

## Electronic Supplementary Information (ESI)

### **Single-phase excitation-wavelength-independent nitrogen doped graphene quantum dots for fabrication of white light-emitting diodes (WLEDs)**

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### **Specific Characterization Methods**

The specimens were examined in a TECNAI 10 PHILIPS transmission electron microscope (TEM) (Amsterdam, Holland), which operated at the accelerating voltage of 100 kV. The fourier transform infrared (FTIR) spectra were performed by an Avatar 360 Fourier transform infrared spectrometer (Thermo Nicolet Co., USA) using KBr as background with a scan range between 400  $\text{cm}^{-1}$  and 4000  $\text{cm}^{-1}$ . The X-ray photoelectron spectra (XPS) were tested with THERMO-X-ray photoelectron spectrometer (Thermo Electron Co., USA). Ultraviolet-visible (UV-vis) spectra of N: GQDs were recorded on a GENESYS 10 UV-vis spectrometer (Beijing, China). The photoluminescence spectra (PL) of N: GQDs (the concentration in ethanol solvent was 20%) were recorded on a LS55 fluorescence spectrophotometer (Perkin Elmer Co., USA) using 360 nm excitation in a scan speed of 500 nm/s and slit width of 5 nm. The performance of the LEDs was tested and collected in an HP9000 LED photochromic and electrical integrated testing system (Hongpu, Hangzhou Hongpu Optoelectronics Technology Co., Ltd).