

Fluorescence sensing of microcracks based on cycloreversion of dimeric anthracene moiety

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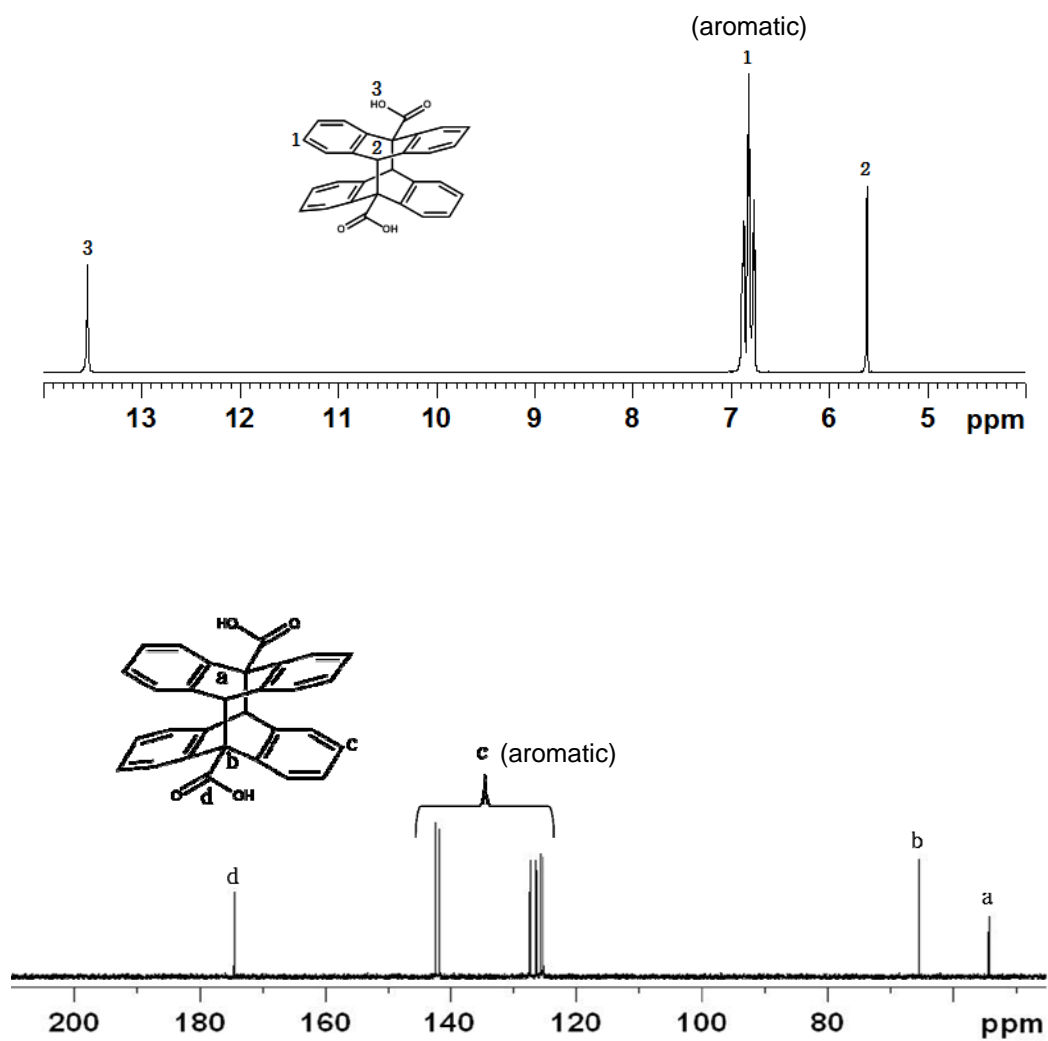


Fig. S1 ^1H and ^{13}C NMR spectra of Di-AC.

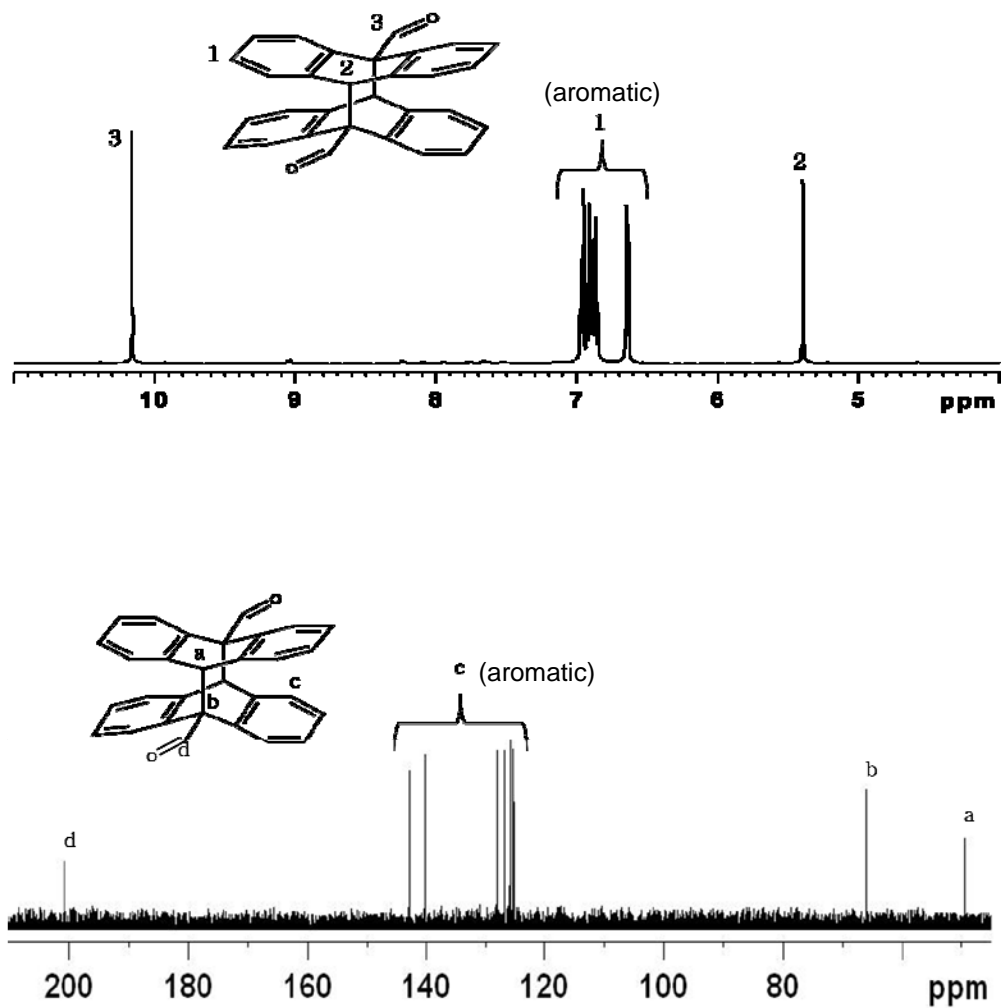


Fig. S2 ^1H and ^{13}C NMR spectra of Di-AA.

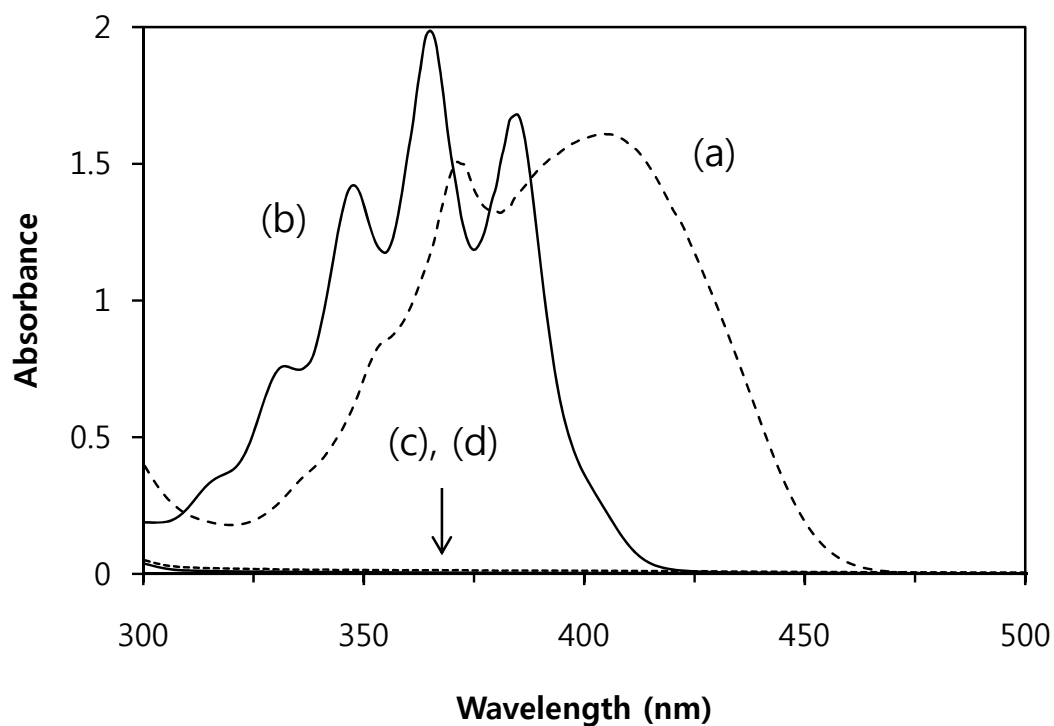


Fig. S3 UV-vis spectra of (a) AA and (b) AC, (c) Di-AA, and (d) Di-AC. Each sample was prepared by dissolving 1.0 mg of a compound in 20 mL of NMP.

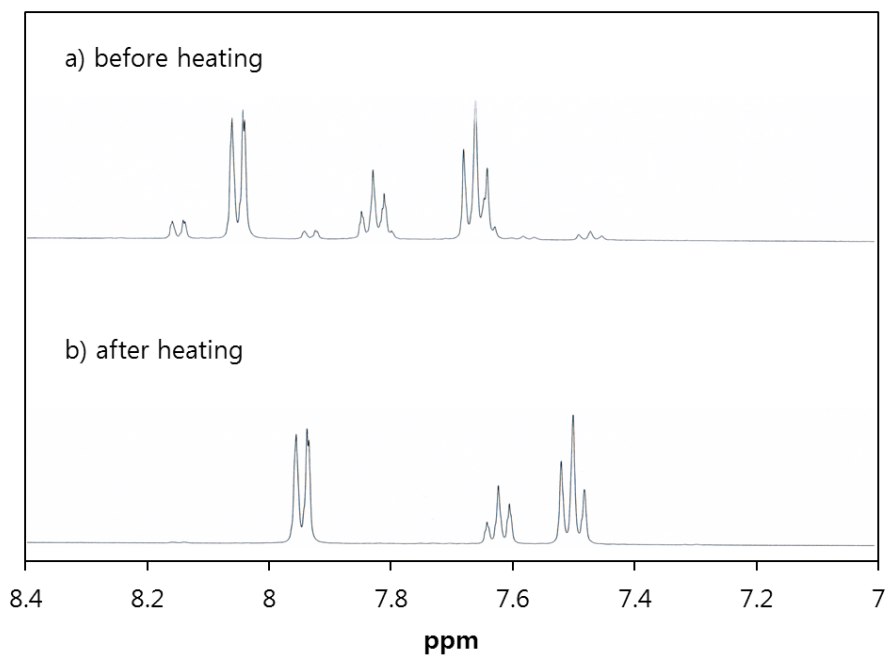


Fig. S4 ¹H NMR spectra of a) BPO and b) the product obtained by heating of BPO in DMSO-d₆ at 85 °C for 4 h.

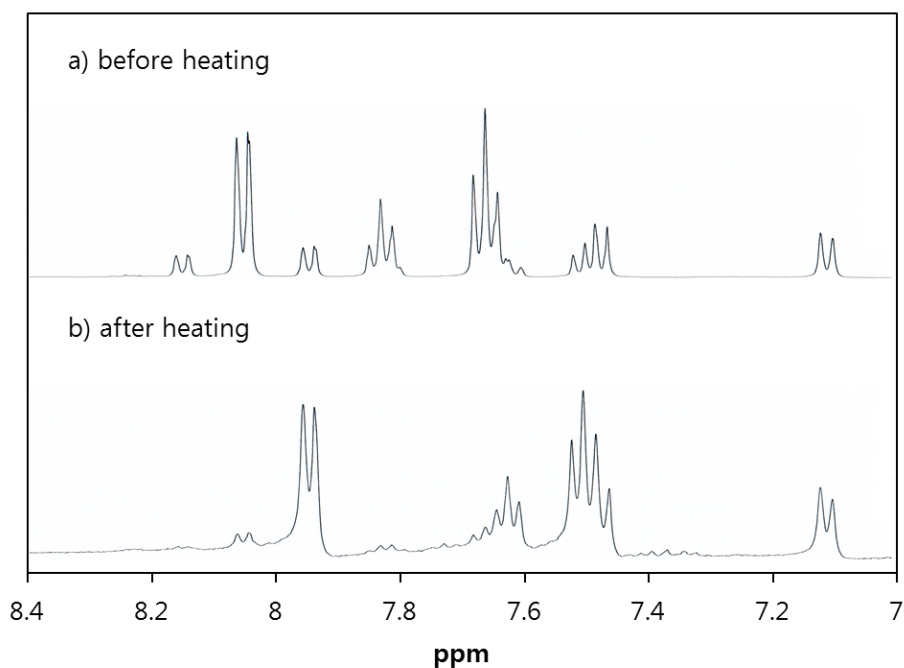


Fig. S5 ¹H NMR spectra of Poly-AC containing BPO a) before and b) after heating at 85 °C for 4 h. A small amount of decomposed products of BPO exists before the heating: it is considered that a part of BPO decomposed during the preparation processes of the polymer film such as dissolution in NMP, casting, and solvent removal at 45 °C. Spectrum b) clearly shows that BPO almost disappeared after the heating.

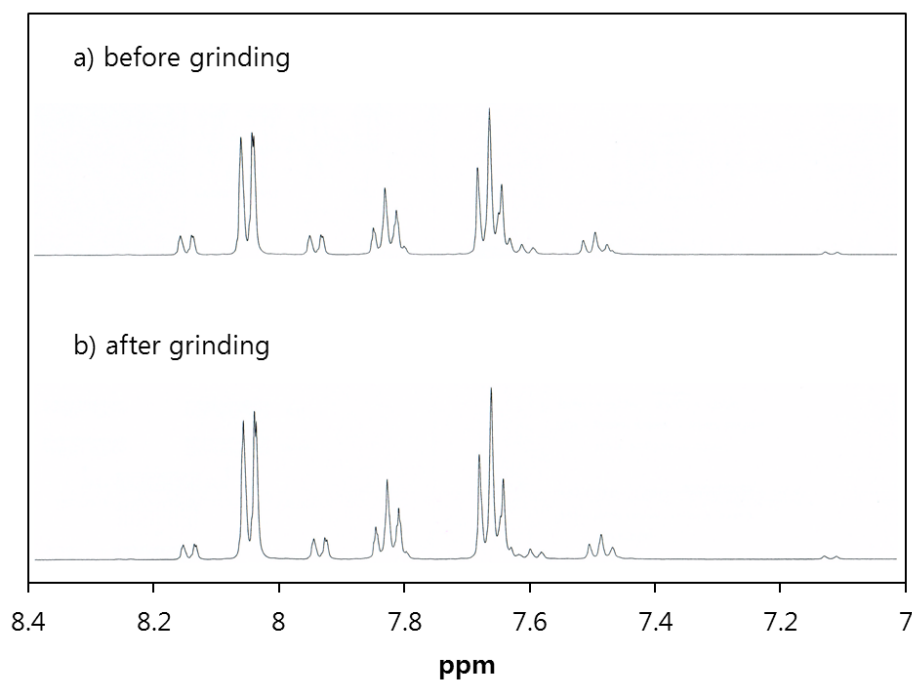


Fig. S6 ¹H NMR spectra of Poly-AC containing BPO a) before and b) after grinding at room temperature for 4 h. A small amount of decomposed products of BPO existed before heating: it is considered that a part of BPO decomposed during the preparation processes of the polymer film such as dissolution in NMP, casting, and solvent removal at 45 °C. Spectrum b) clearly shows that the decomposition of BPO did not occur during the grinding.

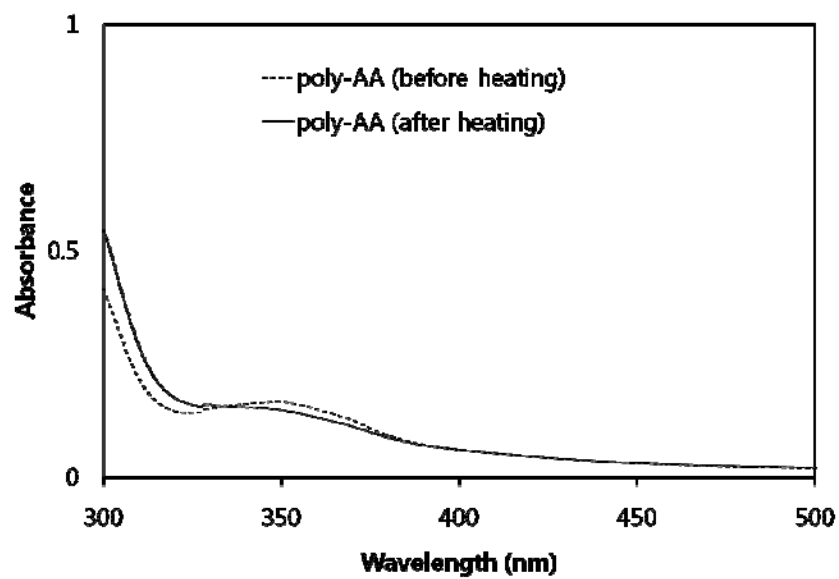


Fig. S7 UV-vis spectra of a Poly-AA film before and after heating at 85 °C for 4 h.

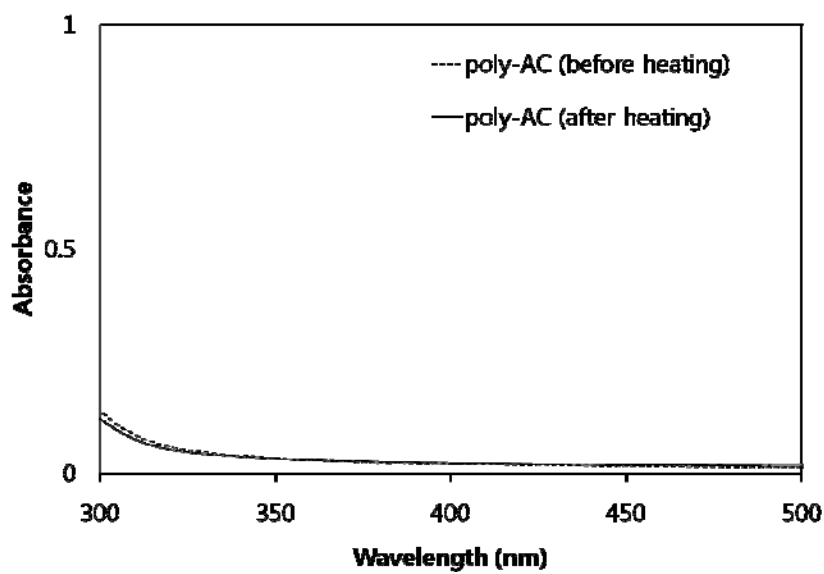


Fig. S8 UV-vis spectra of a Poly-AC film before and after heating at 85 °C for 4 h.

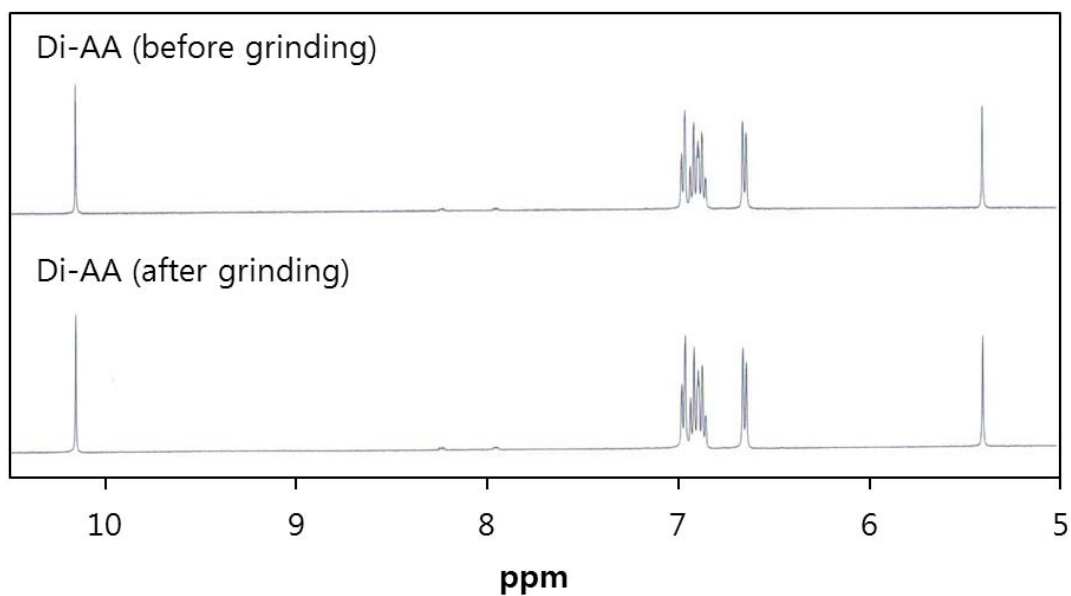


Fig. S9. ^1H NMR spectra of Di-AA before and after grinding in a mortar at room temperature for 4 h.

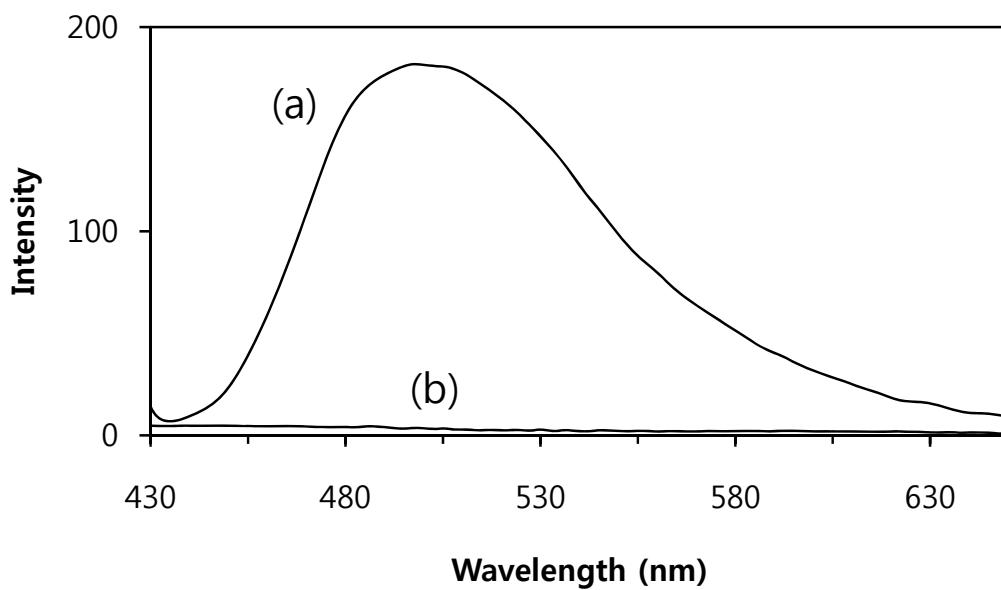


Fig. S10 Emission spectra of PVA films containing 1wt% of (a) AA and (b) Di-AA. Excitation wavelength was 380 nm.

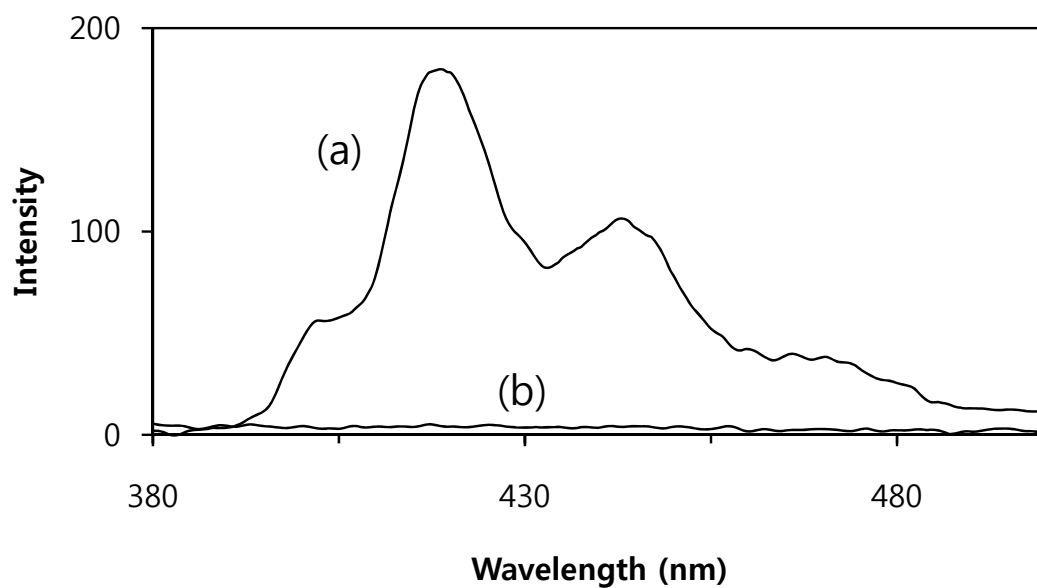


Fig. S11 Emission spectra of PVA films containing 1wt% of (a) AC and (b) Di-AC. Excitation wavelength was 350 nm.