

Supporting Information

Gate-Tunable All-Inorganic QLED with Enhanced Charge Injection Balance

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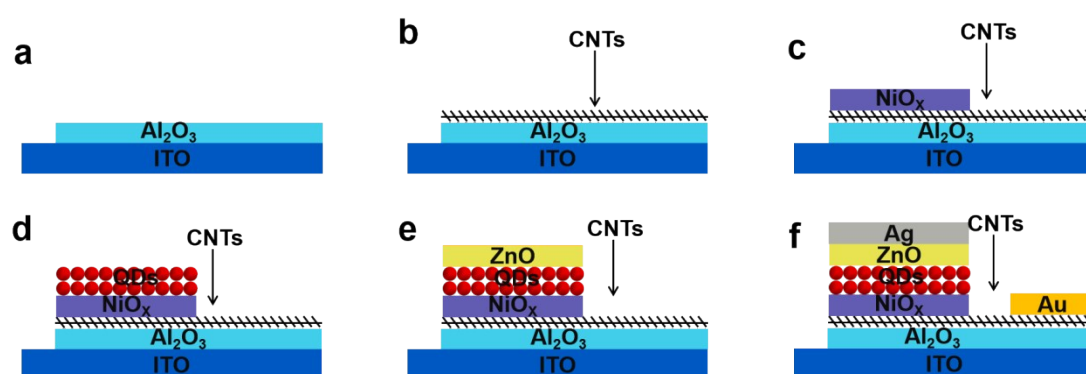


Fig. S1 The technological preparation process of 3-terminal all-inorganic QLED. This is fabrication steps of 3-terminal all-inorganic QLED, **1a** shown the deposition of Al_2O_3 dielectric layer by ALD on glass substrate. The source network was formed by spin-coated CNTs solution and the other functional layers of QLED were all deposited by solution process demonstrated in Fig. S1b-e. The procedure illustrated in Fig. S1f was the thermally evaporation of source contact and drain electrodes.

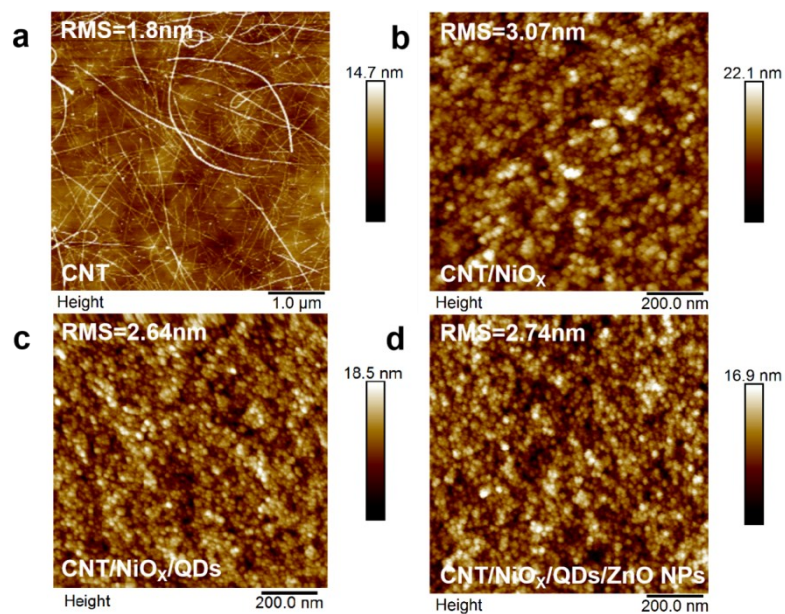


Fig. S2. AFM characterizations of the multilayers of CNTs, CNTs/NiO_x, CNTs/NiO_x/QDs and CNTs/NiO_x/QDs/ZnO NPs films with root-mean-square (RMS) surface roughness is 1.8nm, 3.07nm, 2.64nm and 2.74nm, respectively.

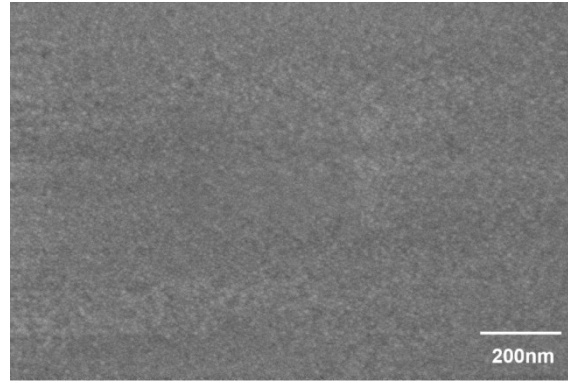


Fig. S3. The scanning electron microscope (SEM) of QDs, which shown a flat and compact film.

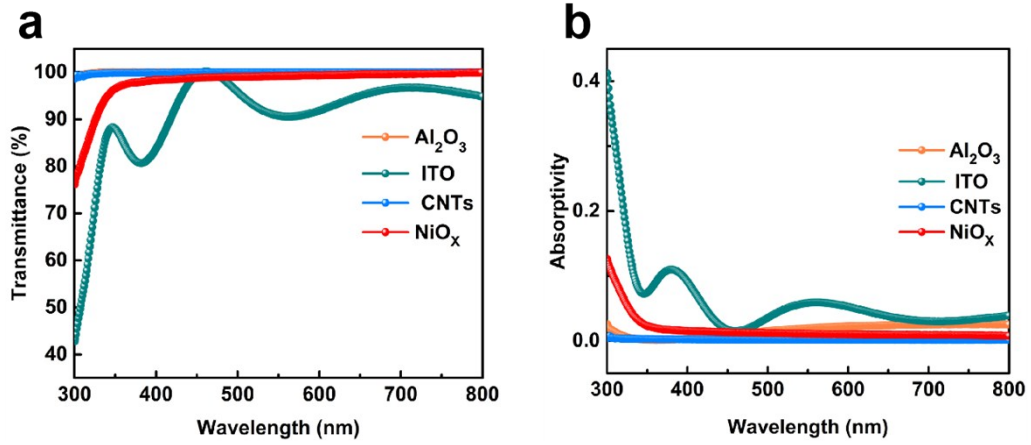


Fig. S4 (a), (b) The transmittance and absorbance spectra of ITO, Al₂O₃, CNTs, NiO_x film deposited on glass substrate of the wavelength range is between 300 to 800 nm.

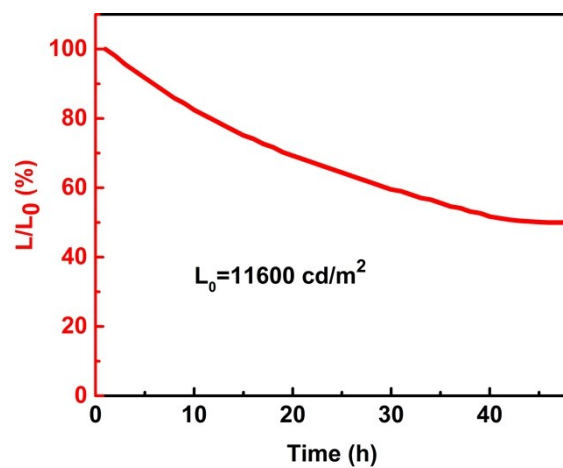


Fig. S5 The stability when the gate-tunable all-inorganic QLED was switch on continuously for a long period.