Supporting Information

Self-formed C-Dots-Based 2D Polysiloxane with High Photoluminescence Quantum Yield and Stability

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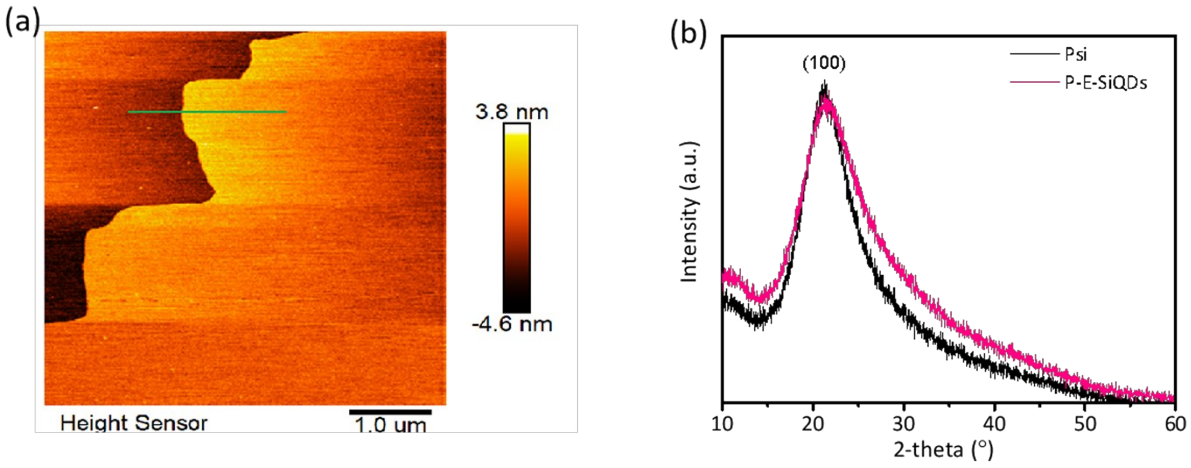

Figure S1. (a) The representative AFM image of quasi-2-dimensional dual-fluorescence P-E-Si-CDs. (b) XRD patterns of Psi and dual-fluorescence P-E-Si-CDs.

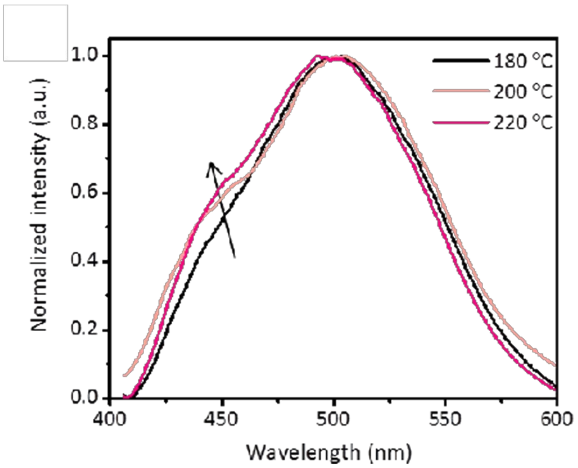

Figure S2. The fluorescence spectra of P-E-Si-CDs synthesized at different temperature under 395 nm excitation.

Table S1. Fitting results of the afterglow lifetimes of the P-E-Si-CDs at 440 nm and 515 nm under 395 nm excitation.

Emission(nm)	t1(ns)	B1(%)	t2(ns)	B2(%)	t_{avg}(ns)
440	2.20	40.62	1.63	59.38	1.86
515	7.04	27.37	2.81	72.63	3.97

Table S2. EDS-analysed element contents of C, N, O, S in Psi and dual-fluorescence P-E-Si-CDs.

Elements	Psi	P-E-Si-CDs
C	43.98	56.36
N	18.54	7.93
O	24.98	23.48
Si	12.50	12.23

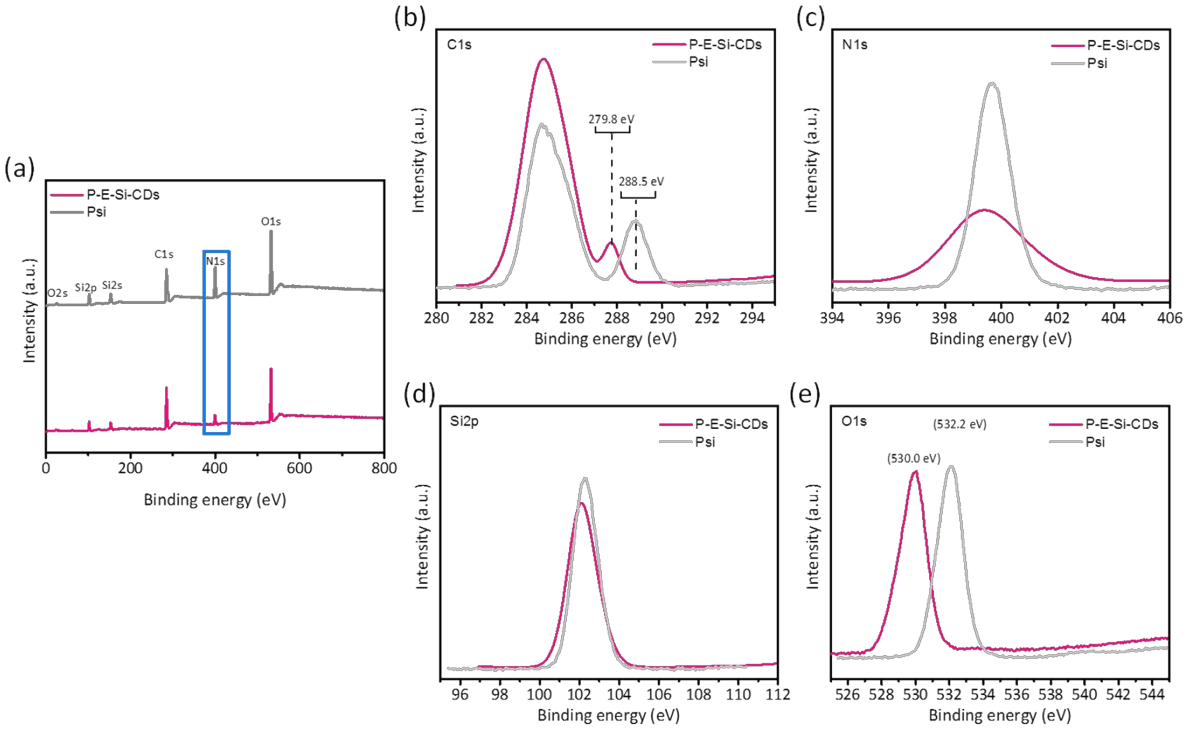

Figure S3. (a) XPS spectra, High-resolution XPS (b) C1s, (c) N1s, (d) Si2p and (f) O1s spectra of Psi and dual-fluorescence P-E-Si-CDs.

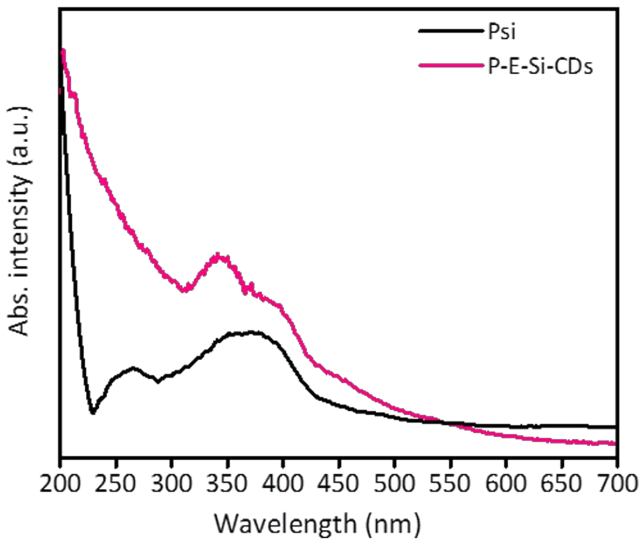

Figure S4. UV-Vis absorption spectra of Psi and dual-fluorescence P-E-Si-CDs.

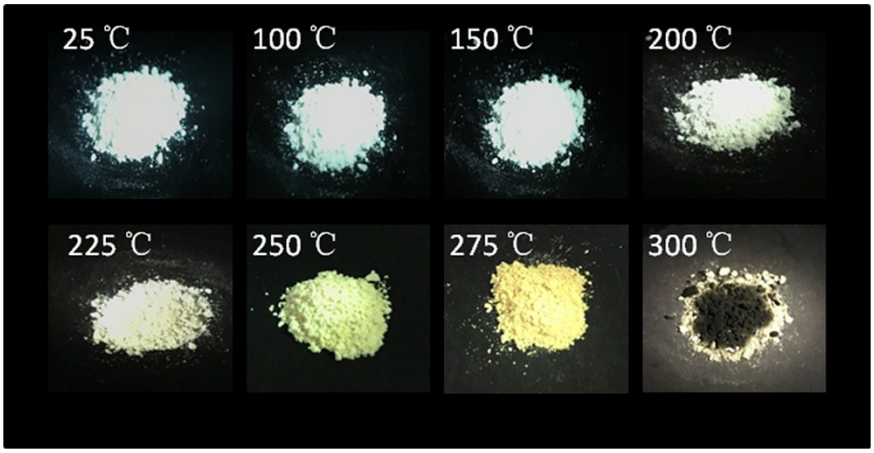

Figure S5. The fluorescence photographs under the varying treated temperature.

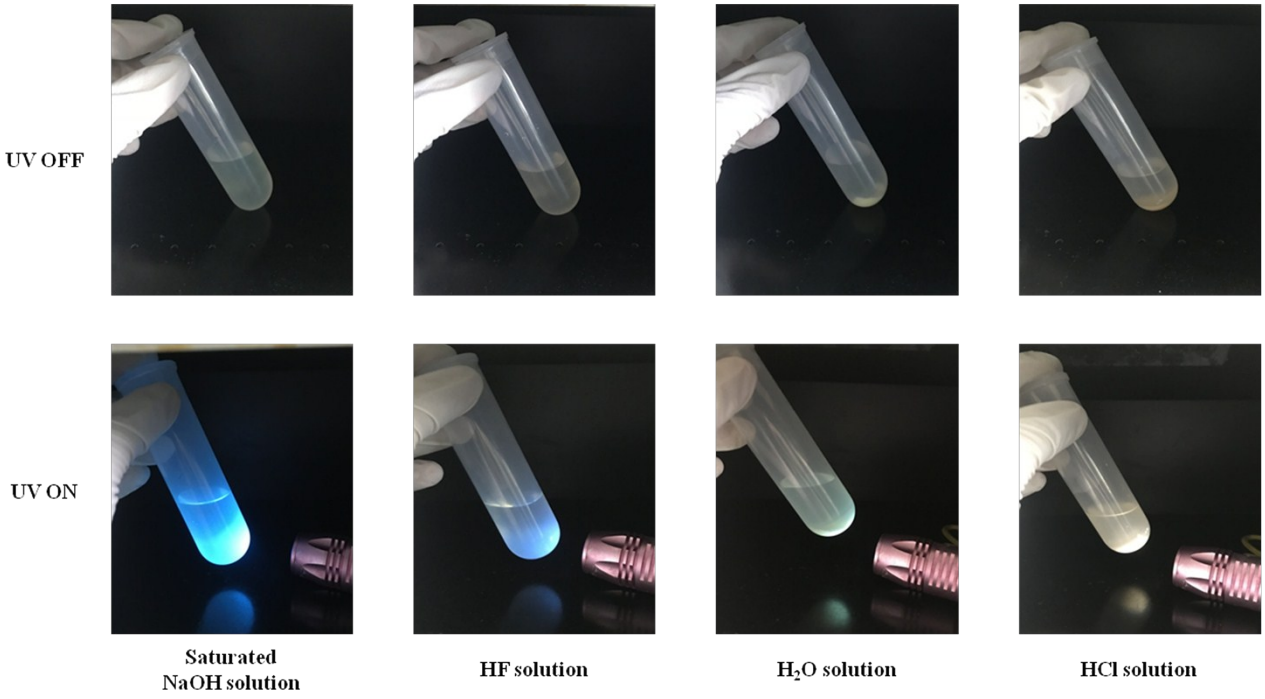

Figure S6. Photographs of P-E-Si-CDs in saturated NaOH solution, HF solution, water and concentrated HCl (37%) under UV irradiation or not.

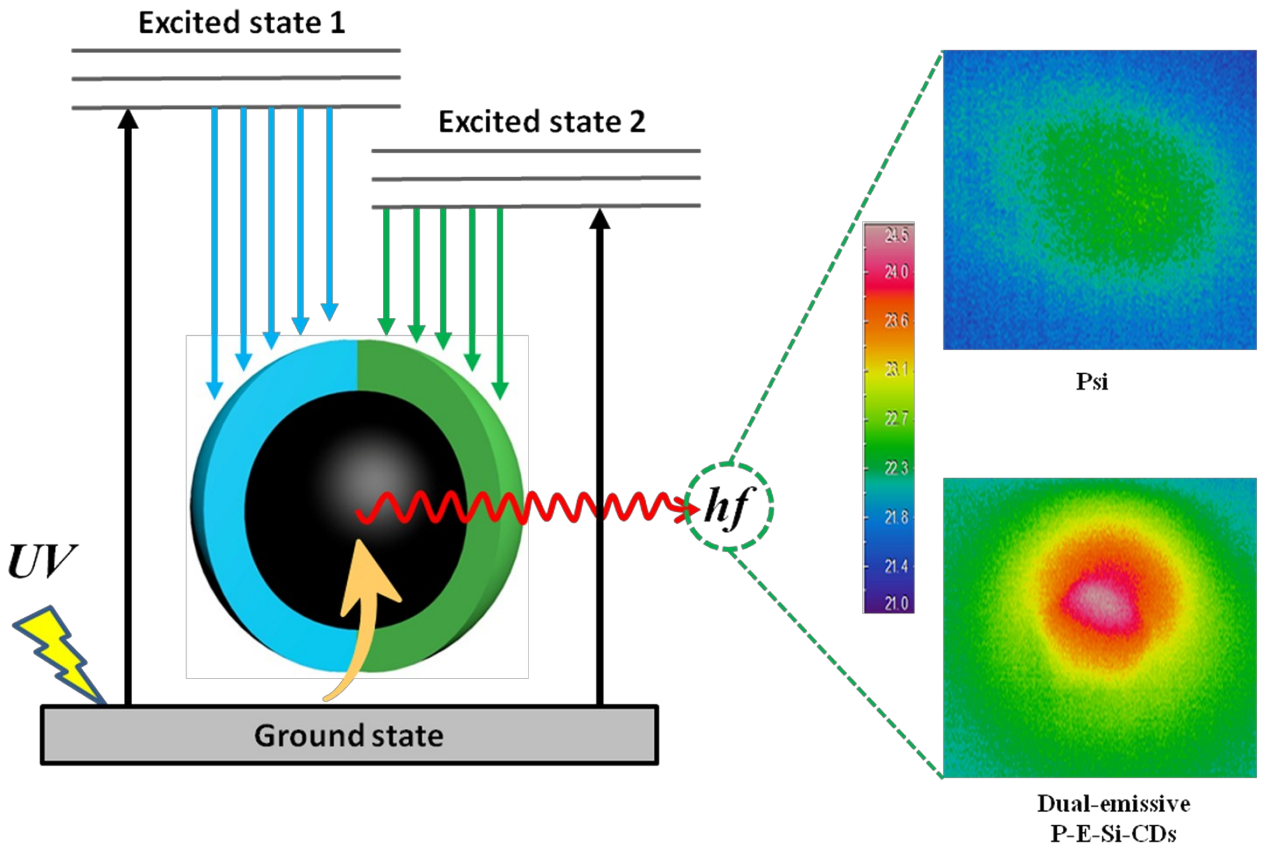

Figure 7. The mechanism illustration of P-E-Si-CDs with the function of UV absorption (Left), and the infrared images (right) of Psi and dual-fluorescence P-E-Si-CDs.

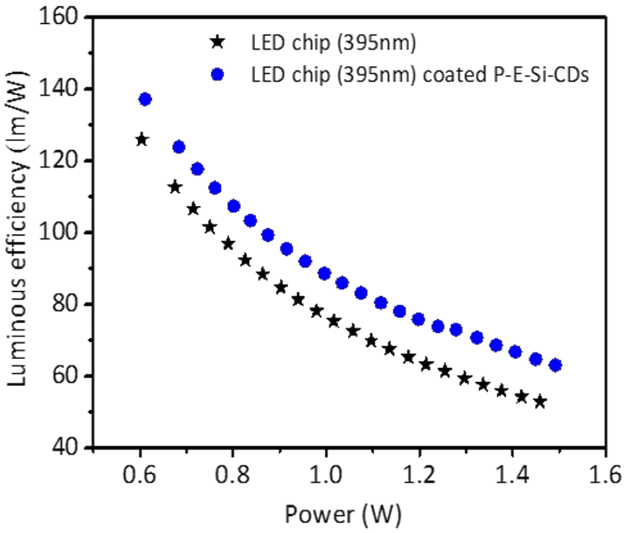

Figure S8. Luminous efficiency of warm WLED based on UV-emissive LED chip (λ_{peak}: 395 nm) and dual-fluorescence P-E-Si-CDs along with varying electric power.