

## Supporting information

### **Aggregation-induced emission photosensitizers microneedles for enhanced melanoma photodynamic therapy**

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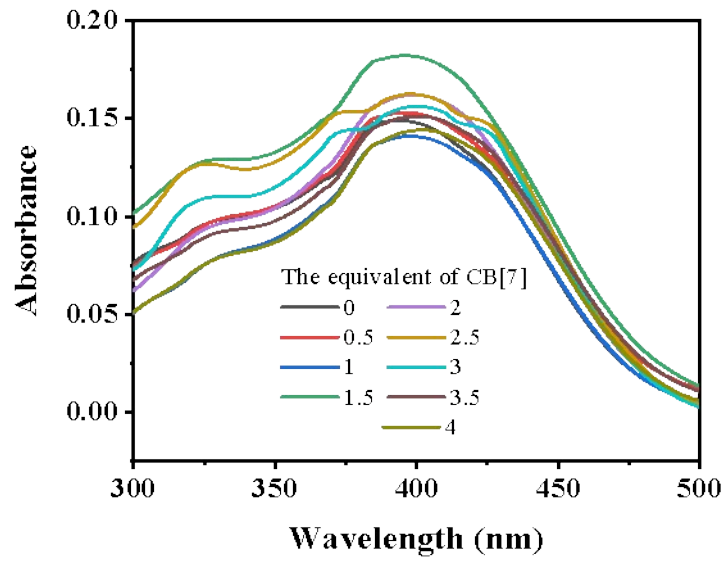
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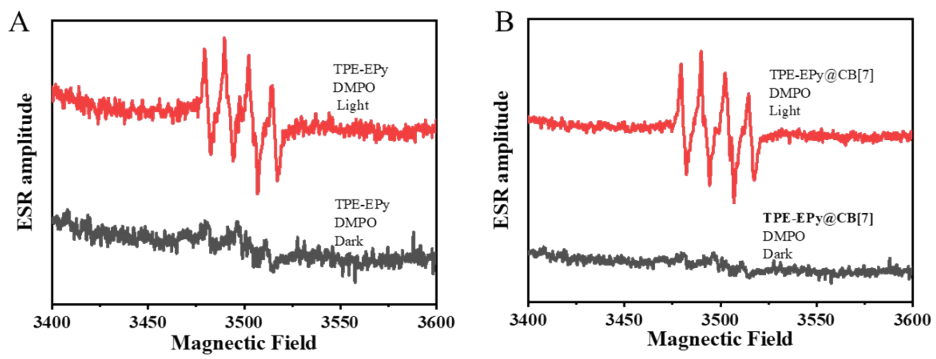
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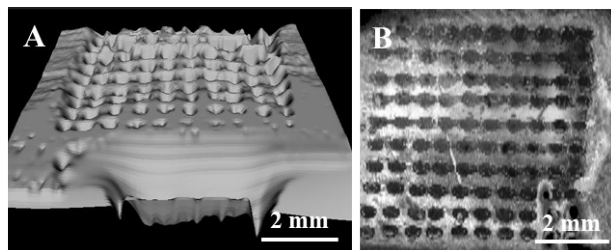
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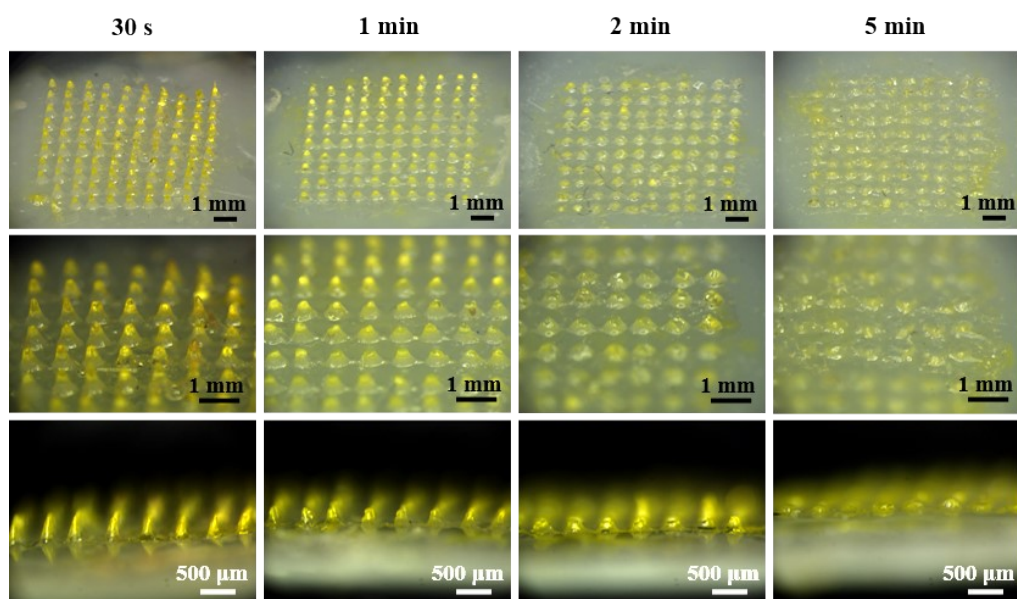
**Fig. S1** The absorption spectra of (E)-TPE-EPy (10  $\mu$ M) with different equivalent of CB[7] in water.



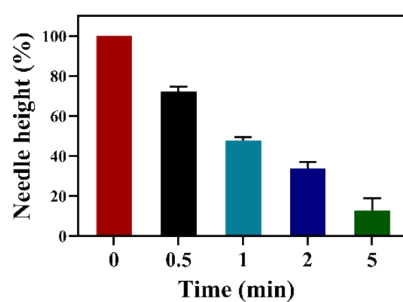
**Fig. S2** ESR spectra to detect ROS generation from TPE-EPy (A) and TPE-EPy@CB[7], (B) under irradiation, using DMPO as the spin trapper.



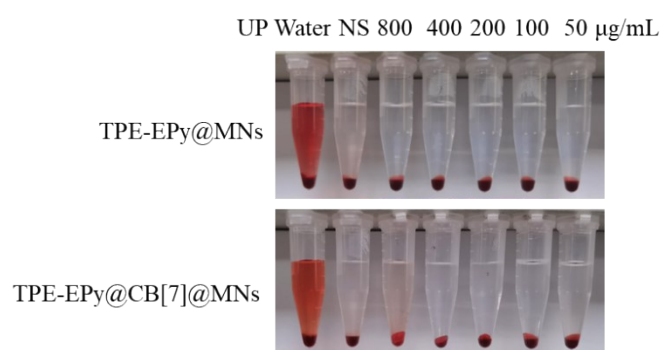
**Fig. S3** The OCT images of the mice skin after MNs penetration. (A) OCT image of the mice skin surface. (B) OCT image of the cross section at 100  $\mu$ m from the skin surface.



**Fig. S4** The dissolution of MNs inserting into the dorsal skin of mice at different times (30 s, 1, 2, 5 min).



**Fig. S5** Height change of MNs piercing into the dorsal skin of mice for 0, 0.5, 1, 2, 5 min.



**Fig. S6** Hemolysis assay results images of the TPE-EPy@MNs and TPE-EPy@CB[7]@MNs.