

## SUPPORTING INFORMATION

### **Simple Preparation of Polyelectrolyte Complex Beads for the Long-Term Release of Small Molecules**

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#### **A. Comparison of Bead Volumes to Parent Droplet Volumes**

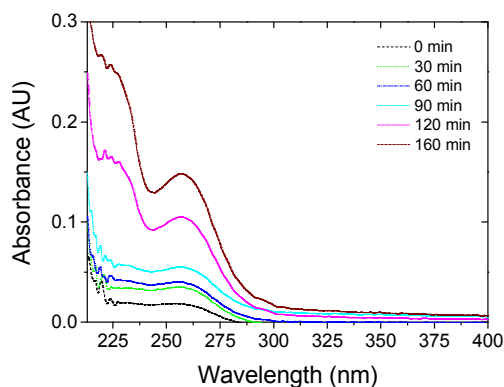
The volumes of PAH/PSS solution droplets were estimated based on their weights and densities (where the densities were measured by weighing known volumes of the PAH/PSS solutions). The volumes of the PEC beads were consistently greater than those of the parent solution droplets, indicating that water was taken up by the droplets during PEC formation.

**Table S1.** Average volumes of droplets and PEC beads ( $\pm$  standard deviation) at each polyelectrolyte solution composition.

Polyelectrolyte Concentration	Droplet Volume (ml)	Bead Volume (ml)
1.2 M PSS/ 0.4 M PAH	0.025 $\pm$ 0.002	0.034 $\pm$ 0.001
1.5 M PSS/ 0.5 M PAH	0.023 $\pm$ 0.001	0.030 $\pm$ 0.000
1.8 M PSS/ 0.6 M PAH	0.025 $\pm$ 0.001	0.029 $\pm$ 0.002

## B. PSS Leaching into Acid during PEC Formation

The PSS leached during PEC formation was measured after the 3-h incubation period in the acid using UV-Vis spectroscopy at  $\lambda = 255$  nm ( $\epsilon = 364.5$  M<sup>-1</sup>cm<sup>-1</sup>; see Figure S1 and Table S2). Table S3 compares the water loss upon drying to the theoretical initial water content of the beads (estimated based on the initial PAH/PSS concentration, and the measured water uptake/PSS leaching during PEC formation). The mass loss upon drying is a few percent lower than the theoretical initial water content because: (1) trace amounts of water still likely remain within the dried PEC beads; and (2) the simplified model analysis ignores the simple electrolytes (e.g., HCl and NaCl), which may remain entrapped within the beads.



**Figure S1.** UV-Vis absorbance spectra for the release of PSS into 3 M acid solution (diluted 50 times) during the PEC formation process at the 1.5 M PSS/0.5 M PAH parent solution composition.

**Table S2.** Percentage of the PSS leached into the acid solution during PEC formation.

Polyelectrolyte Concentration	% of PSS Released
1.2 M PSS/ 0.4 M PAH	$32.9 \pm 0.01$
1.5 M PSS/ 0.5 M PAH	$34.1 \pm 0.02$
1.8 M PSS/ 0.6 M PAH	$37.8 \pm 0.01$

**Table S3.** Comparison of the average weight loss during drying to the theoretical water content ( $\pm$  standard deviations) present in the PEC beads after their formation.

Polyelectrolyte Concentration	% Weight Loss Upon Drying	Theoretical Water Content in PEC Beads (wt. %)
1.2 M PSS/ 0.4 M PAH	$80.4 \pm 0.0\%$	$86.4 \pm 0.2$
1.5 M PSS/ 0.5 M PAH	$78.0 \pm 0.5 \%$	$83.0 \pm 0.0$
1.8 M PSS/ 0.6 M PAH	$75.9 \pm 0.1 \%$	$79.2 \pm 0.6$