Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

Investigating How Vesicle Size Influences Vesicle Adsorption on Titanium Oxide: A Competition between Steric Packing and Shape Deformation

Abdul Rahim Ferhan,[1] Joshua A. Jackman,[1] Nam-Joon Cho[*,1,2]

[1]School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue 639798, Singapore
[2]School of Chemical and Biomedical Engineering, Nanyang Technological University, 62 Nanyang Drive 637459, Singapore

*Address correspondence to:
E-mail: njcho@ntu.edu.sg (N.J.C.)

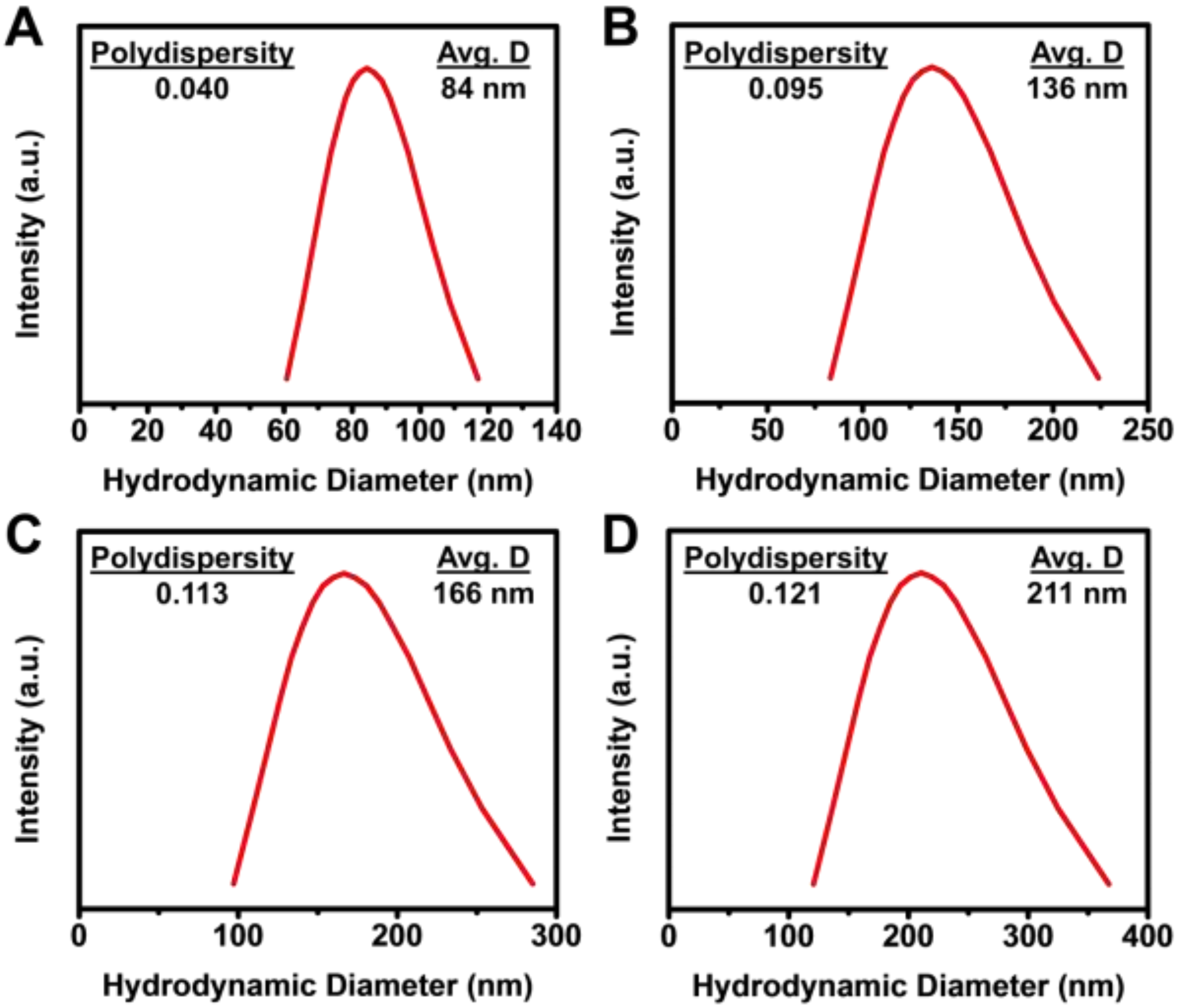

Figure S1. Lognormal size distributions of the different vesicle populations plotted as intensity versus hydrodynamic diameter, along with the polydispersity values for samples with average, intensity-weighted effective diameters of **(A)** 84 nm, **(B)** 136 nm, **(C)** 166 nm and **(D)** 211 nm. The highest intensity value corresponds to the intensity-weighted average hydrodynamic diameter.

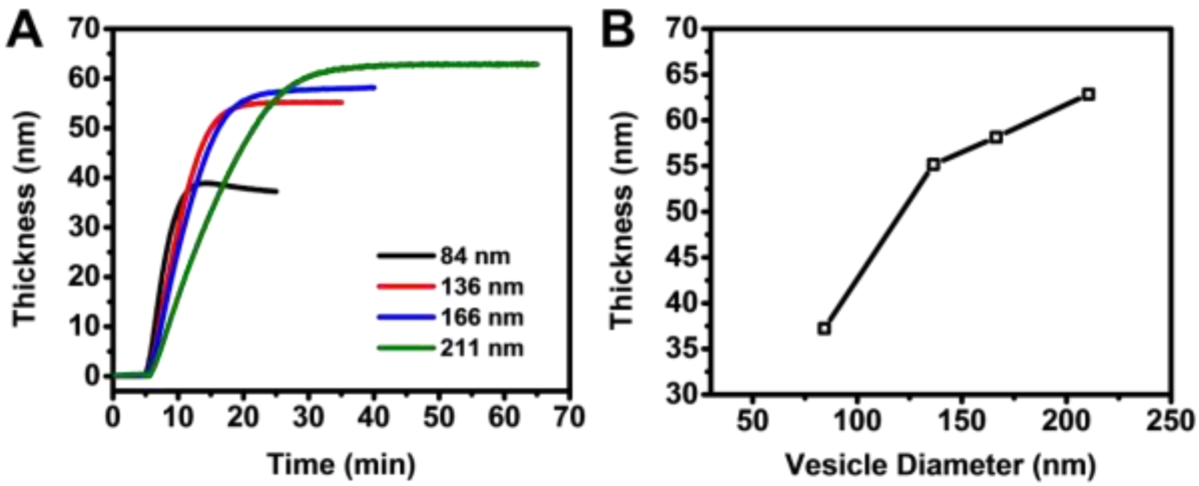

Figure S2. (A) Temporal variation of adlayer thickness during the adsorption of different sized vesicles. **(B)** Plot of adlayer thickness versus vesicle diameter to infer the degree of vesicle deformation for different sized vesicles.

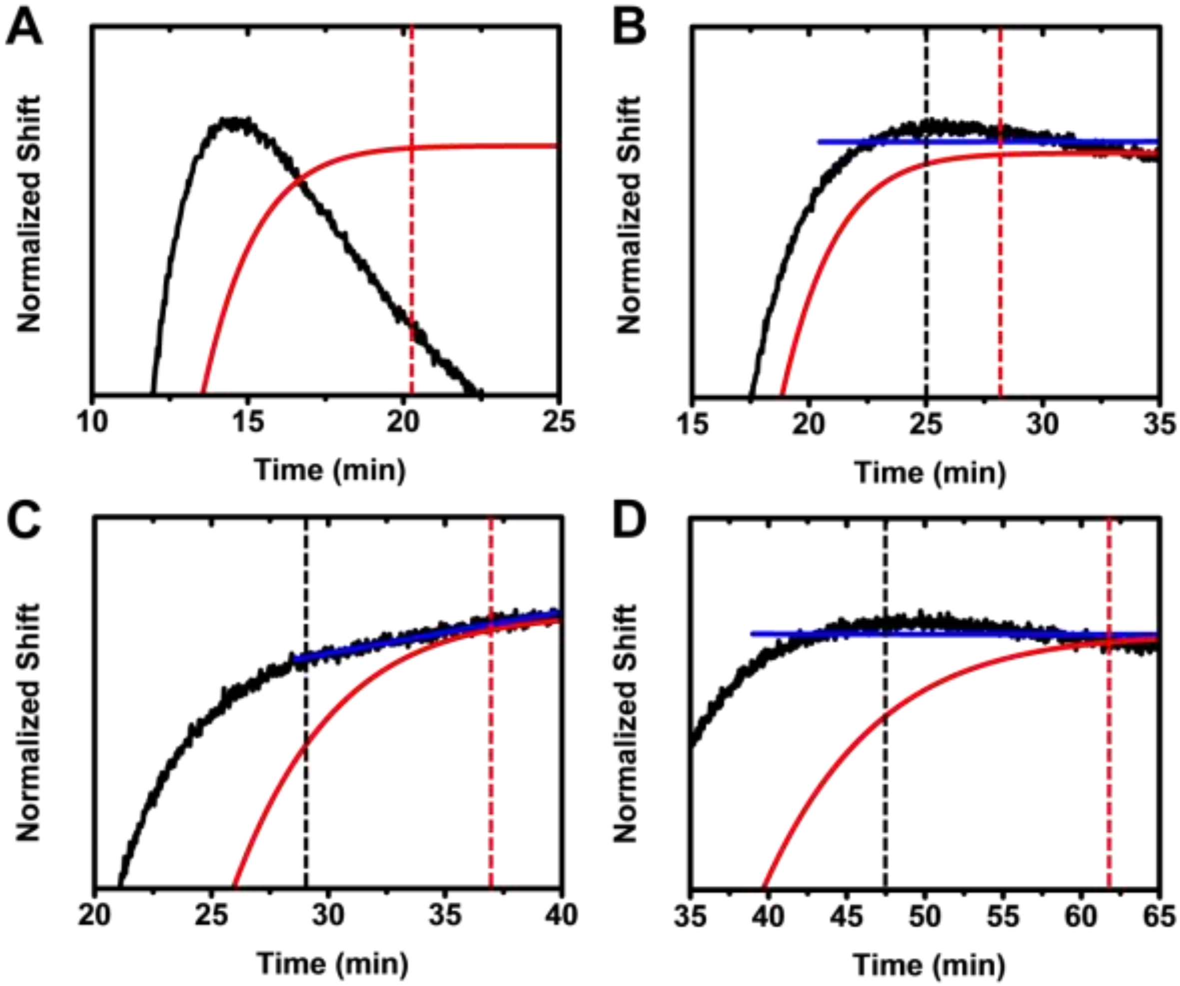

Figure S3. The fitted data of normalized resonance frequency shifts superimposed against normalized LSPR peak shifts obtained simultaneously during the adsorption of DOPC vesicles with **(A)** 84 nm, **(B)** 136 nm, **(C)** 166 nm and **(D)** 210 nm diameter to extract the estimated times for the signals to stabilize; the black and red dashed lines depict the times when the frequency and LSPR shifts are stabilized, respectively. A Gaussian function is applied to fit the LSPR peak shifts ($R^2 > 0.99$ in all cases).