

Supporting Information for:

Protein Adsorption and Reorganization on Nanoparticles Probed by the Coffee-Ring Effect: Application to Single Point Mutation Detection

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Contents

1. Additional drying patterns of PS particles with BSA
2. Drying patterns of pure protein solutions
3. Surface tension measurement
4. Adsorption isotherm of BSA as a function of the initial protein concentration
5. pH measurements
6. Additional drying patterns of PS particles with p-HbA
7. Ring factor analysis of drying patterns with p-HbA
8. Adsorption isotherm of myoglobin on PS-AMI particles
9. Adsorption isotherm of p-HbA as a function of the initial protein concentration

1. Additional drying patterns of PS particles with BSA

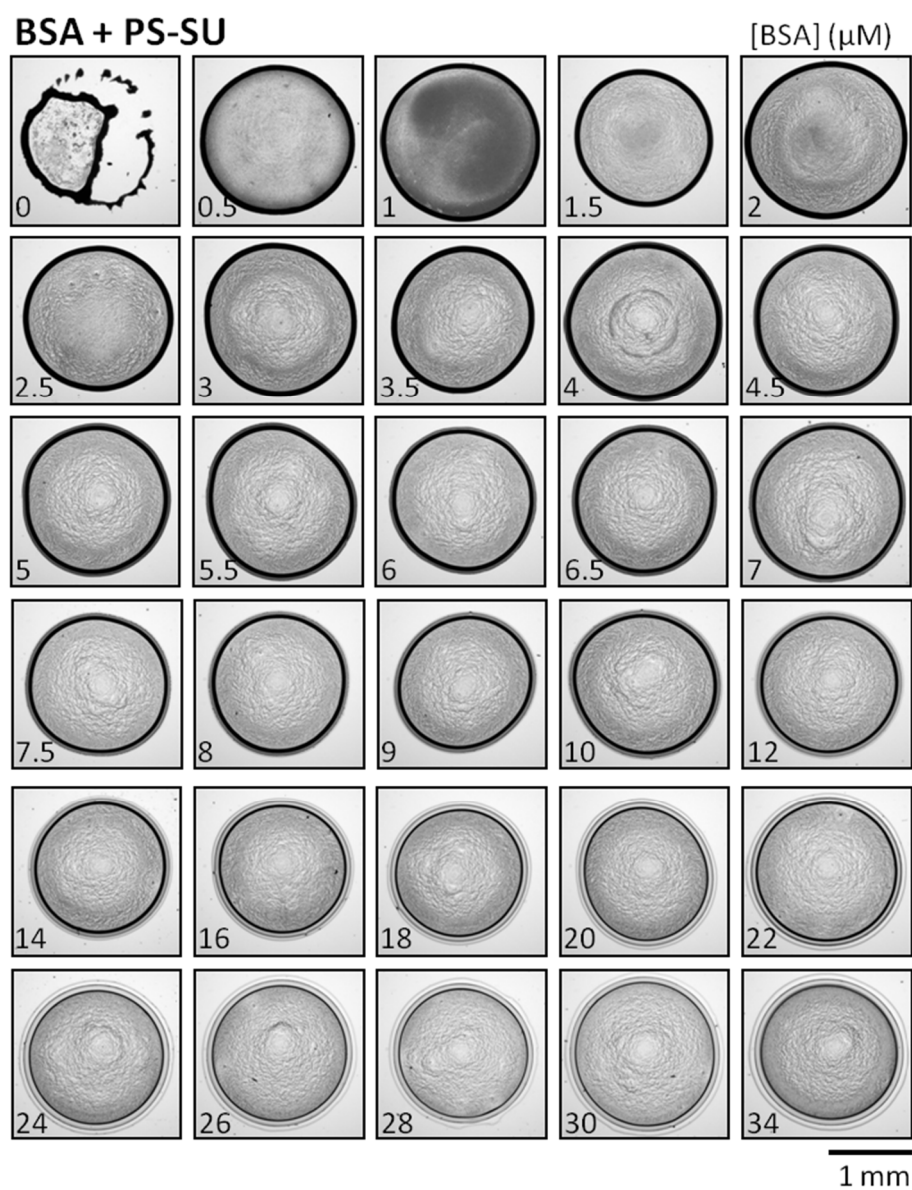


Figure S1. Brightfield microscope images of drying patterns of 0.8 μL drops of PS-SU particle solutions at different concentrations of BSA ($C_{\text{PS}} = 2 \text{ mg/mL}$)

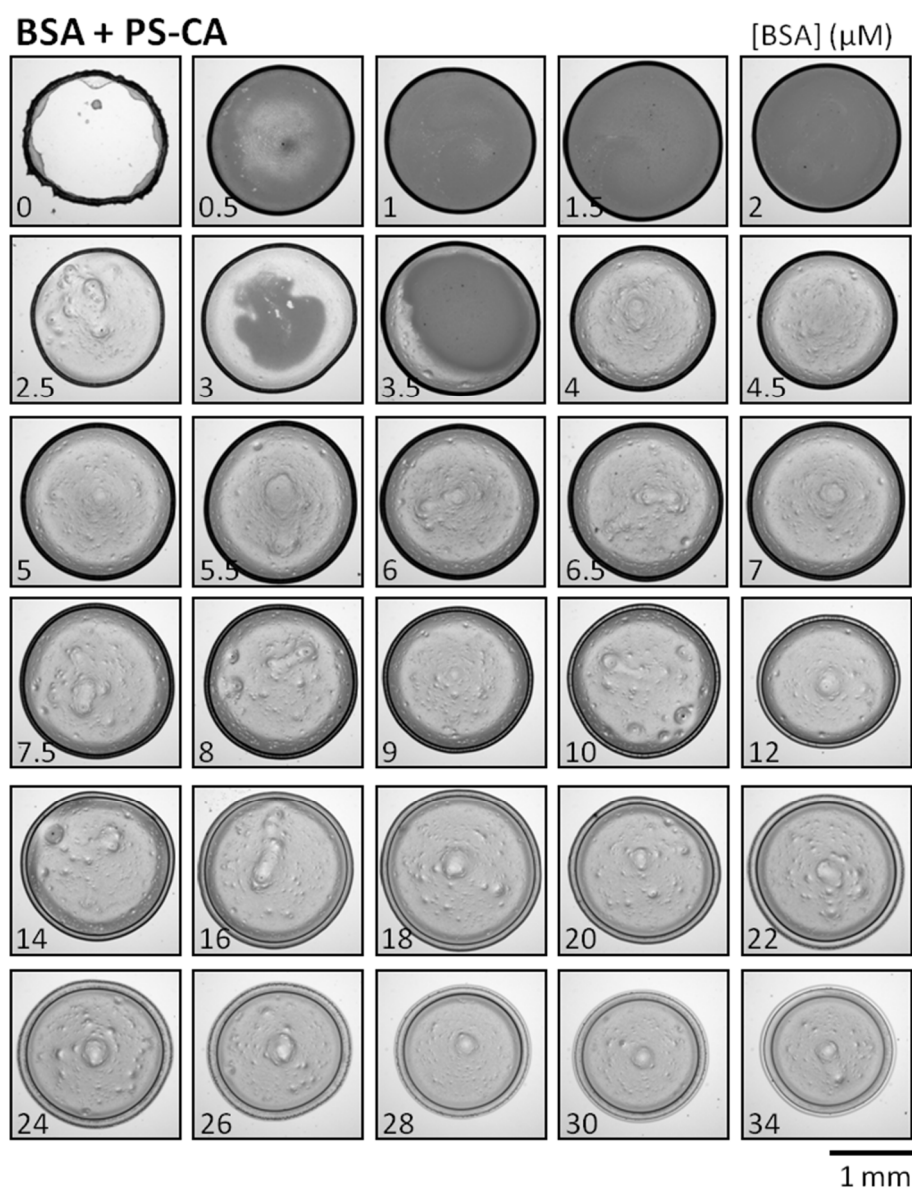


Figure S2. Brightfield microscope images of drying patterns of 0.8 μL drops of PS-CA particle solutions at different concentrations of BSA ($C_{\text{PS}} = 2 \text{ mg/mL}$)

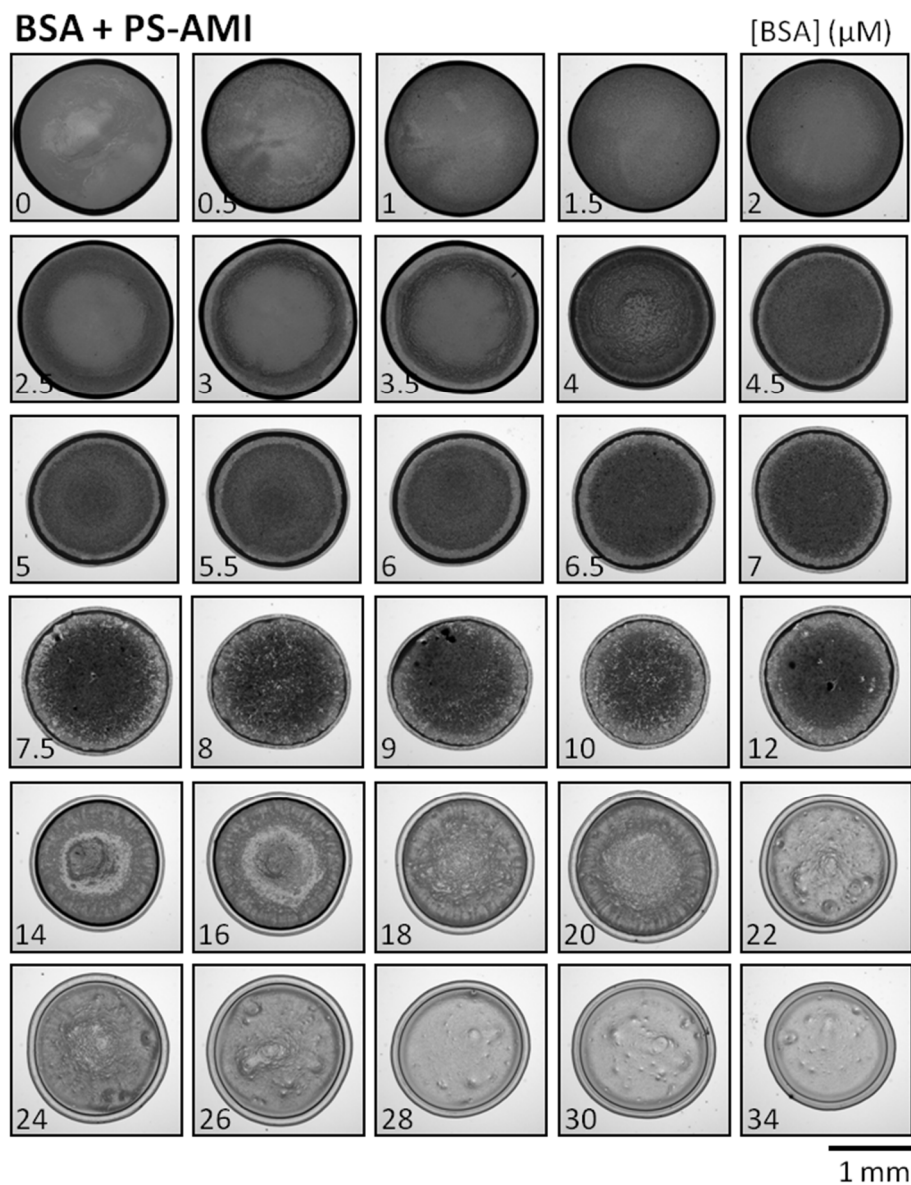


Figure S3. Brightfield microscope images of drying patterns of 0.8 μL drops of PS-AMI particle solutions at different concentrations of BSA ($C_{\text{PS}} = 2 \text{ mg/mL}$)

2. Drying patterns of pure protein solutions

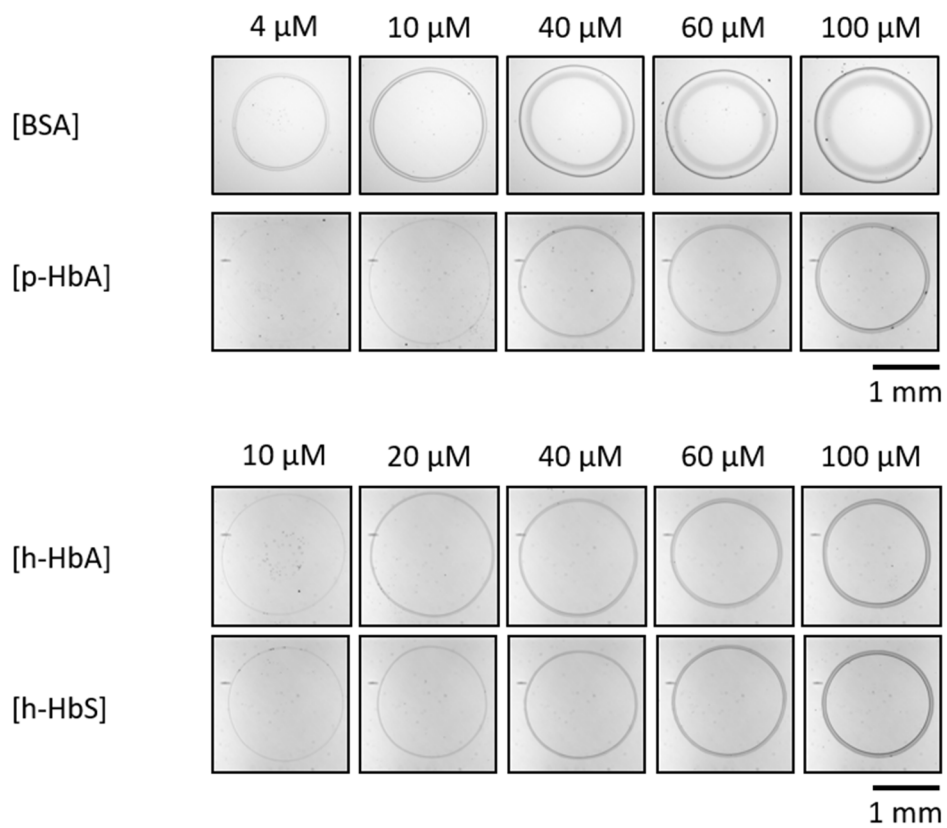


Figure S4. Brightfield microscope images of drying patterns of 0.8 μL drops of pure protein solutions (BSA, p-HbA, h-HbA and h-HbS) at various protein concentrations

3. Surface tension measurement

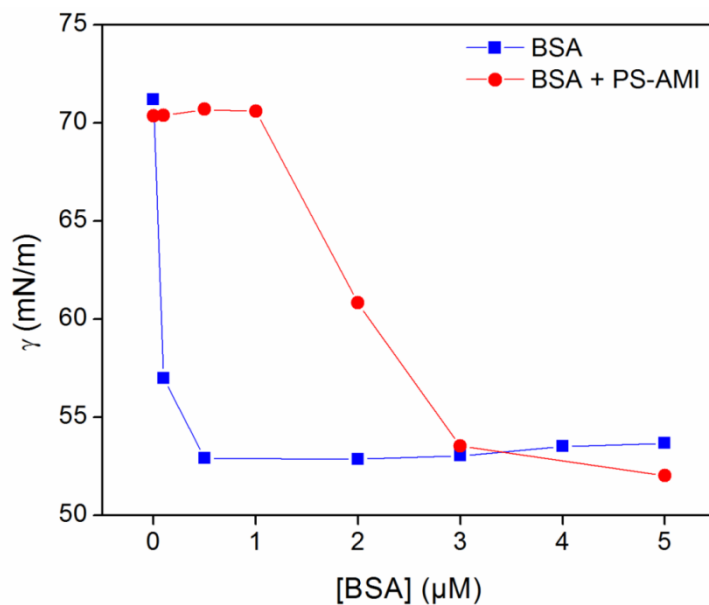


Figure S5. Surface tension of 10 μL drops of BSA with (●) and without (■) PS-AMI particles ($C_{\text{PS}} = 2$ mg/mL) as a function of BSA concentration

4. Adsorption isotherm of BSA as a function of the initial protein concentration

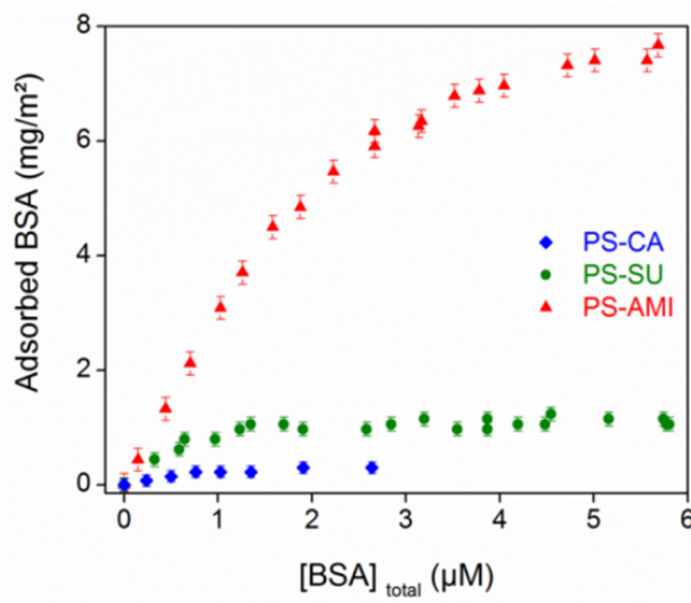


Figure S6. Adsorption isotherm of BSA on PS-CA (◆), PS-SU (●) and PS-AMI (▲) particles as a function of the initial BSA concentration.

5. pH measurements

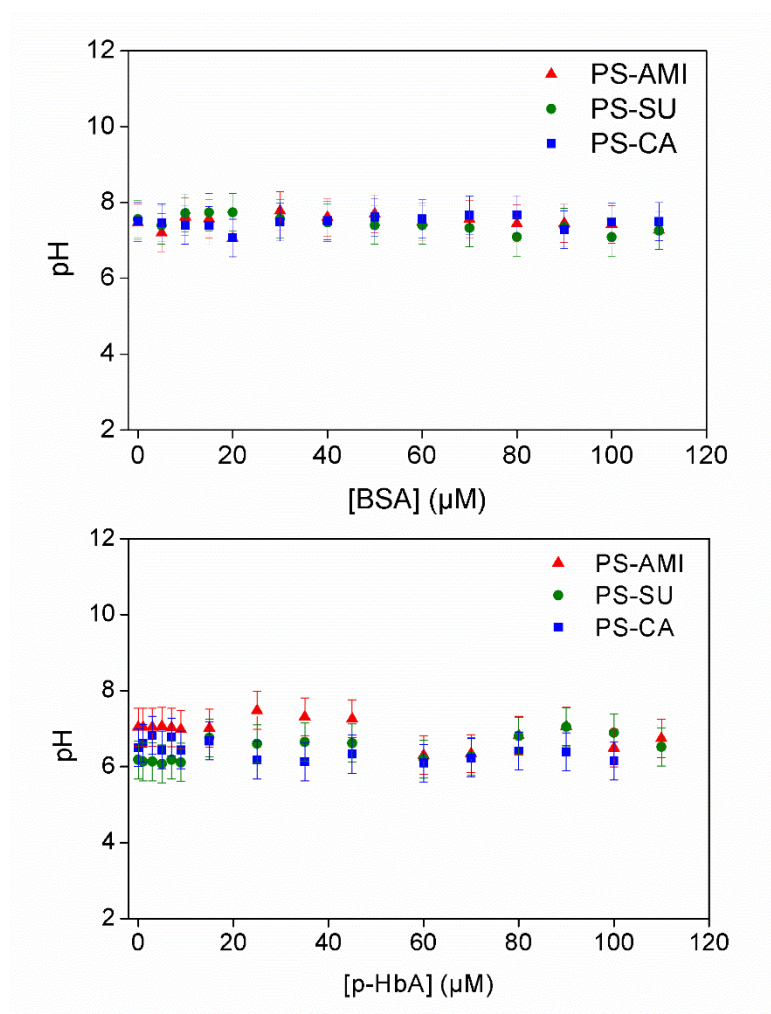


Figure S7. pH measurements of PS-CA (■), PS-SU (●) and PS-AMI (▲) particle solutions for an equivalent $C_{\text{PS}} = 2 \text{ mg/mL}$ as a function of BSA and p-HbA concentration.

6. Additional drying patterns of PS particles with p-HbA

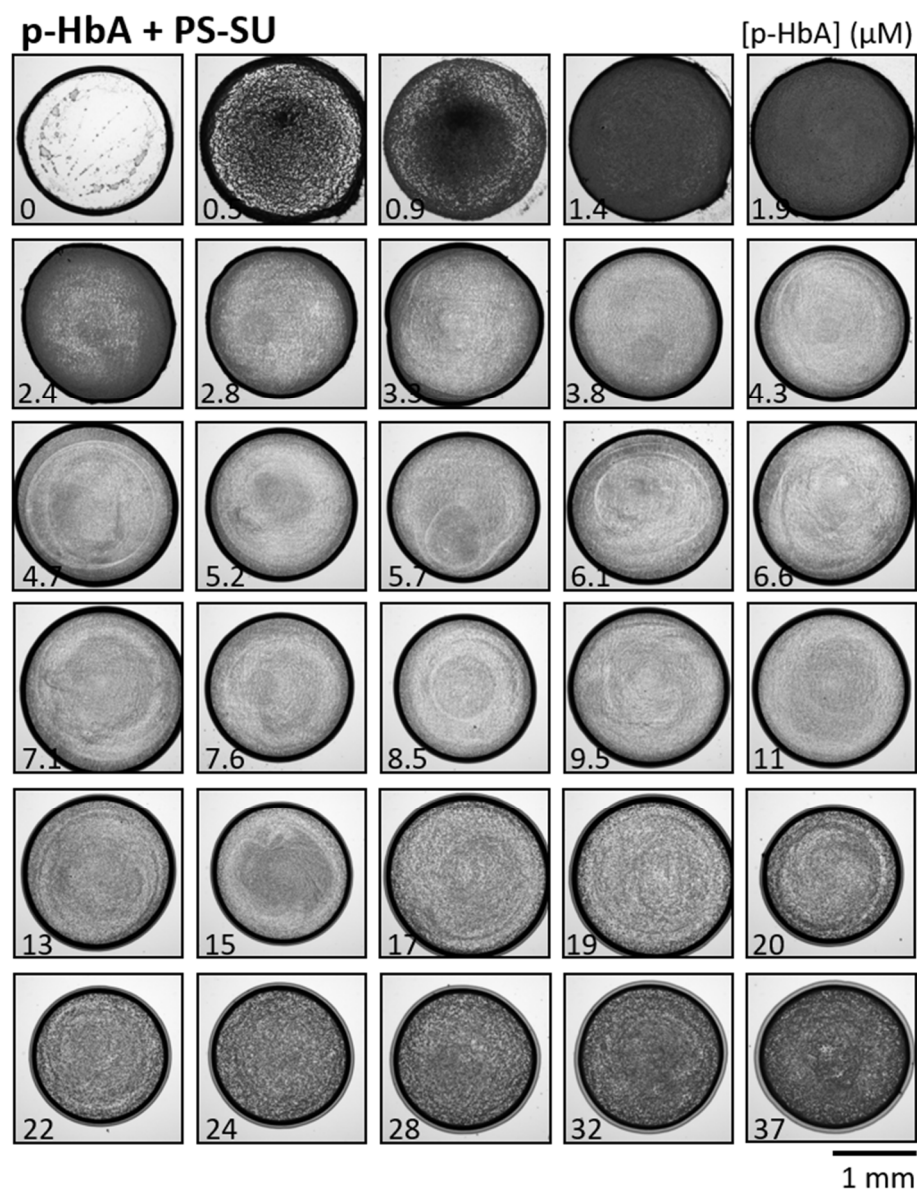


Figure S8. Brightfield microscope images of drying patterns of 0.8 μL drops of PS-SU particle solutions at different concentrations of p-HbA ($C_{\text{PS}} = 2 \text{ mg/mL}$)

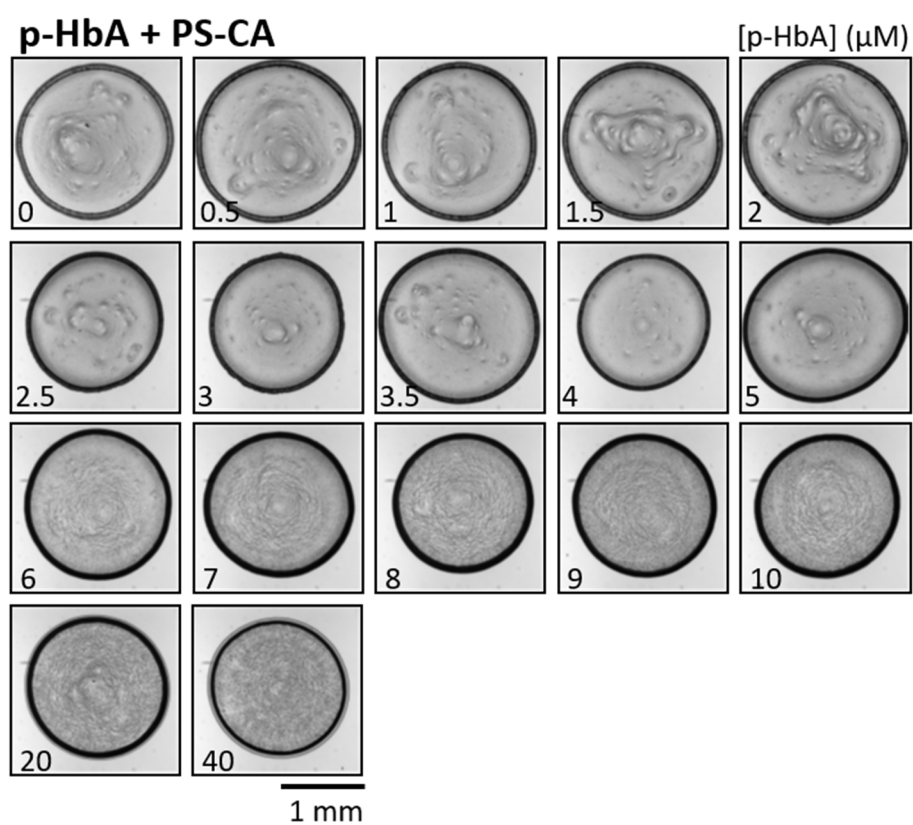


Figure S9. Brightfield microscope images of drying patterns of 0.8 μL drops of PS-CA particle solutions at different concentrations of p-HbA ($C_{\text{PS}} = 2 \text{ mg/mL}$)

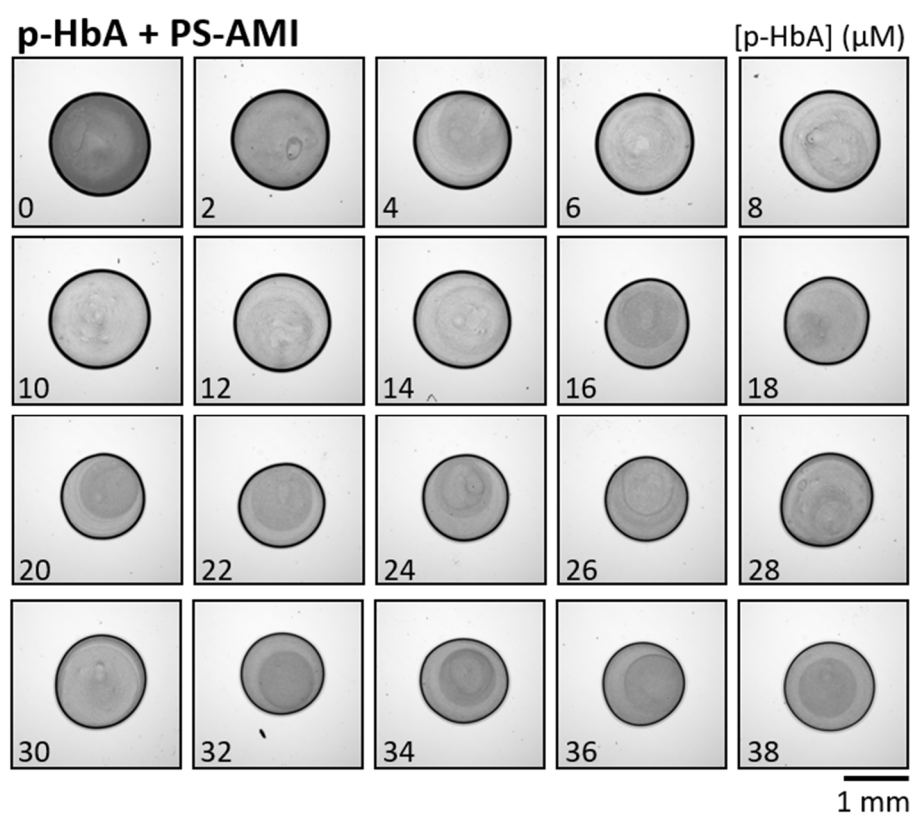


Figure S10. Brightfield microscope images of drying patterns of 0.8 μL drops of PS-AMI particle solutions at different concentrations of p-HbA ($C_{\text{PS}} = 2 \text{ mg/mL}$)

7. Ring factor analysis of drying patterns with p-HbA

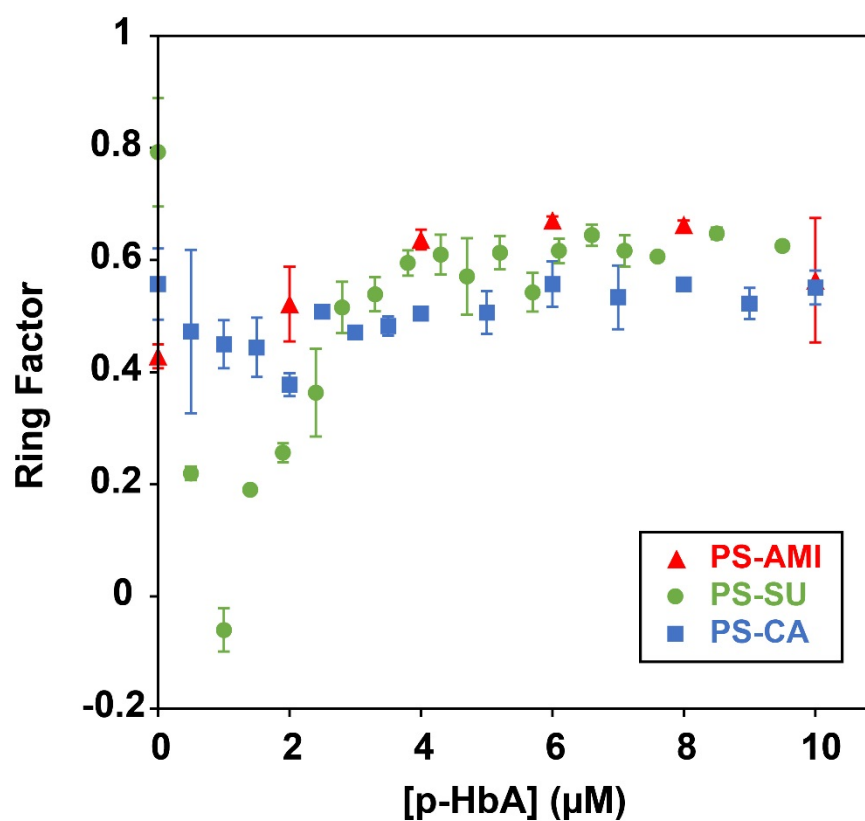


Figure S11. Ring factor (RF) evolution as a function of p-HbA concentration. RF was calculated by image analysis of the patterns obtained with PS-AMI (red triangles), PS-SU (green disks) and PS-CA (blue squares) particles ($C_{\text{PS}} = 2 \text{ mg/mL}$). Error bars correspond to mean \pm std on triplicates.

8. Adsorption isotherm of myoglobin on PS-AMI particles

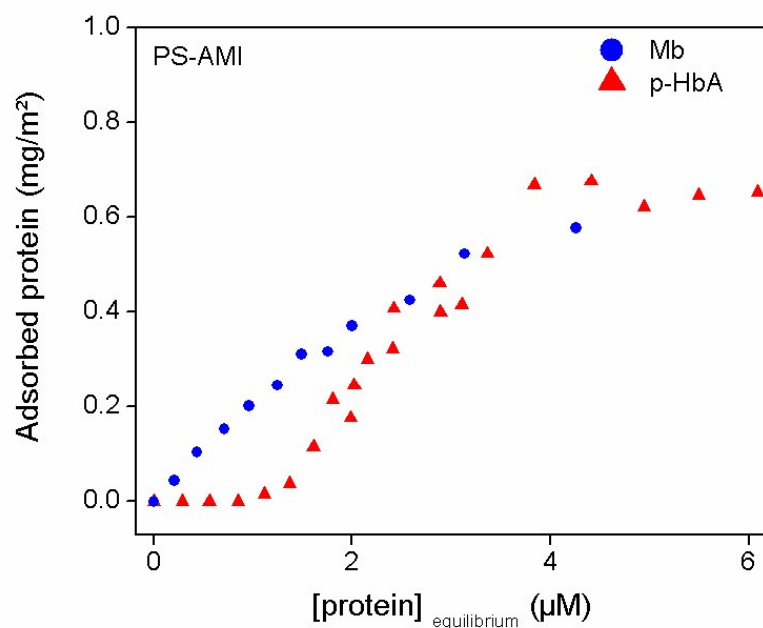


Figure S12. Adsorption isotherm of Mb (●) and p-HbA (▲) on PS-AMI particles ($C_{PS} = 2$ mg/mL)

9. Adsorption isotherm of p-HbA as a function of the initial protein concentration

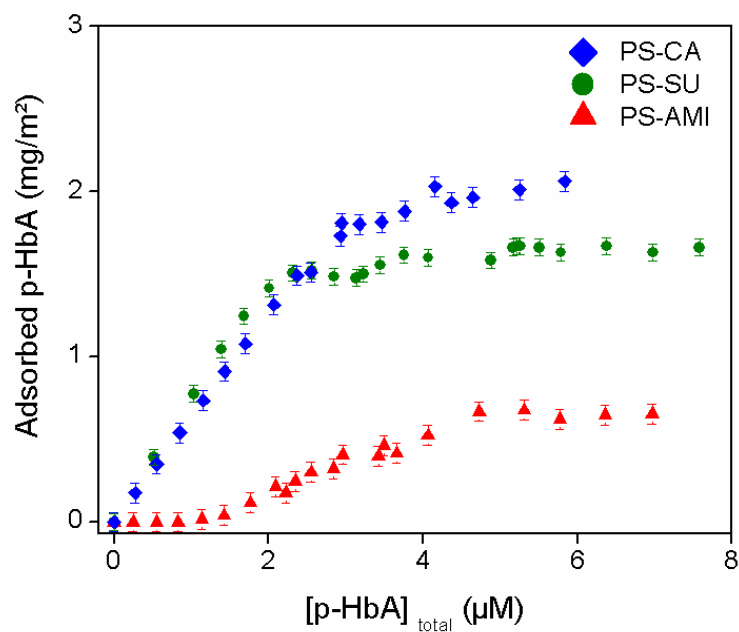


Figure S13. Adsorption isotherm of p-HbA on PS-CA (◆), PS-SU (●) and PS-AMI (▲) particles as a function of initial BSA concentration.