

Electronic Supplementary Information for
Anisotropic Polydopamine Capsules with an Ellipsoidal Shape that
Can Tolerate Harsh Conditions: Efficient Adsorbents for Organic
Dyes and Precursors for Ellipsoidal Hollow Carbon Particles

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Supplementary Tables and Figures

Table S1. List of the adsorption of capacity (q) of various kinds of adsorbents for MB at 298k

Adsorbents	q (mg/g)	Refs.
Poly(cyclotriphosphazene-co-4,4'-sulfonyldiphenol) nanospheres	20	[1]
Carbon nanotubes	35	[2]
Multi-walled carbon nanotubes filled with Fe ₂ O ₃ particles	42.3	[3]
Coconut husk based activated carbon	66	[4]
Poly(cyclotriphosphazene-co-4,4'-sulfonyldiphenol) nanotubes	69.16	[5]
ZnCo ₂ O ₄ microspheres	79.1	[6]
Halloysite nanotubes	84.32	[7]
PDA microspheres	90.7	[8]
Palm kernel fiber	95.4	[9]
Citric acid modified mixed hardwoods power	237.4	[10]
Ellipsoidal PDA capsules	200	This work

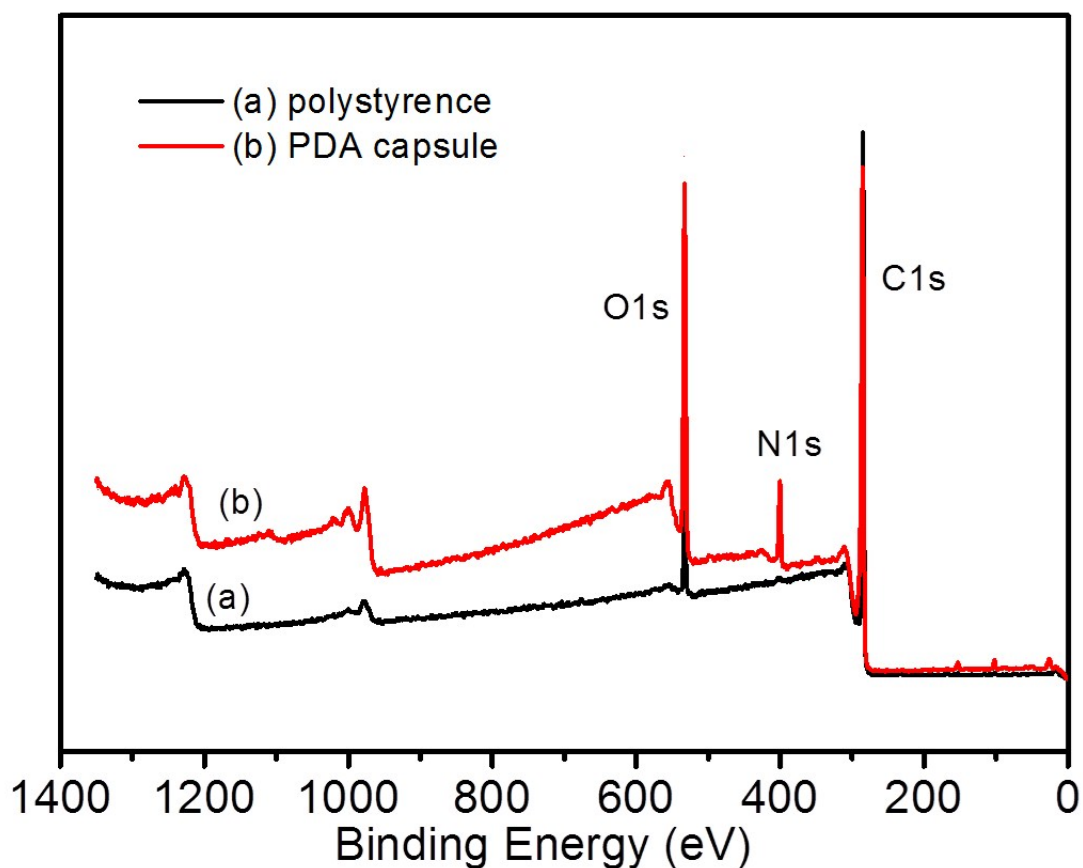


Figure S1. XPS survey spectra of polystyrene ellipsoids (a) and PDA capsules (b). The PDA capsules are obtained from PDA coating of micrometer-sized PS ellipsoids with an aspect ratio of 3.

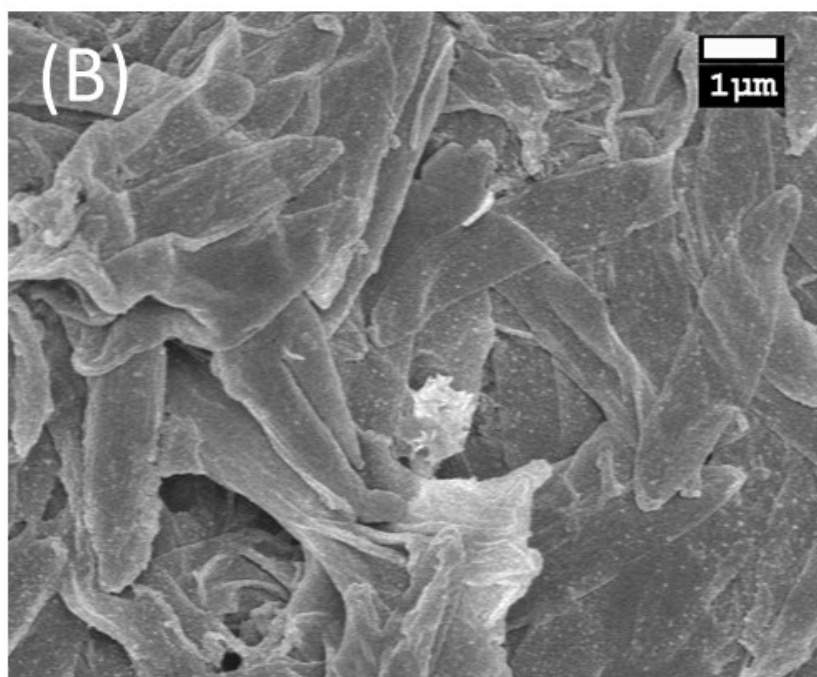
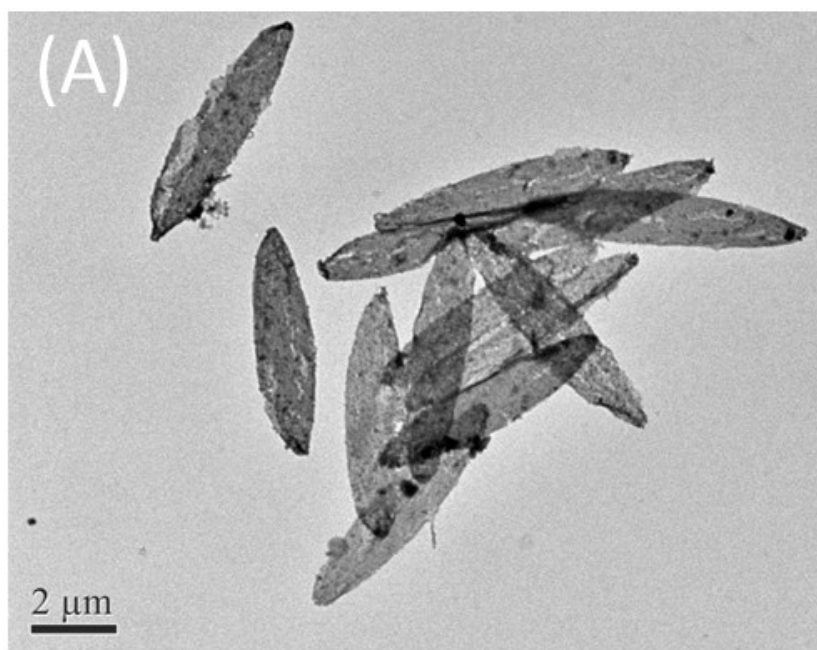


Figure S2. PDA capsules from PDA coating of micrometer-sized PS ellipsoids with an aspect ratio of 6. Coating conditions: 0.04 mg mL⁻¹ dopamine in Tris-HCl buffer (10 mM, pH = 8.5). The coating time was 10 hours.

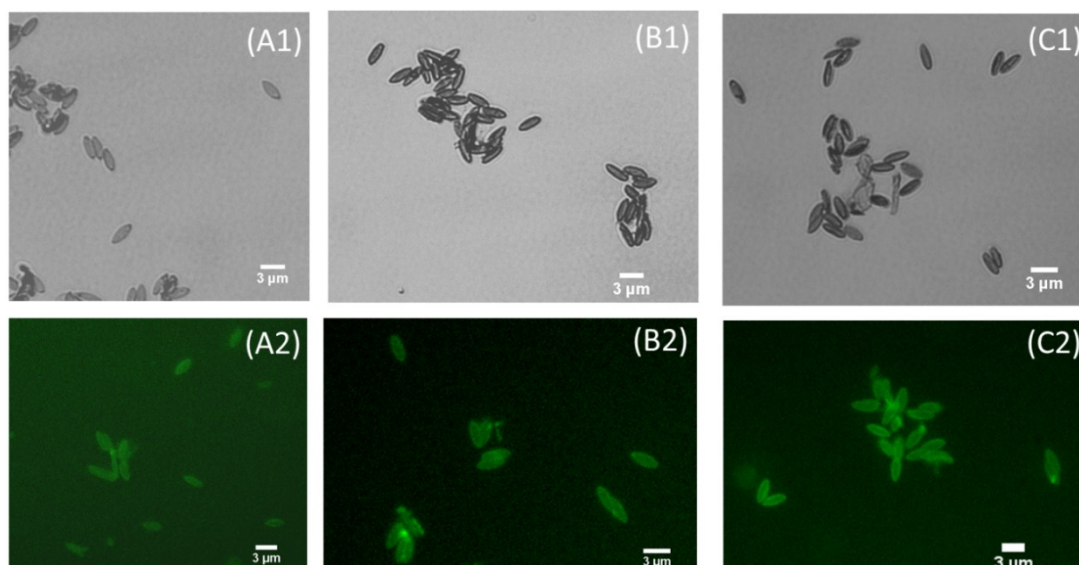


Figure S3. Differential interference contrast (DIC) and fluorescent microscopy of ellipsoidal PDA capsules obtained from iterating PDA coating of the micrometer-sized PS ellipsoid with an aspect ratio of 3. Top column: DIC images; Bottom column: fluorescent images. Images in (A), (B) and (C) are PDA capsules obtained from two, three and four cycles of coating, respectively. Coating conditions: the dopamine concentration is 0.1 mg mL^{-1} in Tris-HCl buffer (10 mM, pH = 8.5) and the coating time is 10 hrs.

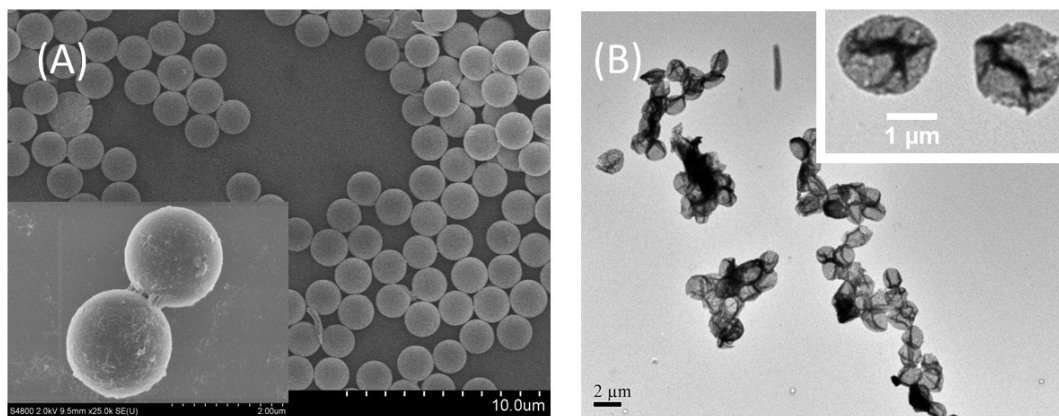


Figure S4. PDA coated of PS spheres (A) and spherical PDA capsules by dissolving away the PS templates (B). Coating conditions: the dopamine concentration is 0.1 mg mL^{-1} in Tris-HCl buffer (10 mM, pH = 8.5) and the coating time is 10 hrs.

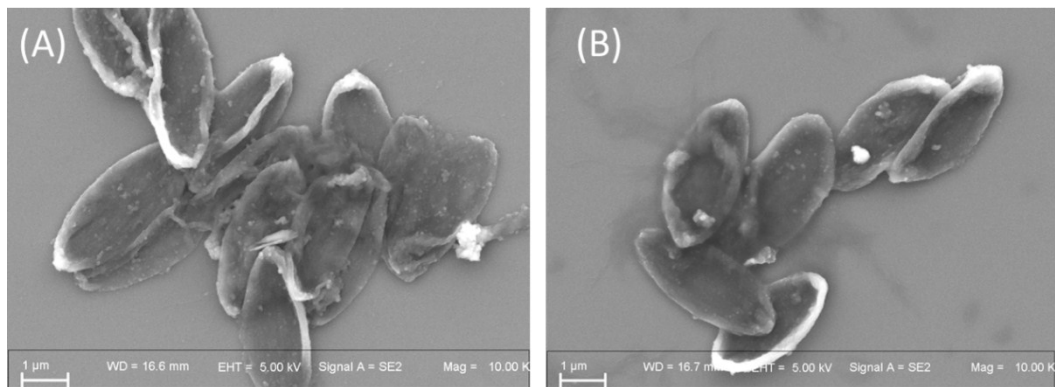


Figure S5. Influence of the coating time on the morphology of PDA capsules. The coating time is 15 (A) and 25 hours (B), respectively. The template is the micrometer-sized PS ellipsoid with an aspect ratio of 3. Coating conditions: 0.1 mg mL⁻¹ dopamine in Tris-HCl buffer (10 mM, pH = 8.5).

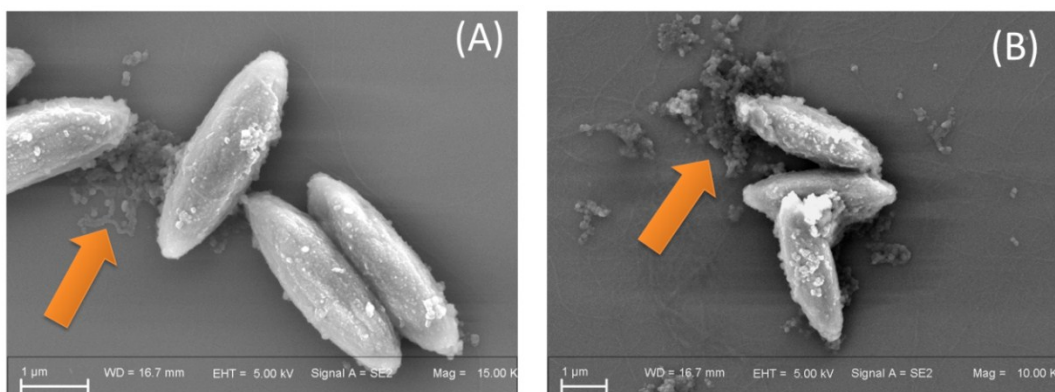


Figure S6. Influence of the initial dopamine concentration on the morphology of PDA capsules. The initial dopamine concentration is 1 (A) and 2 mg mL⁻¹ (B), respectively. The template is the micrometer-sized PS ellipsoid with an aspect ratio of 3. The coating time is 10 hours. Arrows in (A) and (B) highlight the pure PDA side products.

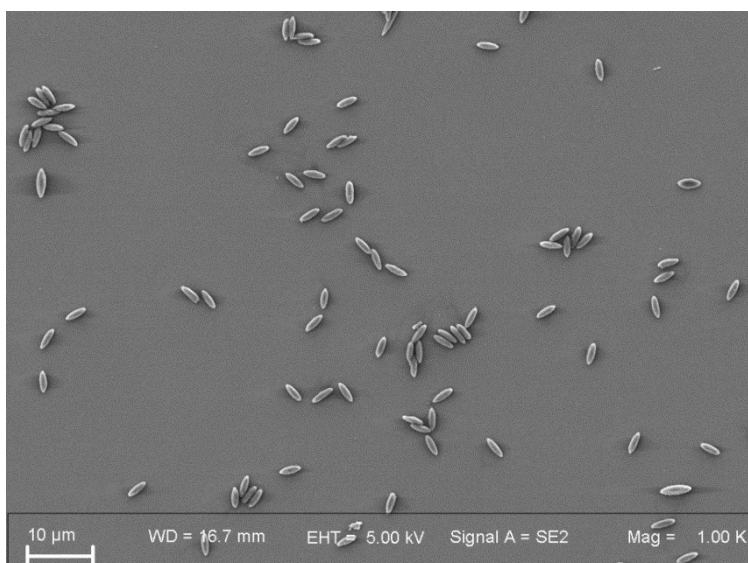


Figure S7. Overview of SEM of PDA capsules obtained from four-time PDA coating of the micrometer-sized PS ellipsoid with an aspect ratio of 3. The coating time is 10 hours.

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