

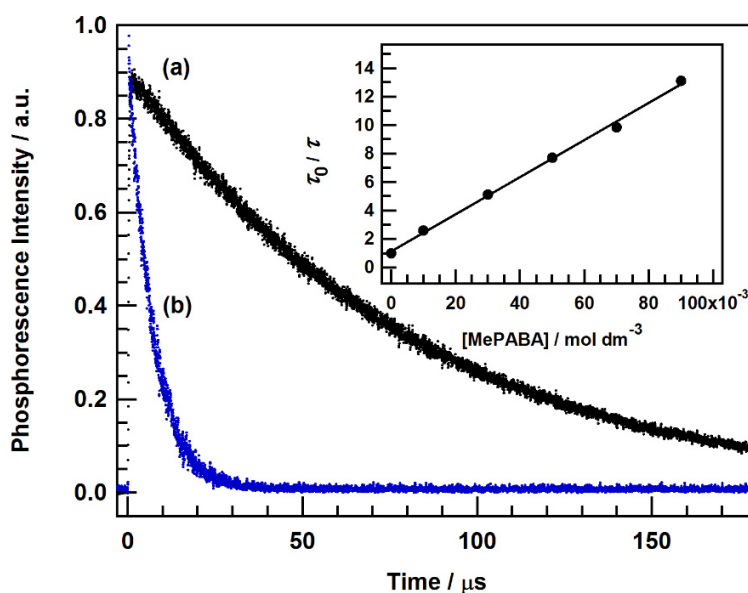
## Supporting Information

### Photoexcited triplet states of UV-B absorbers: ethylhexyl triazone and diethylhexylbutamido triazone

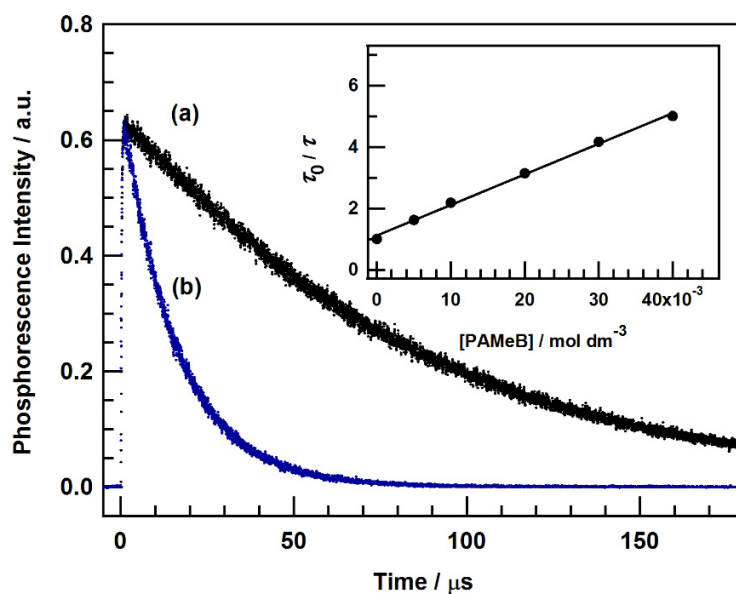
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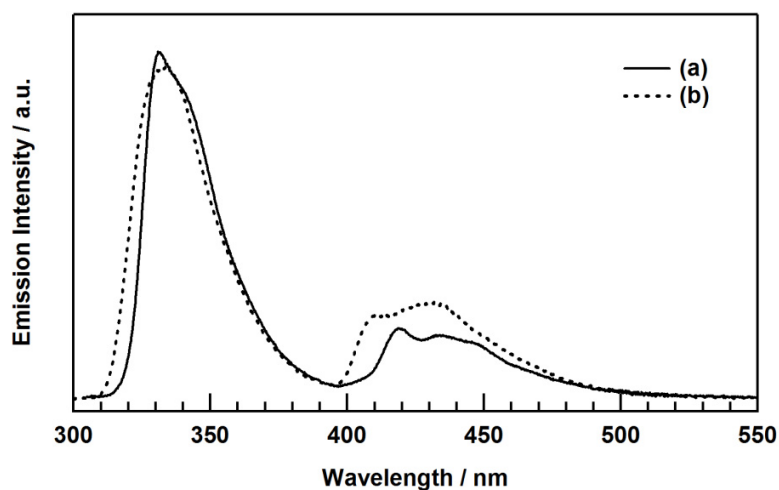
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**Fig. S1** Time-profiles of the phosphorescence of  $^1\text{O}_2(^1\Delta_g)$  generated by excitation of phenalenone in acetonitrile with 532 nm YAG laser pulse (a) in the absence and (b) in the presence of MePABA ( $9.0 \times 10^{-2}$  mol  $\text{dm}^{-3}$ ). The phosphorescence intensity was monitored at 1274 nm. Inset: Stern-Volmer plot.



**Fig. S2** Time-profiles of the phosphorescence of  $^1\text{O}_2(^1\Delta_g)$  generated by excitation of phenalene in acetonitrile with 532 nm YAG laser pulse (a) in the absence and (b) in the presence of PAMeB ( $4.0 \times 10^{-2} \text{ mol dm}^{-3}$ ). The phosphorescence intensity was monitored at 1274 nm. Inset: Stern-Volmer plot.



**Fig. S3** Emission spectra of (a) MePABA ( $\lambda_{\text{exc}} = 290 \text{ nm}$ ) and (b) PAMeB ( $\lambda_{\text{exc}} = 285 \text{ nm}$ ) in ethanol at 77 K. The sample solutions were prepared at a concentration of  $6 \times 10^{-5} \text{ mol dm}^{-3}$ .

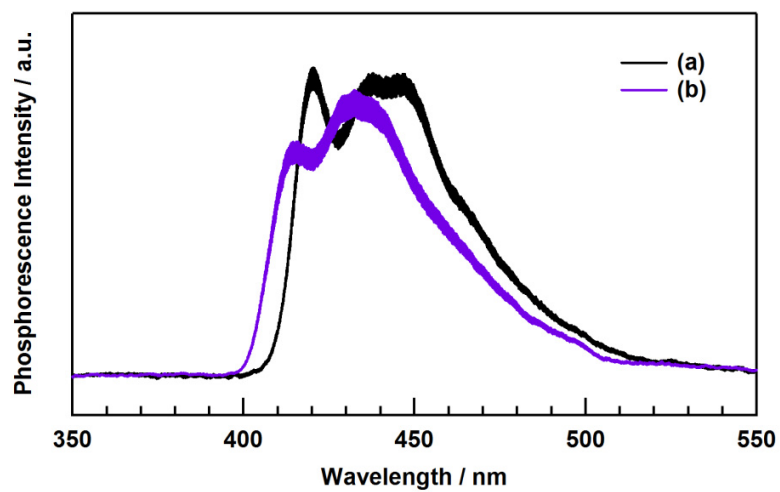
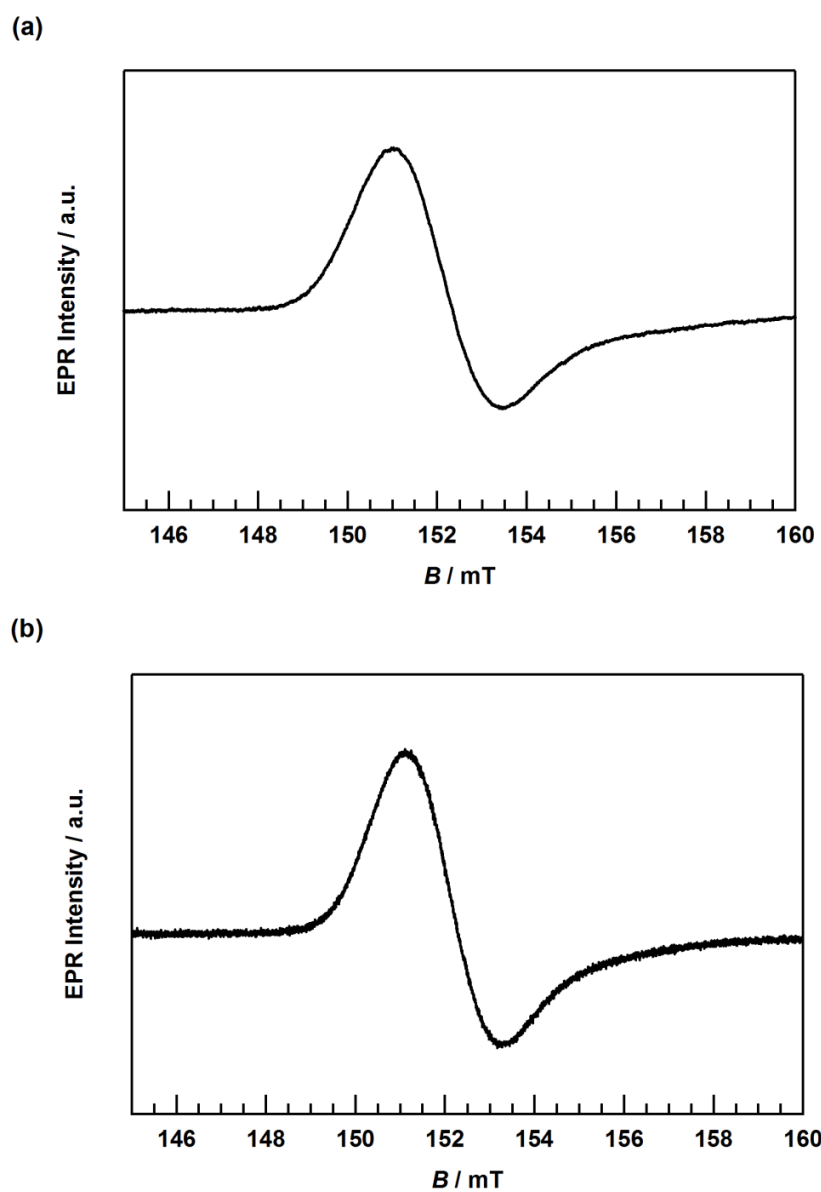


Fig. S4 Phosphorescence ( $\lambda_{\text{exc}} = 313 \text{ nm}$ ) spectra of (a) MePABA and (b) PAMeB in ethanol at 77 K. The sample solutions were prepared at a concentration of  $1 \times 10^{-3} \text{ mol dm}^{-3}$  and  $6 \times 10^{-4} \text{ mol dm}^{-3}$  for MePABA and PAMeB, respectively.



**Fig. S5** EPR spectra of (a) MePABA and (b) PAMeB in ethanol at 77 K. The sample solutions were prepared at a concentration of  $1 \times 10^{-2} \text{ mol dm}^{-3}$  and  $6 \times 10^{-3} \text{ mol dm}^{-3}$  for MePABA and PAMeB, respectively.