Electronic Supplementary Material (ESI) for New Journal of Chemistry

Supplementary Information

Organic nanoparticle of 9,10-Bis(phenylethynyl)anthracene: a novel electrochemiluminescence emitter for sensory detection of amines

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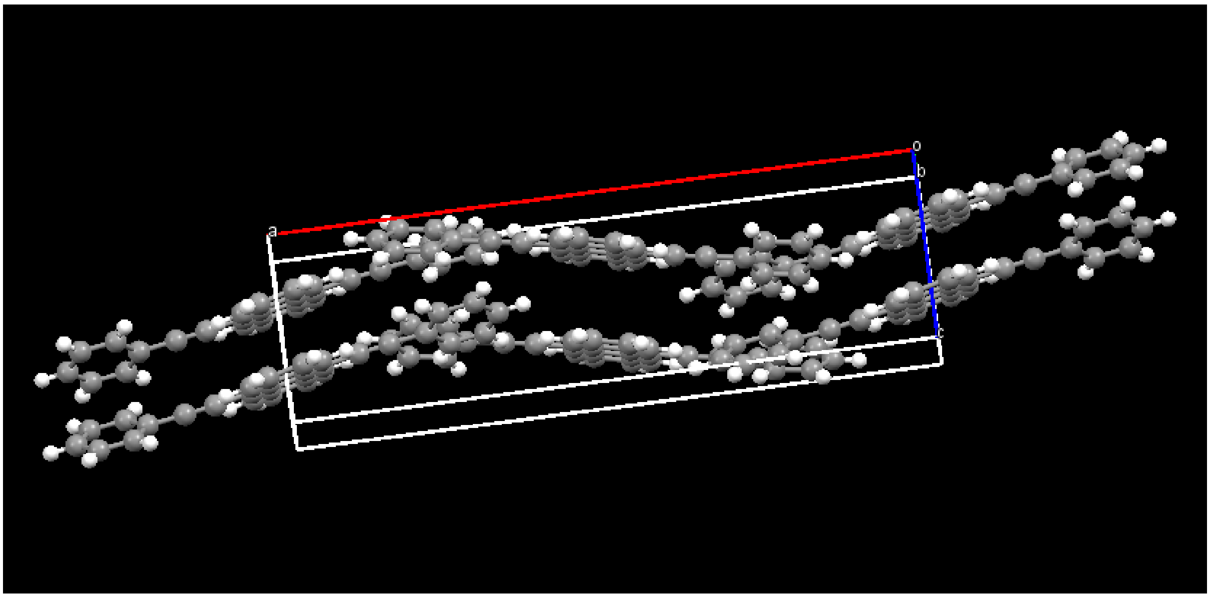

Fig. S1. Anthracene-anthracene pair exhibit a face-to-face stacking mode in β-phase of BPA crystal. (Reference: W. Hu *et al*, Appl. Phys. Lett., **2010**, 96, 143302)

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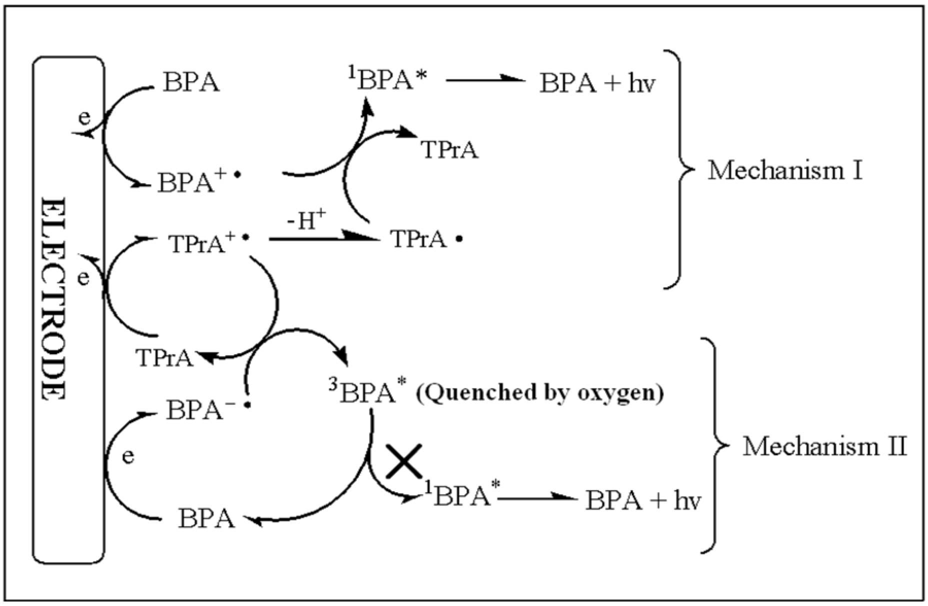

During intermittent CV scanning from -0.9 to 0.75 V, BPA is electroreduced and produces relatively stable BPA-• anion radicals, which then react with newly formed TPrA+• cation radicals, yielding the excited-state BPA species that may produce ECL emission according to SI Fig. S2, mechanism II. However, in this work, all experiments were conducted in the presence of oxygen because the solution was not degassed with inert gas such as nitrogen or argon. The possibly existing triplet BPA excited state should even be quenched by ground-state oxygen (triplet state), potentially cutting off mechanism II.

Fig. S2. Proposed mechanism for BPA nanoparticles ECL emission.

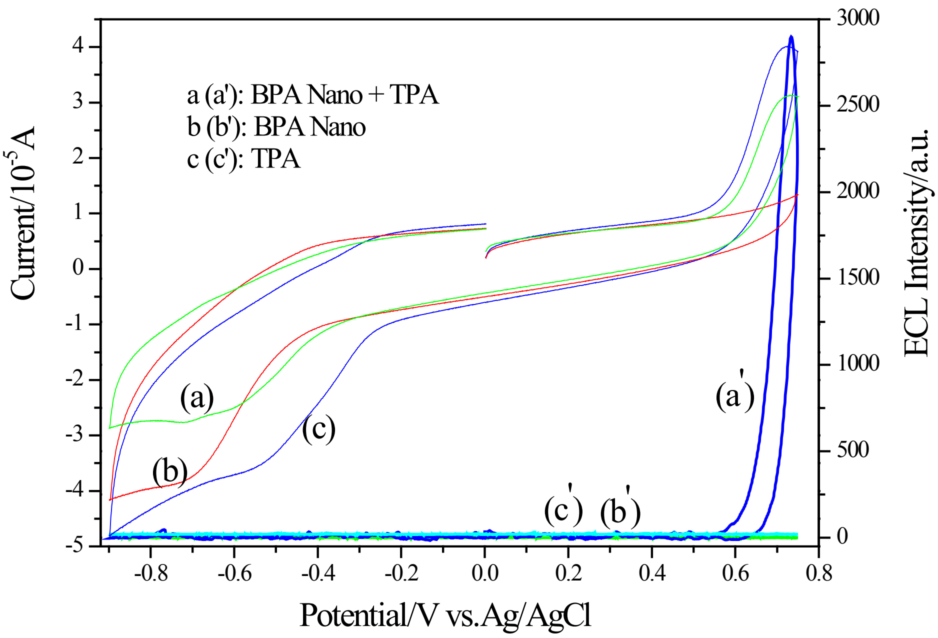

Fig. S3. ECL intensity-potential curve (a').