Supporting Information

Preparation and photoluminescent properties of magnetic Ni@SiO_2-CDs fluorescent nanocomposites

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Table S1 Photophysical Properties of CDs and Ni@SiO_2-CDs. Decay times τ_1, τ_2 and τ_3, and the relative amplitude (%).

Compound	Phase State	Excitation Wavelength /nm	Monitored Emission Wavelength /nm	τ_1/ns	τ_2/ns	τ_3/ns
CDs	ethanol	330	420	1.21(5.31%)	5.27(34.33%)	12.33(60.36%)
			440	1.16(2.31%)	5.18(25.59%)	13.08(72.09%)
			460	1.76(2.47%)	6.32(23.45%)	14.14(74.08%)
		360	420	1.09(15.41%)	4.49(41.81%)	11.92(42.78%)
			440	1.25(9.82%)	5.23(31.00%)	13.80(59.18%)
			460	1.36(9.89%)	5.69(27.20%)	14.18(62.92%)
Ni@SiO_2-CDs	ethanol	330	420	1.07(16.65%)	5.03(53.30%)	11.27(30.05%)
			440	1.04(16.32%)	4.88(43.54%)	10.66(40.14%)
			460	1.06(17.78)	5.57(50.41%)	12.21(31.81%)
		360	420	1.00(17.47%)	4.78(42.73%)	10.26(39.80%)
			440	0.96(17.35%)	4.97(40.53%)	10.84(42.12%)
			460	0.97(18.91%)	5.31(41.08%)	11.42(40.01%)
	Solid	330	420	2.94(25.45%)	8.77(74.55%)	—
			440	2.81(28.57%)	8.38(71.43%)	—
			460	3.14(24.97%)	9.10(75.03%)	—
		360	420	2.96(27.21%)	8.84(72.79%)	—
			440	3.17(25.70%)	9.17(74.30%)	—
			460	3.23(24.72%)	9.49(75.28%)	—

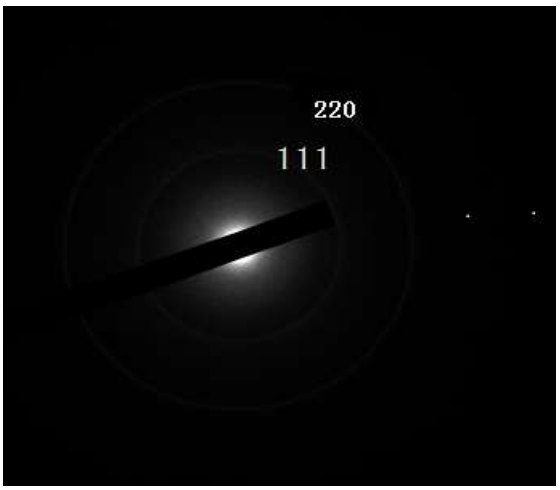
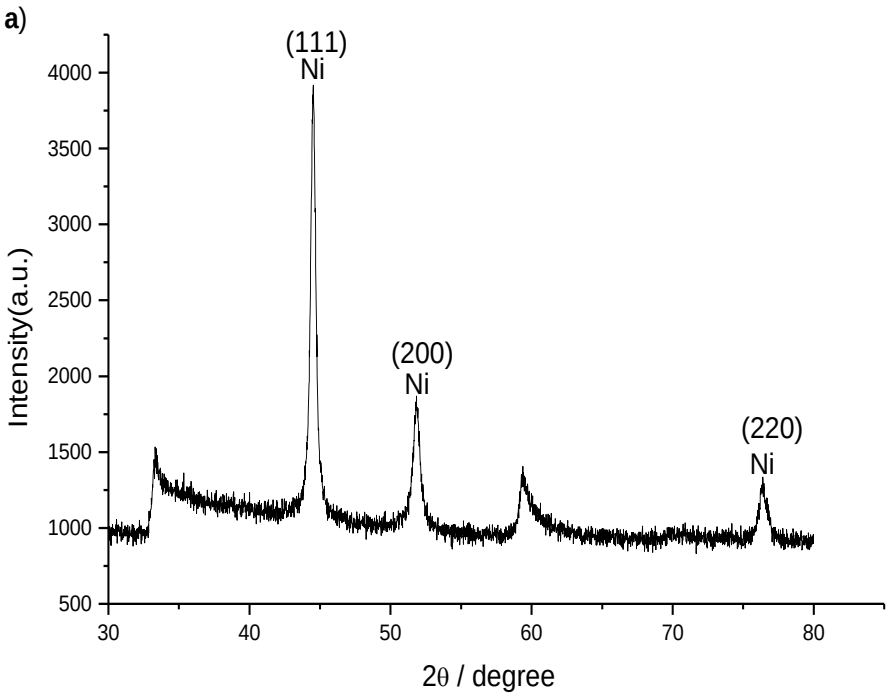
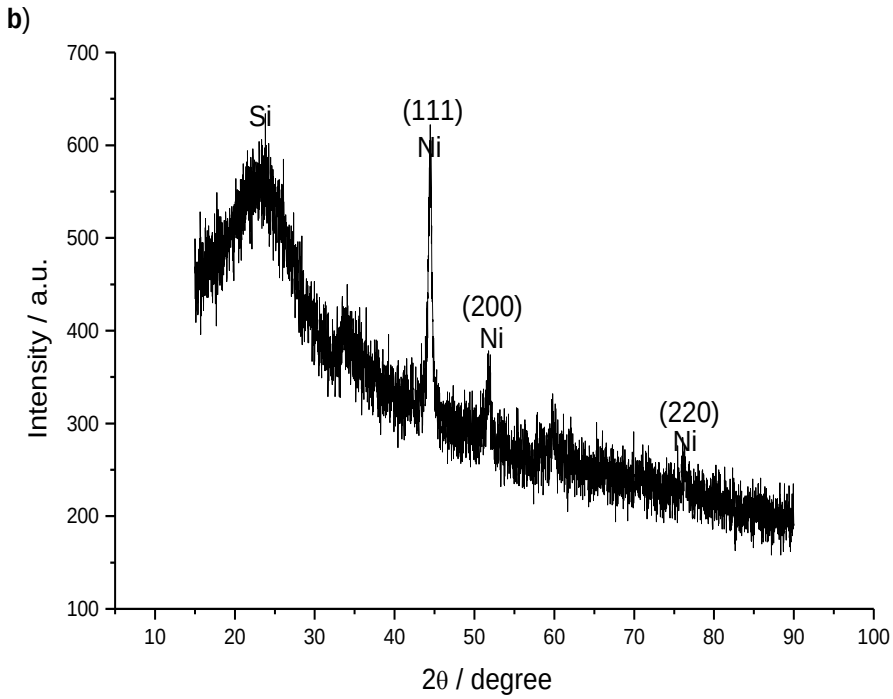


Figure S1. A selected area electron diffraction (SAED) pattern of nickel nanoparticles





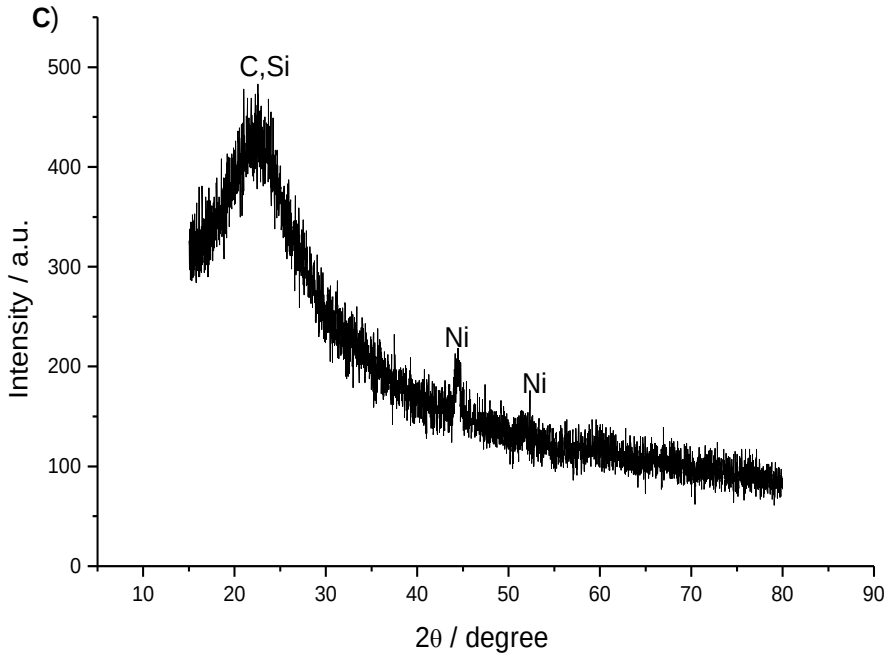


Figure S2. XRD spectra of (a) Ni, (b) Ni@SiO_2 and (c) Ni@SiO_2-CDs.

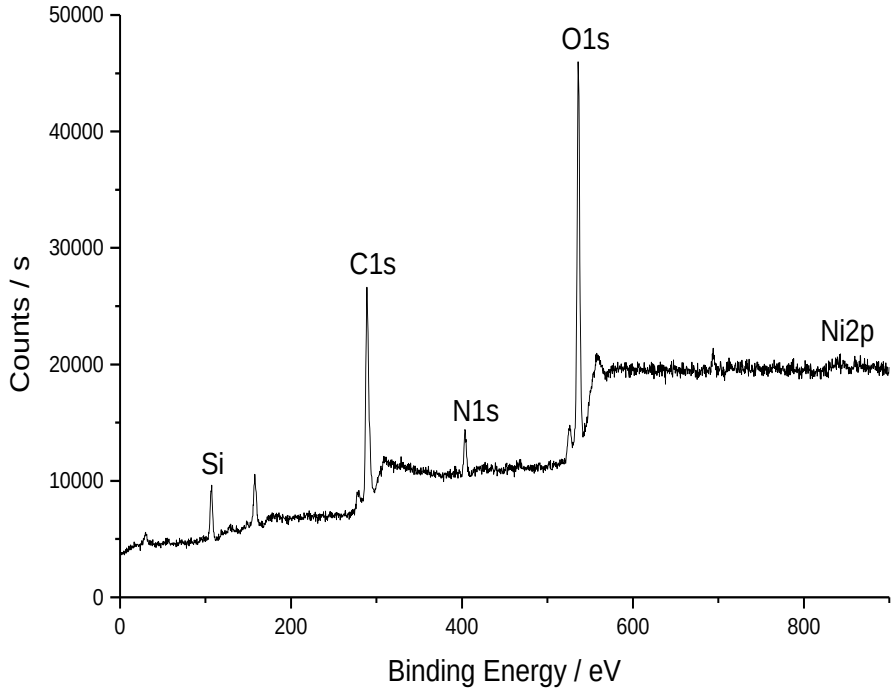


Figure S3. XPS survey of theNi@SiO_2-CDs.

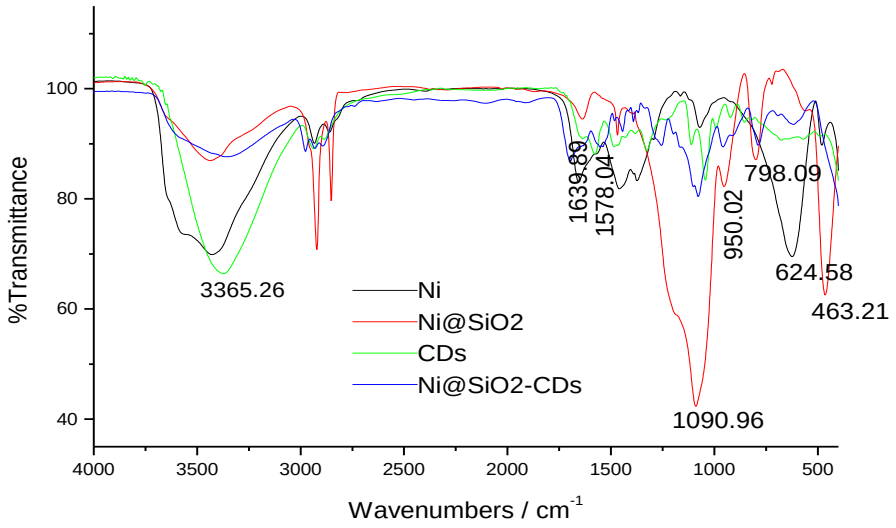


Figure S4. IR spectrum of Ni, Ni@SiO_2, CDs, Ni@SiO_2-CDs.

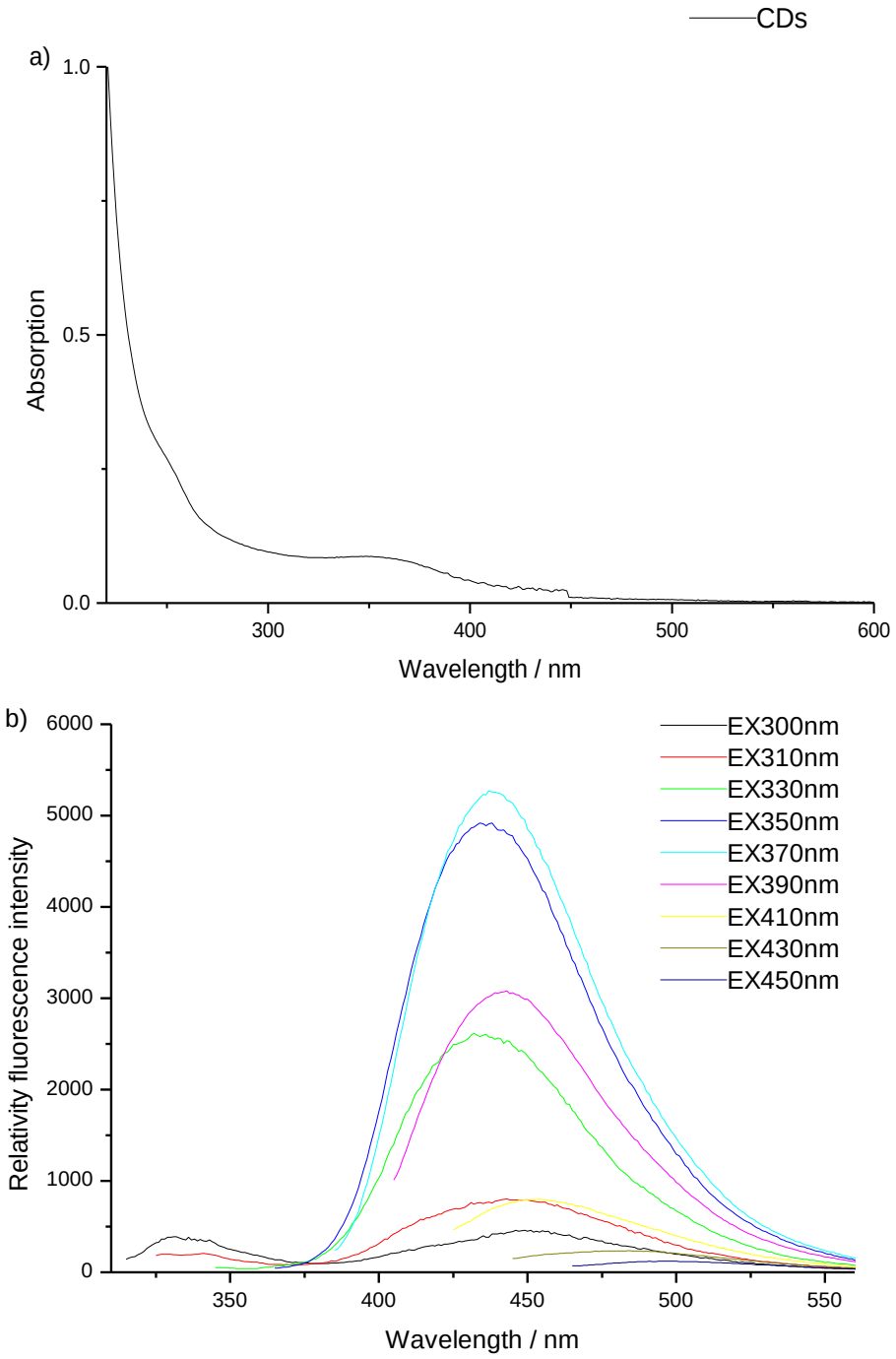


Figure S5. (a) Absorption spectra of CD in ethanol. (b) Corresponding fluorescence emission spectra of CD in ethanol with different excitation wavelengths**.**

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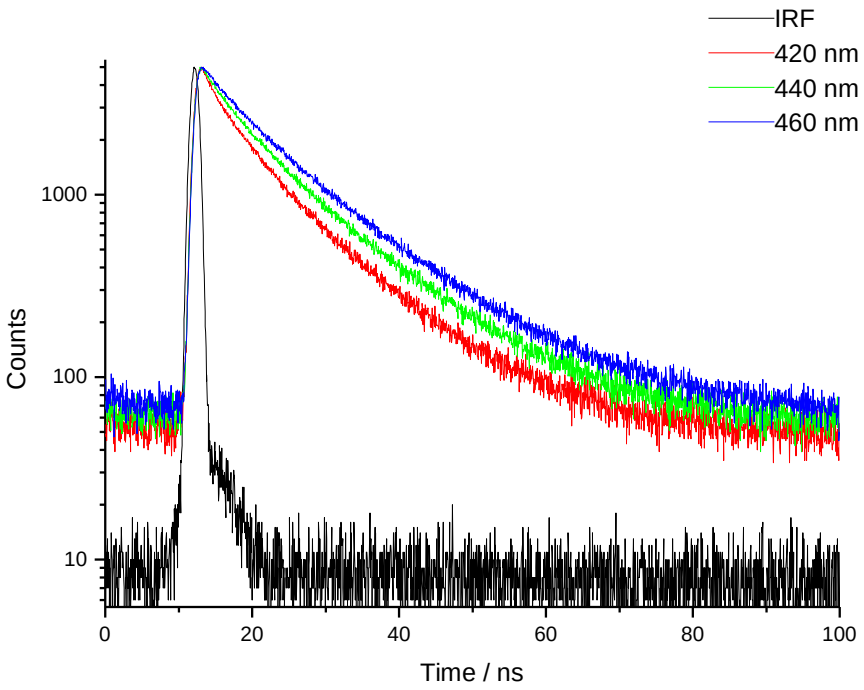

Figure S6. The decay curves of CDs in ethanol collected at different wavelengths when excited at 330 nm.

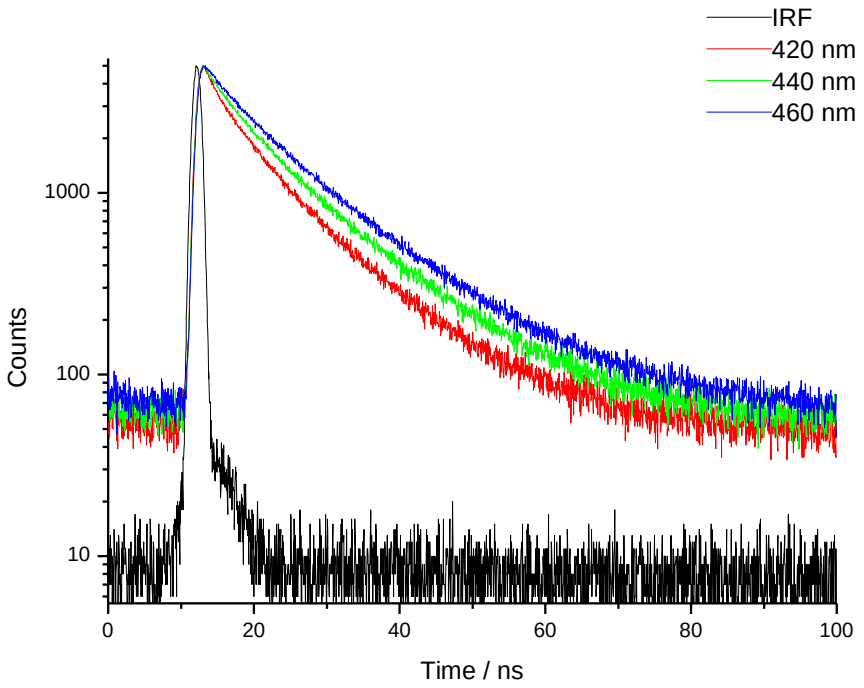

Figure S7. The decay curves of CDs in ethanol collected at different wavelengths when excited at 360 nm.

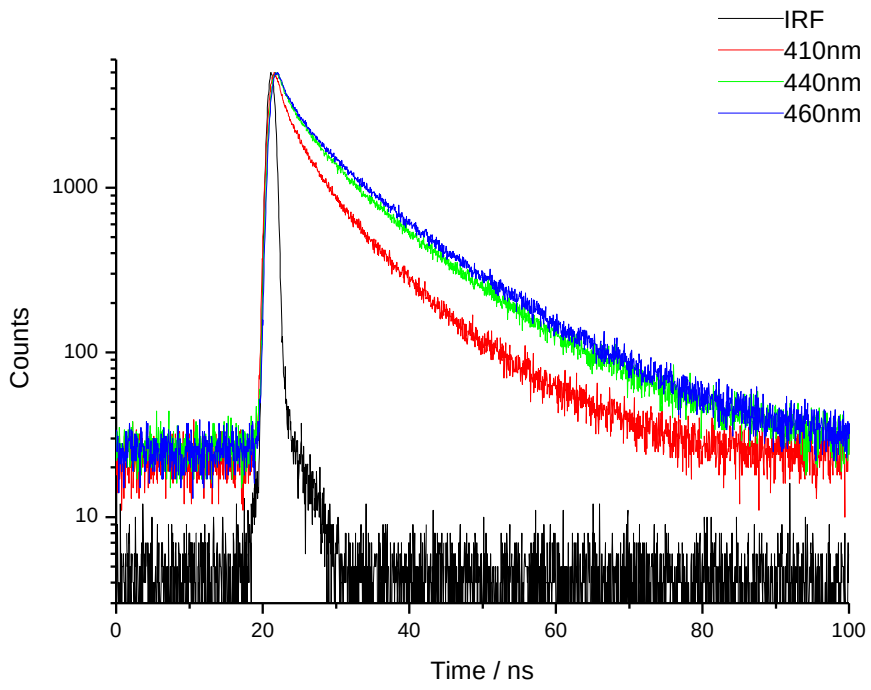

Figure S8. The decay curves of Ni@SiO_2-CDs in solid state collected at different wavelengths when excited at 330 nm.

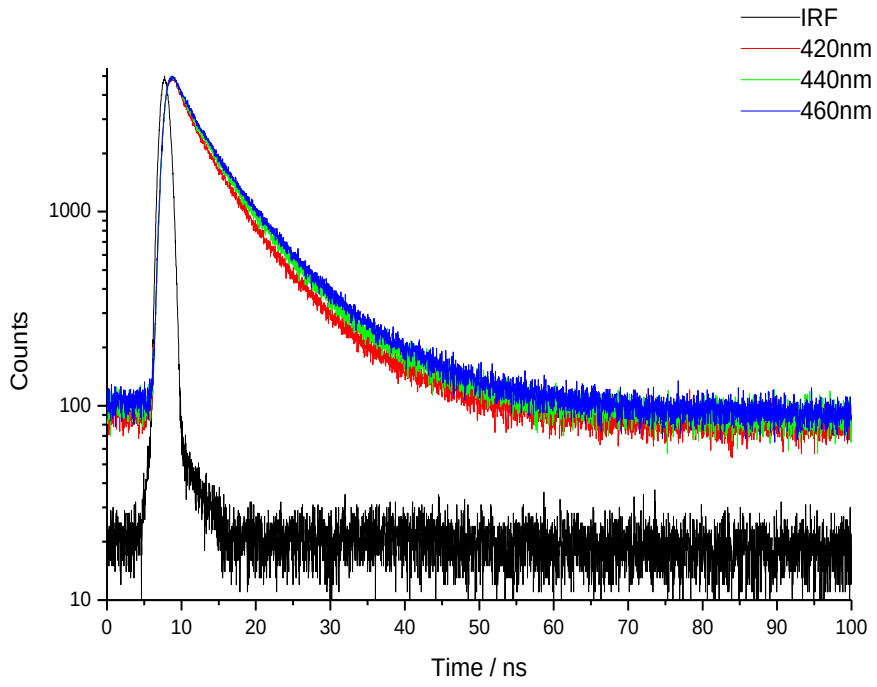

Figure S9. The decay curves of Ni@SiO_2-CDs in ethanol solution collected at different wavelengths when excited at 330 nm.

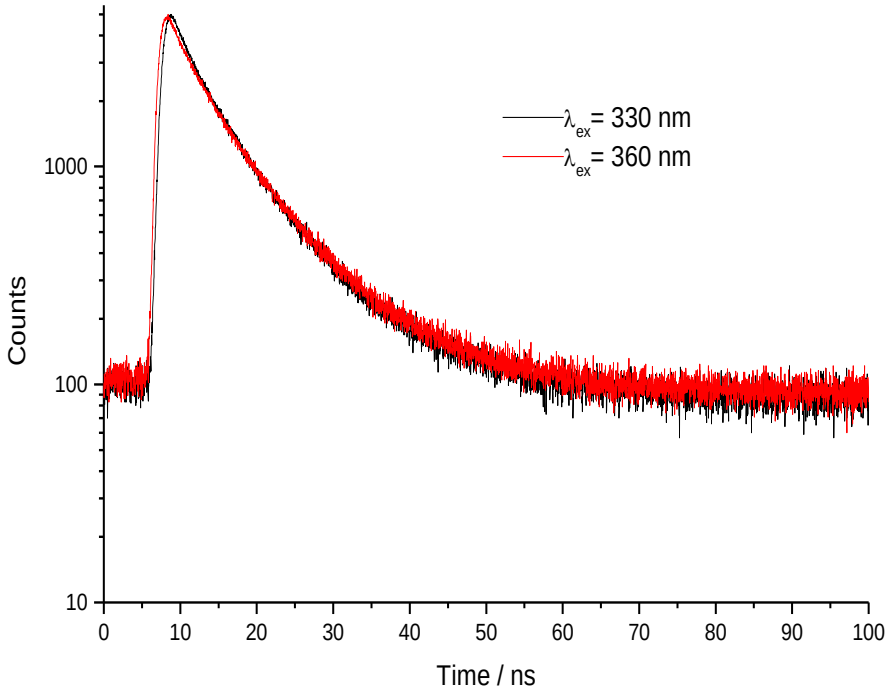

Figure S10. The decay curves of Ni@SiO_2-CDs in solid state collected at 440 nm when excited at 330 nm and 360 nm.