

Supporting Information

pH Regulated Shaping of Pillar[5]arene Droplets at Liquid-Liquid Interface

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General Information:

Materials: Anionic Pillar[5]arene was synthesized according to previously reported literature¹. Toluene was purchased from Merck Millipore and used without purification. Millipore water (18.2 M Ω •cm at 25 °C) was used in all interfacial tension measurements.

Characterization: The dynamic interfacial tension (γ) was analyzed by a tensiometer (Drop Shape Analyzer – DSA25 - KRÜSS GmbH) using a pendant-drop method, where the evolution of γ with time was recorded after the water phase was slowly injected into the toluene phase. The deformation and wrinkling behaviour were recorded as images or videos with a digital camera. The morphology of P[5]AA NPs was characterized by transmission electron microscopy using JEOL JEM-2100 microscope operating at acceleration voltage 200KV and dynamic light scattering (Malvern Zetasizer Nano ZSP ZEN5600) was used for size distribution measurements. Zeta potential measurements were carried out using (Malvern Zetasizer Nano ZSP ZEN5600). Intermolecular hydrogen bonding analysis was carried out using Thermo Scientific Nicolet iS5 FTIR Spectrometer. UV absorption spectra was measured on a SHIMADZU UV-2600 spectrophotometer.

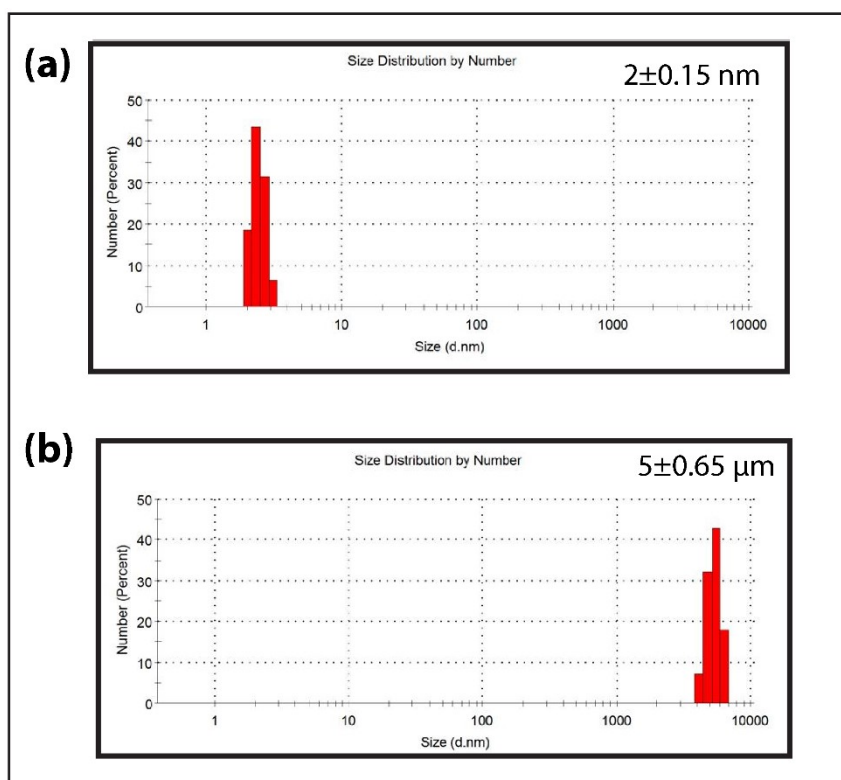


Figure S1. DLS data of P[5]AA NPs at (a) pH 2 and (b) pH 10.

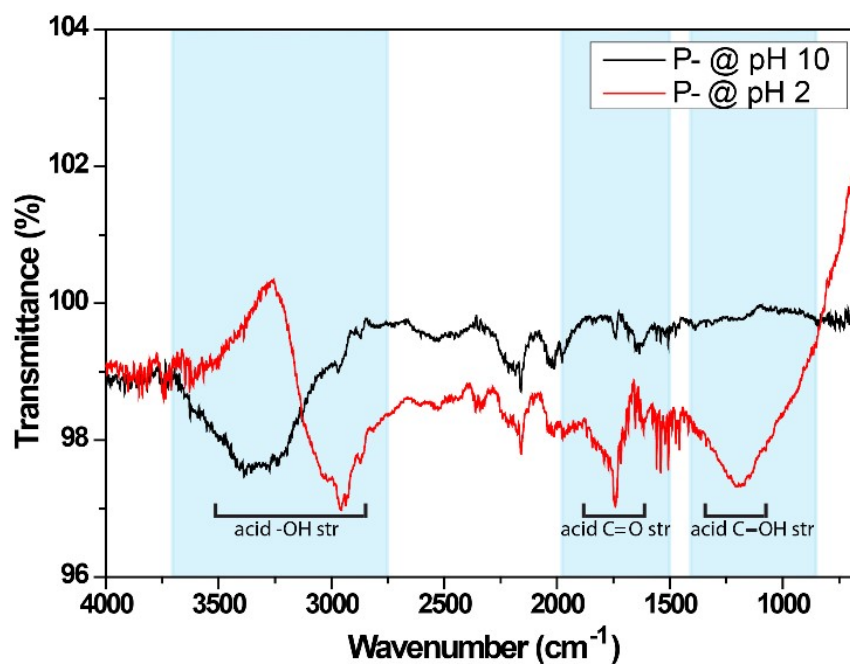


Figure S2. Comparison of the ATR-IR spectra for the P[5]AA NPs at pH 10 and 2.

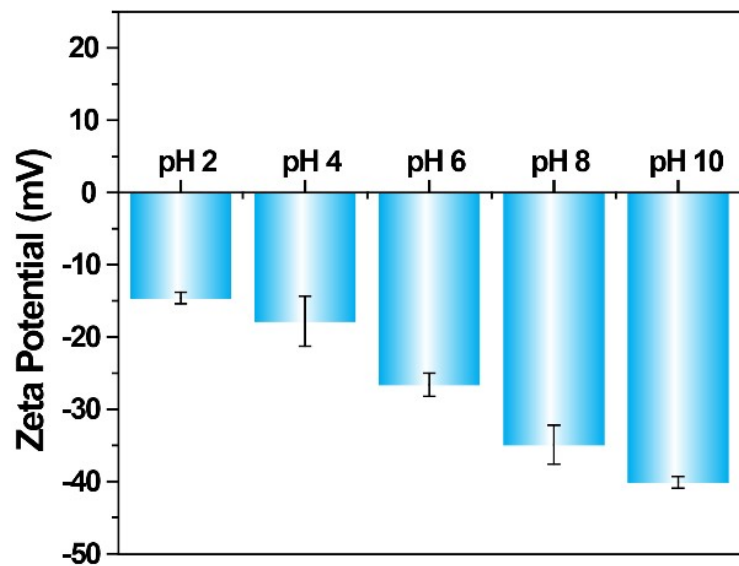


Figure S3. Zeta Potential plot at different pH of P[5]AA NPs.

Reference:

- 1) R. Varshney, M. Alam, C. Agashe, R. Joseph, D. Patra, *Chem. Commun.* 2020, **56**, 9284-9287.