

**One-step preparation of PEG segment functionalized polystyrene microspheres
and their application as latex in LOCI**

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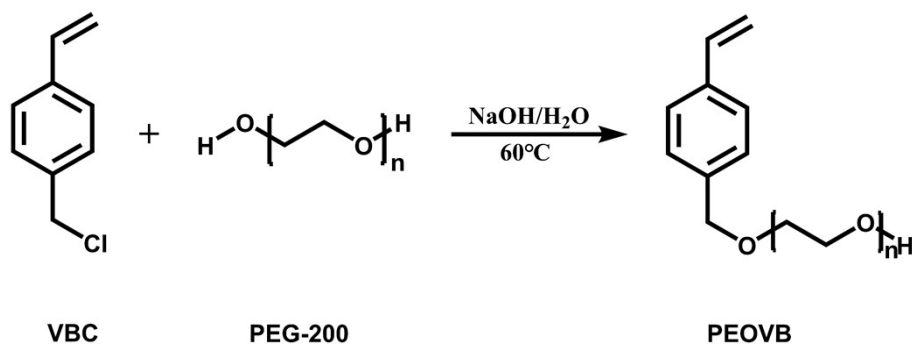
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Scheme S1. Synthesis and characterization of PEOVB

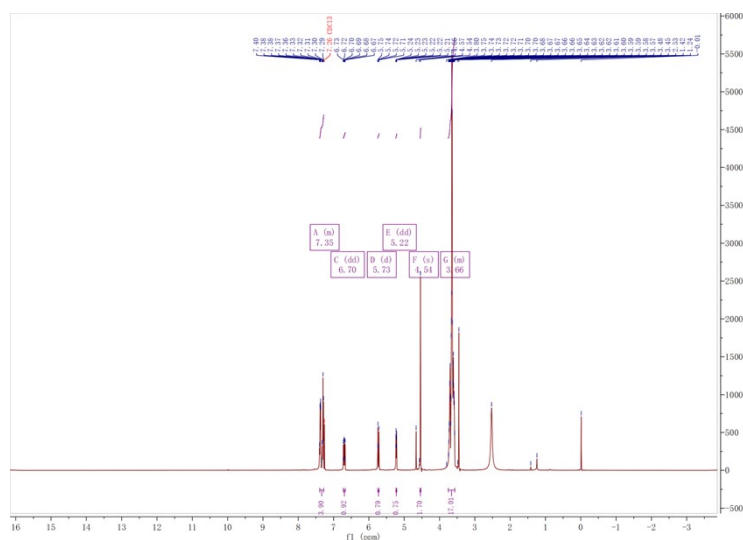


Fig S1. ^1H NMR spectrum of PEOVB

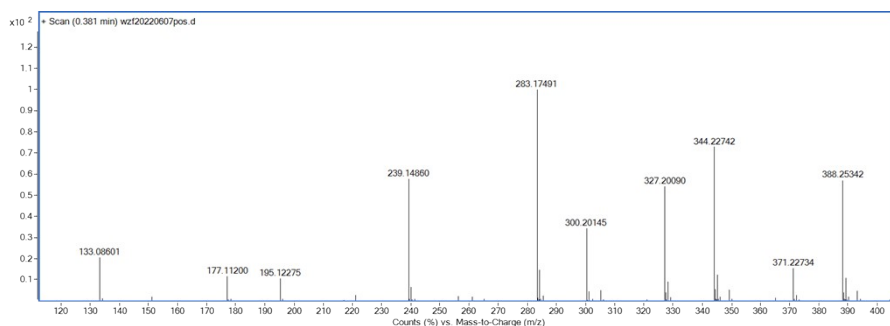


Fig S2. Mass spectrometry plot of PEG-200

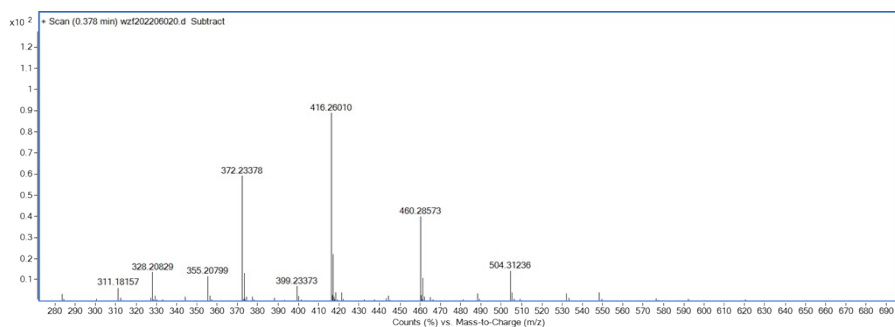


Fig S3. Mass spectrometry plot of PEOVB

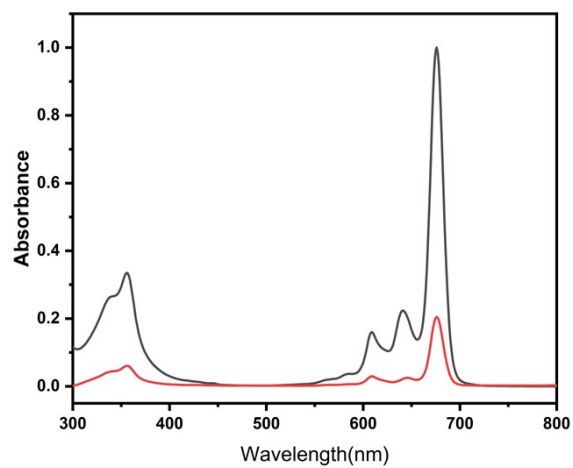


Figure S4. UV-vis absorption spectra of photosensitizers(black) and photosensitive polymer microspheres(red)

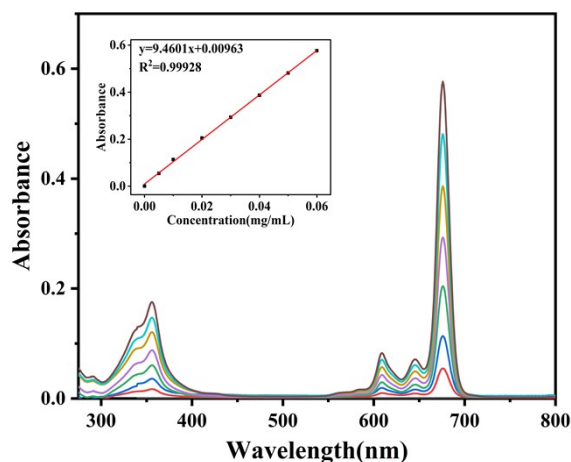


Fig S5. UV-vis absorption spectrum and standard curve of photosensitizers

Photosensitive analysis of photosensitive polymer microspheres : The 10 wt% photosensitive polymer microspheres (0.001 g) were dispersed in 10 mL of deionized water (0.1 mg/mL). Then 200 μ L of ABDA solution (4.80 mmol/L in dimethyl sulfoxide (DMSO)) was added to the above-mentioned portion of the solution and mixed to form a homogeneous solution, which was stabilized for 30 min under dark conditions, and the UV-vis spectra of the microsphere solutions were recorded using a laser at a wavelength of 680 nm as the excitation source.

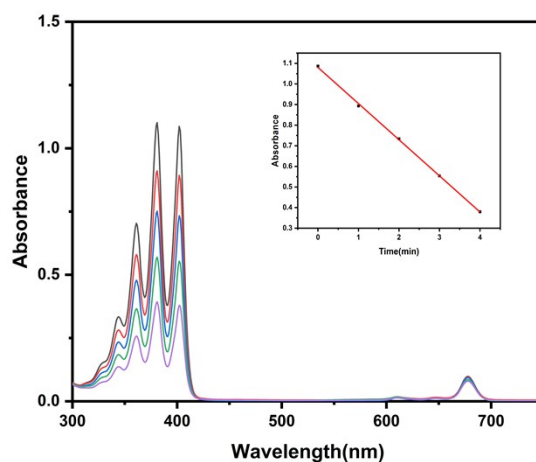


Fig S6. UV-vis spectra of ABDA in photosensitizers under illumination conditions (DMSO).

Table S1 Test results of different content of RT (3 times).

RT (ng/mL)	Average	SD	CV (%)
0.1	5327.5	201.65	3.79
0.2	7268.0	664.13	9.14
0.39	8531.5	149.37	1.75
0.78	14568.5	868.79	5.96
1.56	21826.5	80.53	0.37
3.12	36802.5	724.98	1.97
6.25	60412.5	2635.74	4.36
12.5	95886.5	4034.70	4.21
25	128942.0	2851.26	2.21
50	162940.5	5674.69	3.48
100	190344.0	7051.88	3.70