

Supporting Information

Intense Green-light Emission from 9,10-bis (4-(1,2,2-triphenylvinyl)styryl)anthracene Emitting Electroluminescence Devices

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The synthetic route of TPE-An powders

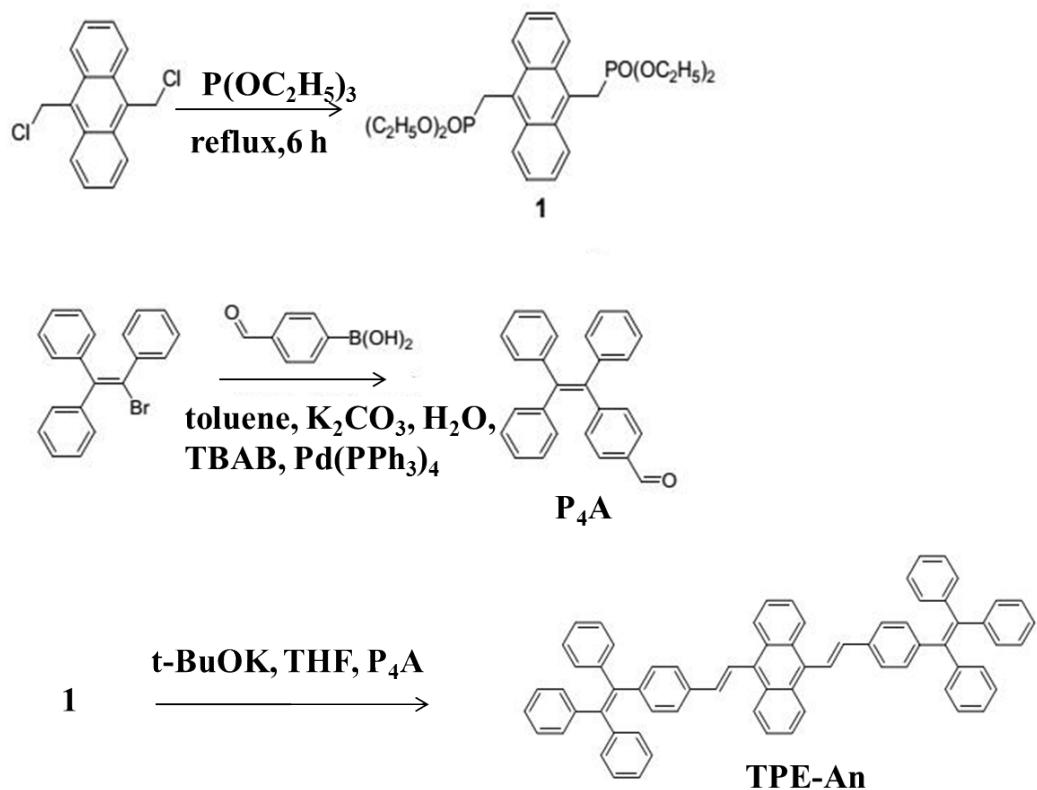


Figure S1. The synthetic route of TPE-An powders

Representative mid-infrared spectrum of TPE-An powders

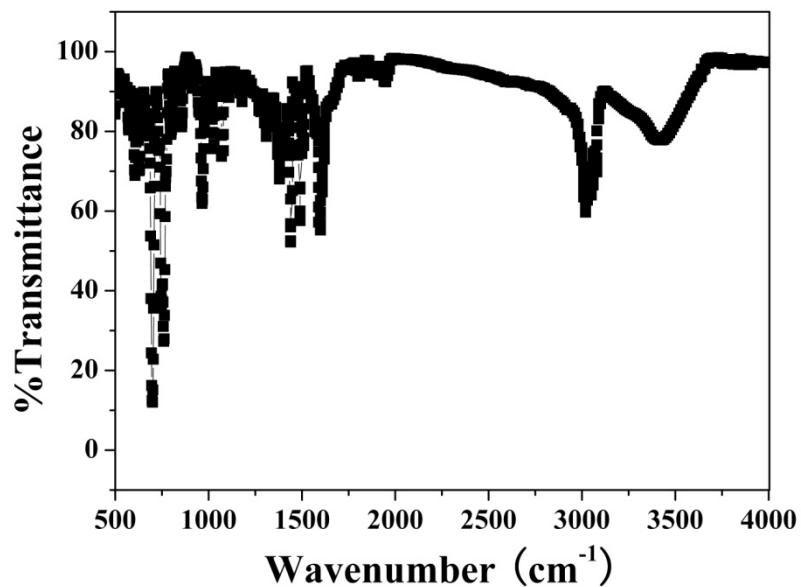


Figure S2. Representative mid-infrared spectrum of TPE-An powders.

Typical ^1H NMR spectrum of TPE-An in CDCl_3

^1H NMR(400 MHz, CDCl_3) δ (ppm): 8.42-7.35 (dd, 4H); 7.90-7.84 (d, 2H); 7.51-7.42 (m, 8H); 7.26-7.05 (m, 34H); 6.90-6.83 (d, 2H).

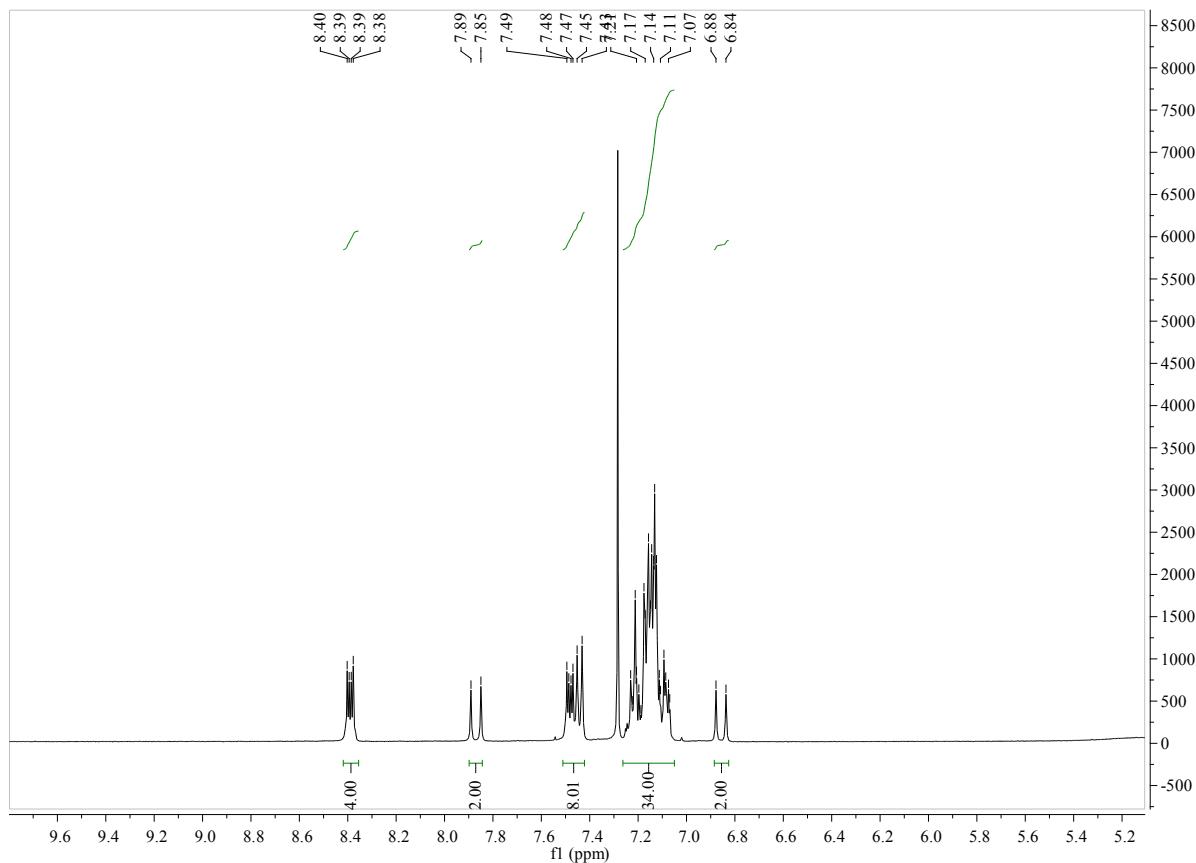


Figure S3. Typical ^1H NMR Spectrum of TPE-An powders.

Typical PL spectrum of TPE-An powders

It is found that the TPE-An powders emit a strong green light at 504 nm, which is close to that (514 nm) of TPE-An film.

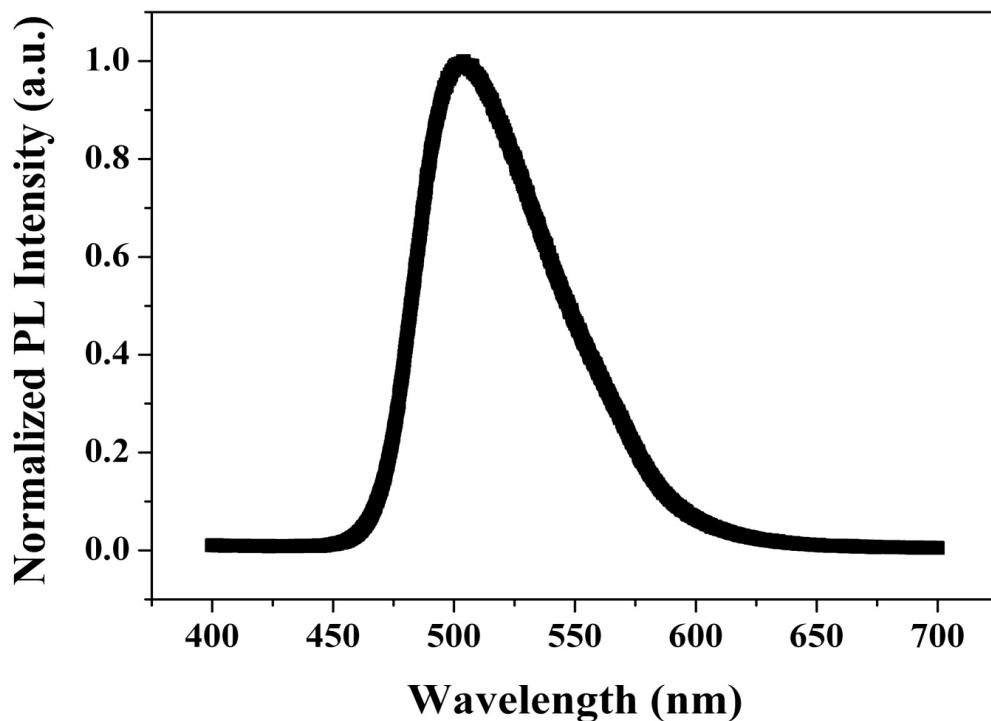


Figure S4. Typical PL spectrum of TPE-An powders.

Surface morphology of TPE-An (15 nm) film on ITO glass substrate

The morphology of TPE-An(15 nm) film on ITO glass substrate is shown in Fig. S5. The surface roughness of TPE-An film is about 4 nm.

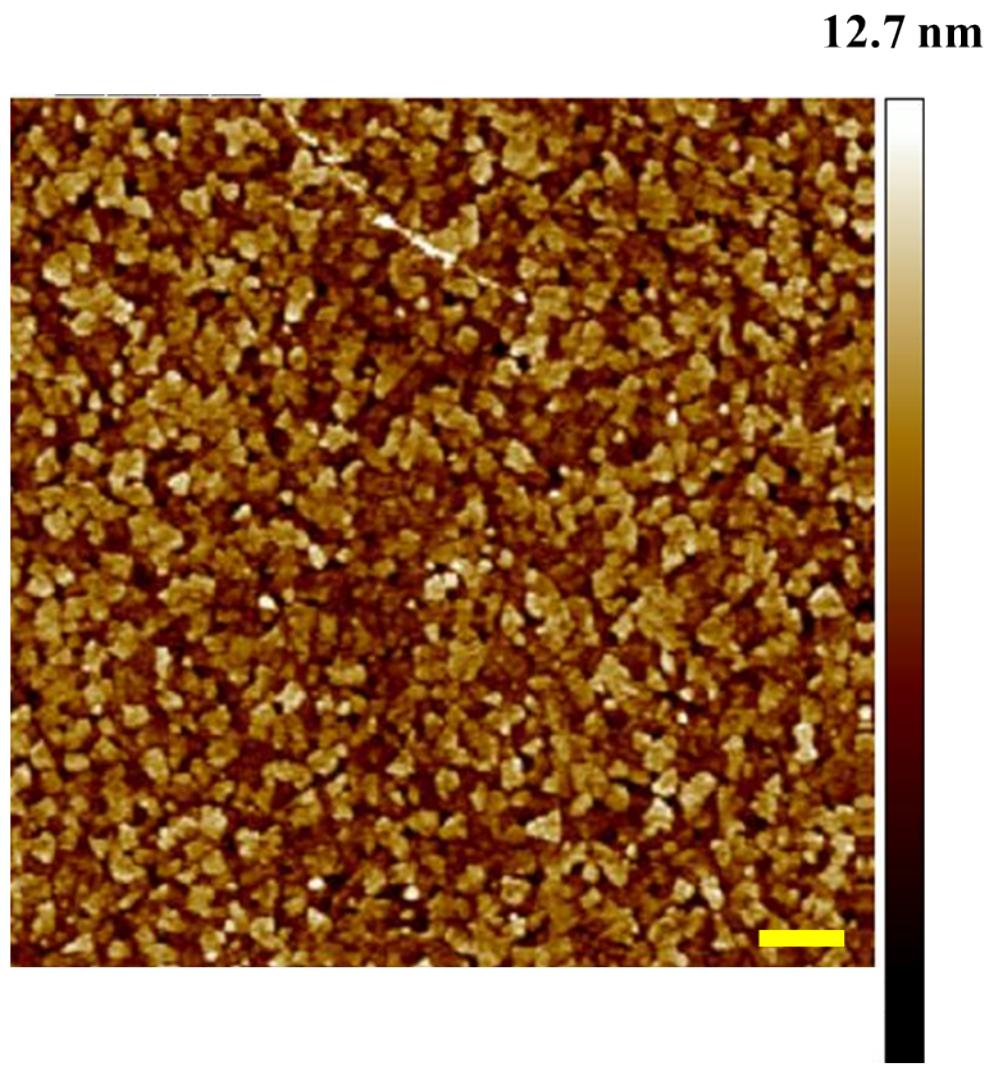


Figure S5. Surface morphology of TPE-An(15 nm) film on ITO glass substrate. Scale bar is 1 μ m.

The work function of TPE-An film

The ultraviolet photoelectron spectroscopy (UPS) technique was used to determine the work function of TPE-An film (100 nm). Depending on the low kinetic energy cut-off, the work function of the as-grown TPE-An film was worked out to be 4.61 ± 0.01 eV.

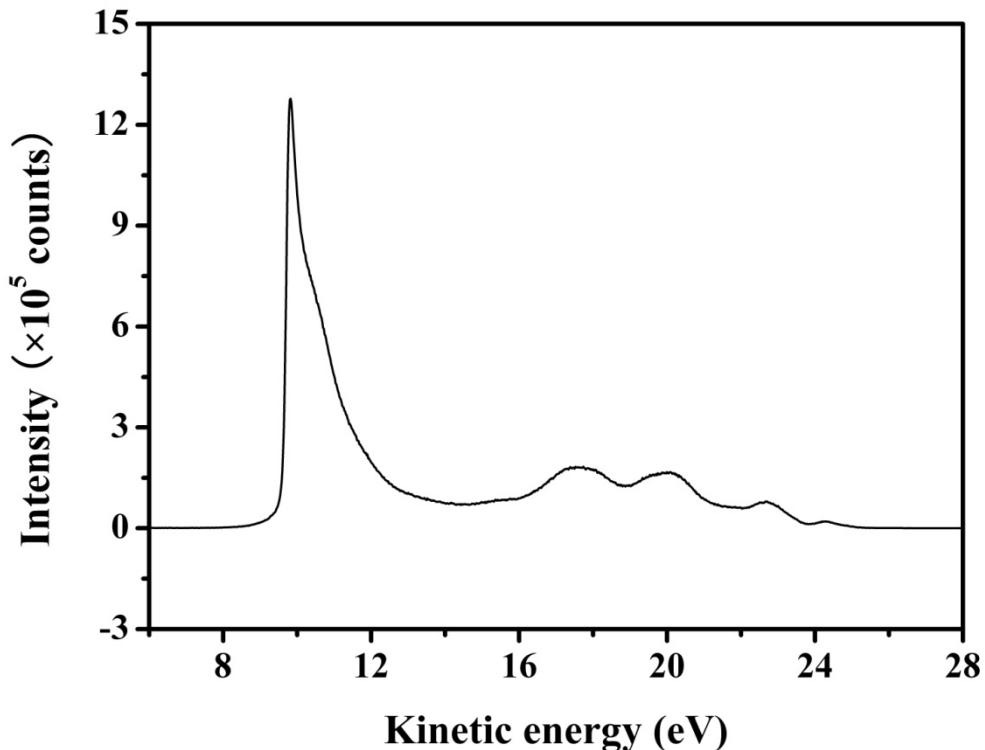


Figure S6. Typical UPS spectrum of the as-grown TPE-An film.

The I-V curves of the configuration ITO/C₆₀ (2.5 nm)/TPE-An(100 nm)

The I-V curves of the multilayered film were measured by Keithley 4200 system. It is found in Figure S7 that the I-V curve of the configuration ITO/C₆₀ (2.5 nm)/TPE-An (100 nm) are nearly linear, which proves a quasi-ohmic contact has been established between the ITO and TPE-An film.

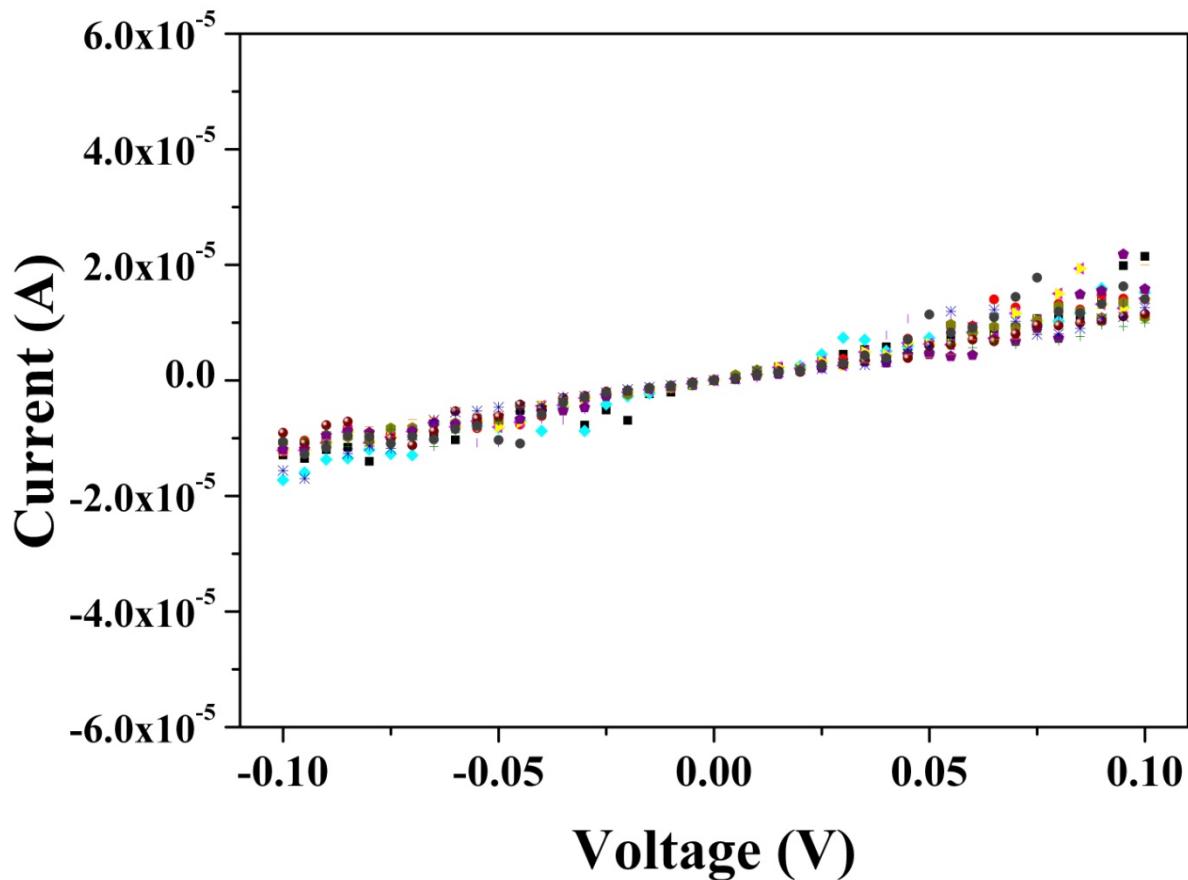


Figure S7. The I-V characteristics of ITO/C₆₀ (2.5 nm)/TPE-An (100 nm).

The stabilities of the EL devices on glass and flexible PET substrate

The stabilities of devices on glass and flexible PET substrate and their half lifetimes are shown in the Fig. S8. The half lifetime at an initial luminance of 1000 cd/m^2 (L_{01}) is 120 h for EL device on glass and the half lifetime at an initial luminance of 200 cd/m^2 (L_{02}) is 38 h, respectively.

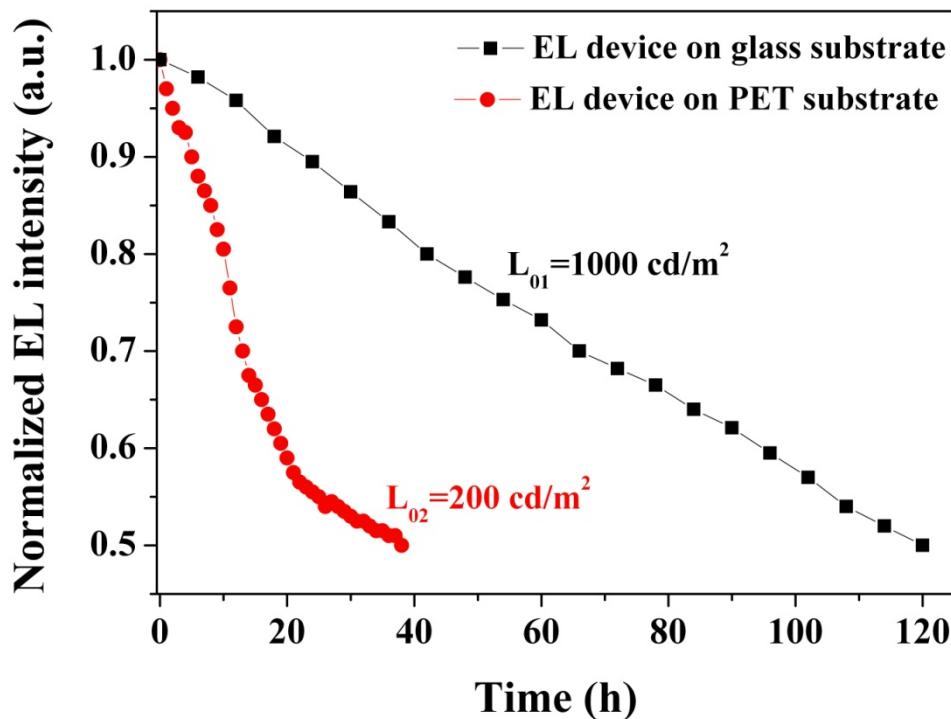


Figure S8. The curves of normalized luminance to the work time of the EL device on glass and PET substrate. Initial luminance is chosen to be respectively 1000 cd/m^2 (L_{01}) and 200 cd/m^2 (L_{02}) for the EL device on glass and PET substrate.