{OC}_2\text{H}_5)_3(\text{OH})_5]^+$
343	$[\text{Si}_2\text{O}(\text{OEt})_6]^+$

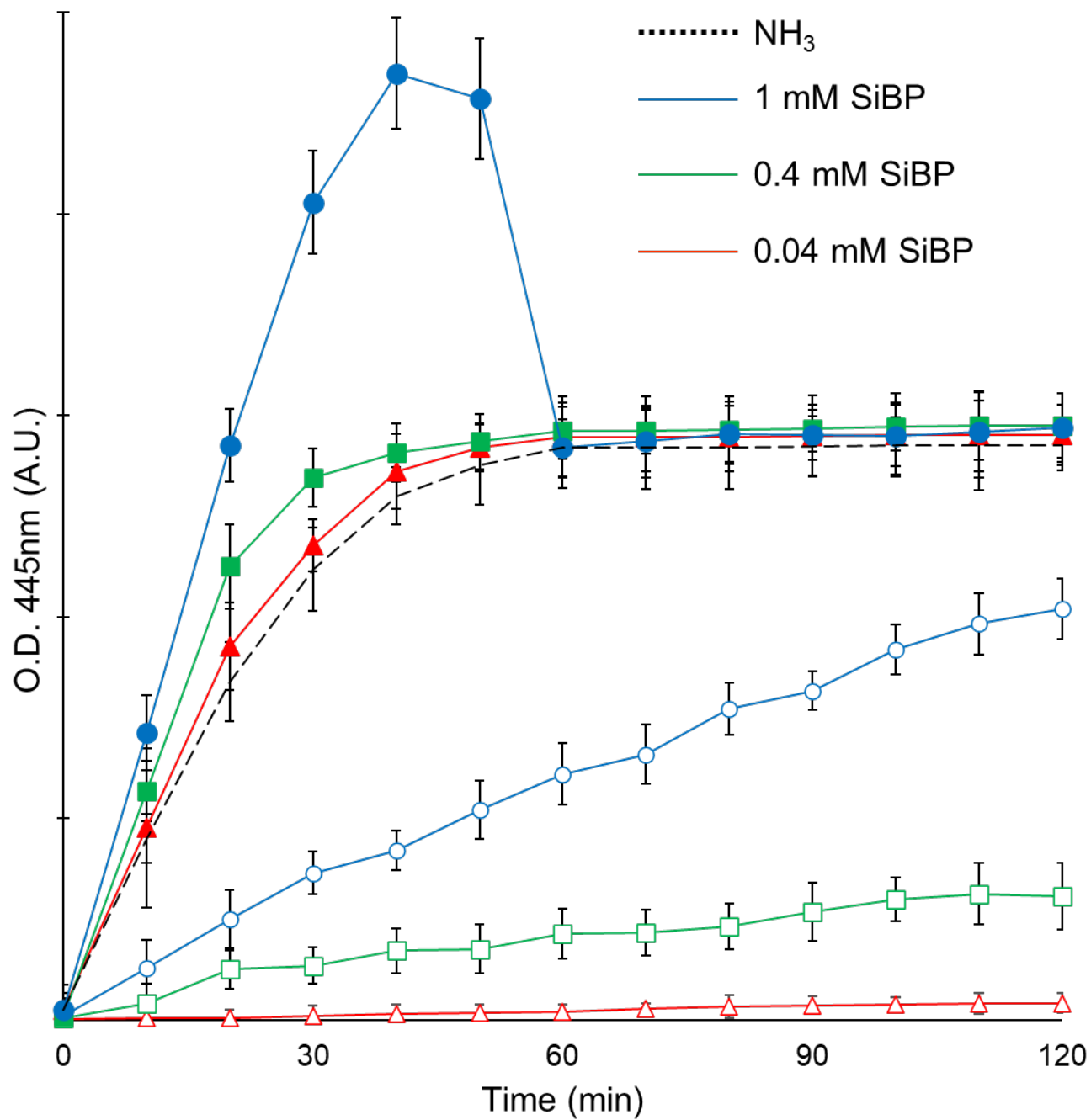


Figure S2: Mean OD value collected from three separate syntheses. (dashed line: no SiBP, empty markers: SiBP alone, solid markers: SiBP + 0.45 M NH₃).

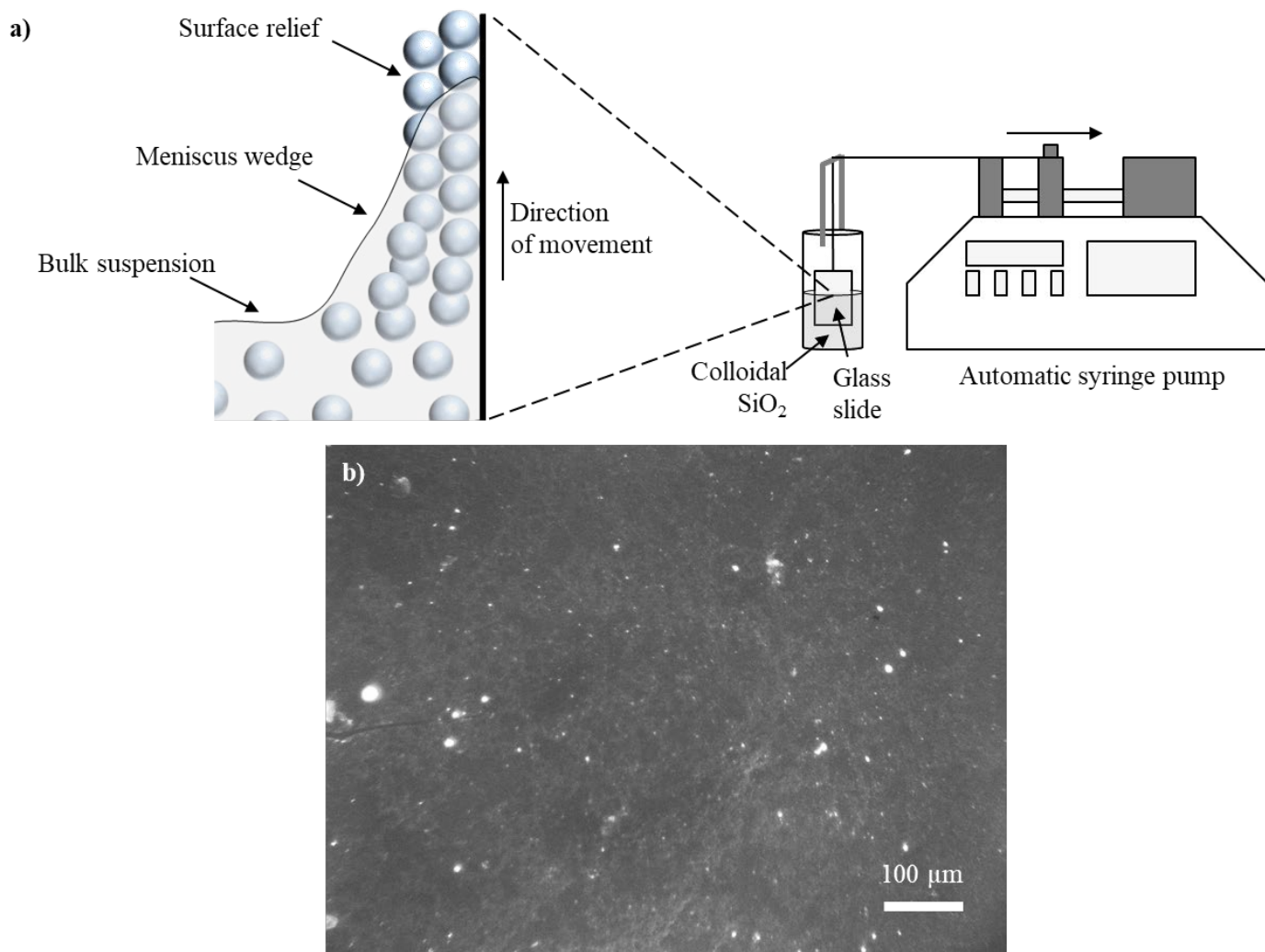


Figure S3: (a) Schematic representation of the vertical deposition method used in the study. (b) Gross assembly of SiO₂ particles on the surface.

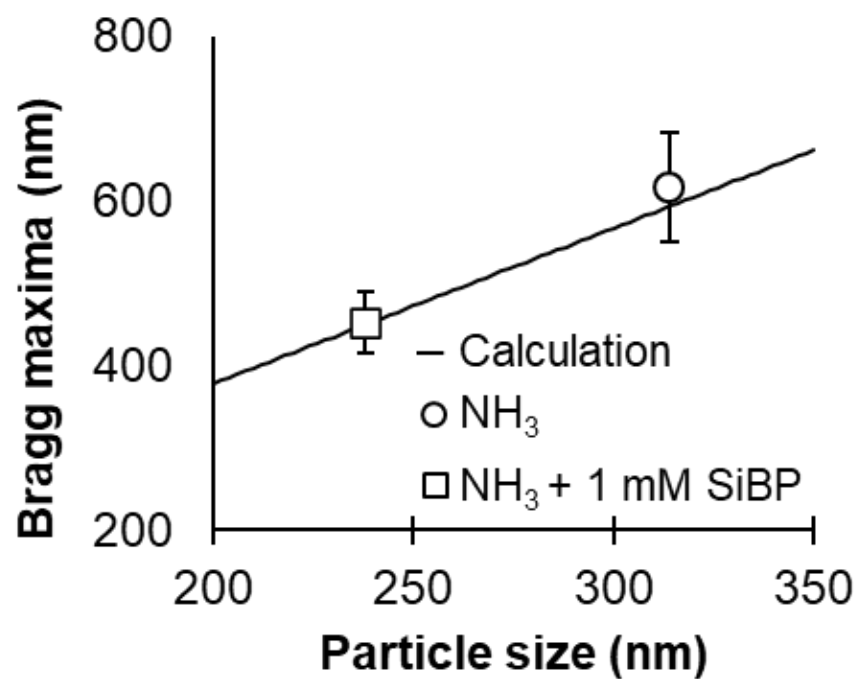


Figure S4: Fit of the measured λ values to the theoretical Bragg reflection maxima.

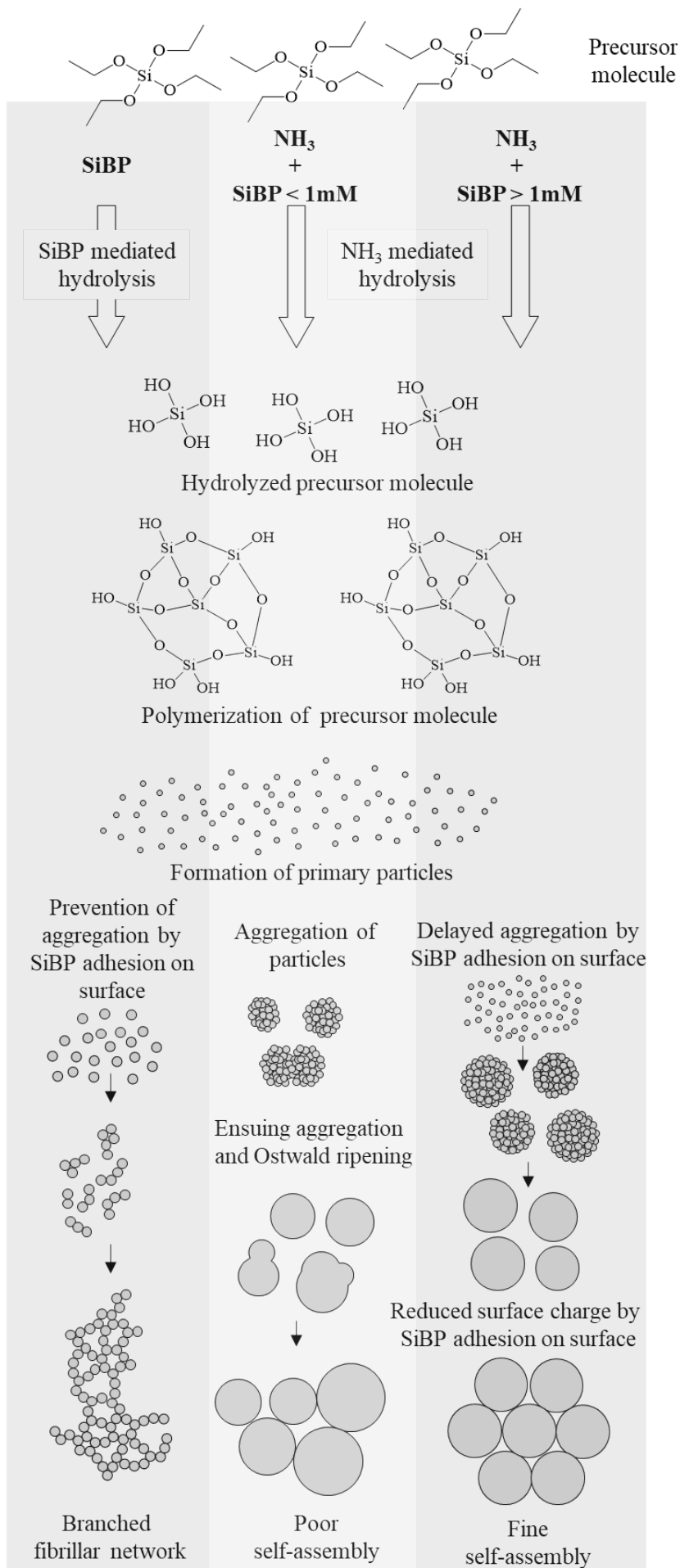


Figure S5: Schematic representation of the multiple roles of the SiBP in the formation and assembly of SiO₂.