Supporting Information

for

One-pot green and simple synthesis of actinian nickel-doped carbon nanoflowers for ultrasensitive sensing of quercetin

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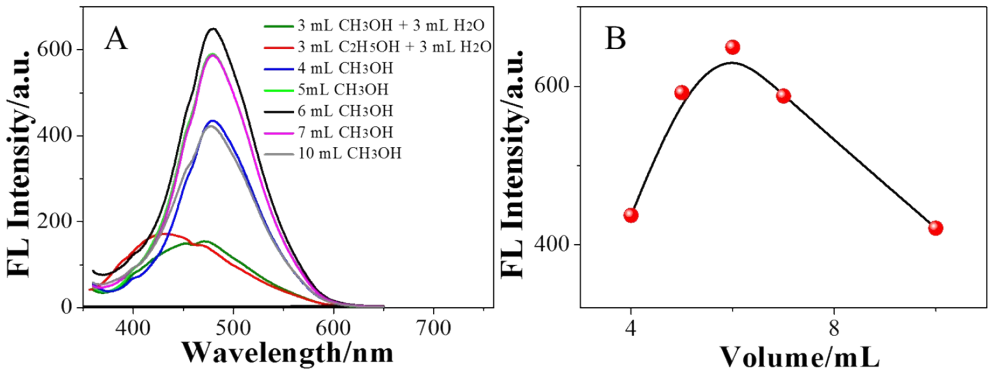

Fig. S1 A) FL emission spectra of the Ni-CNFWs at different stabilizer species and volume (λex=350 nm). B) Plot of the quenched FL intensity versus methanol volume, the excitation and emission slit widths were 5 nm and 5 nm, respectively.

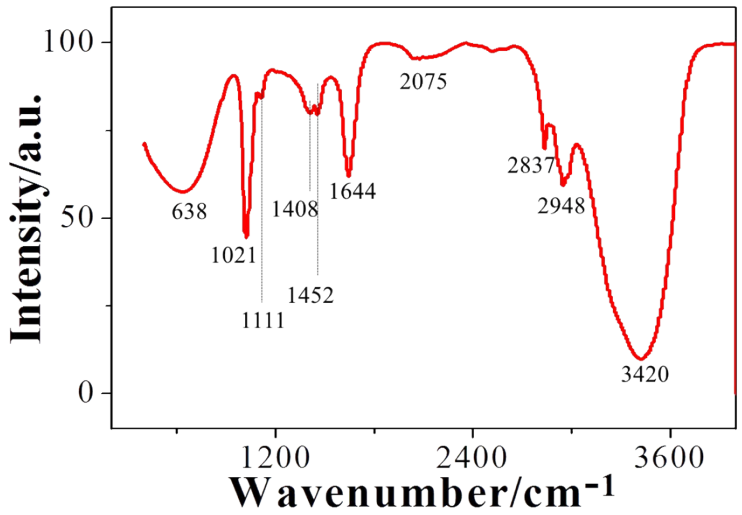

Fig. S2 FT-IR spectrum of the synthesized Ni-CNFWs.

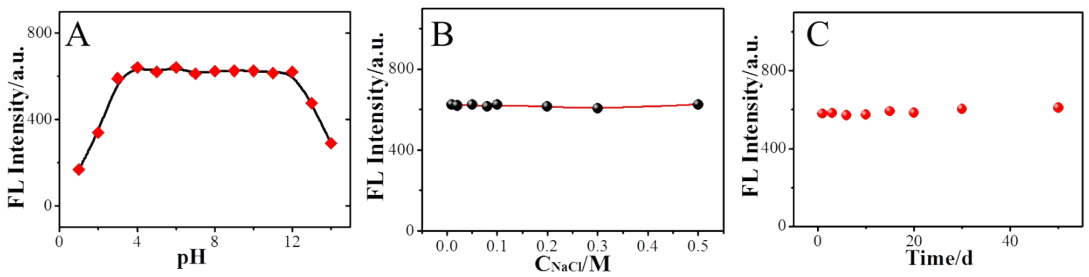

Fig. S3 FL intensity at 480 nm (excitation at 350 nm) of the Ni-CNFWs as a function of A) solution pH value, B) NaCl concentration, and C) storage time. Both the excitation and emission slit widths were 5 nm.

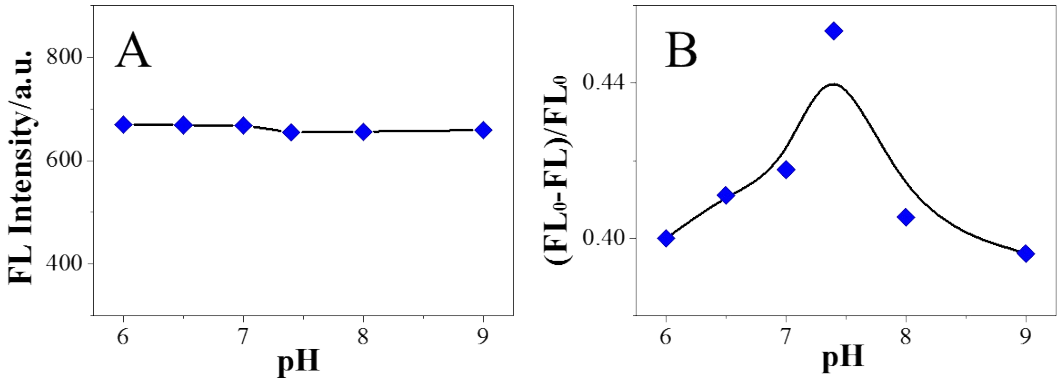

Fig. S4 A) Plot of the FL signals of the Ni-CNFWs in different pH values of Tris-HNO_3 buffer; B) Plot of the FL signals $(FL_0\text{-}FL)/FL_0$ of the Ni-CNFWs in different pH values of Tris-HNO_3 buffer in the presence of Qut, the concentration of Qut is 300 μM; λex =350 nm and the excitation and emission slit widths were 5 nm and 5 nm, respectively.

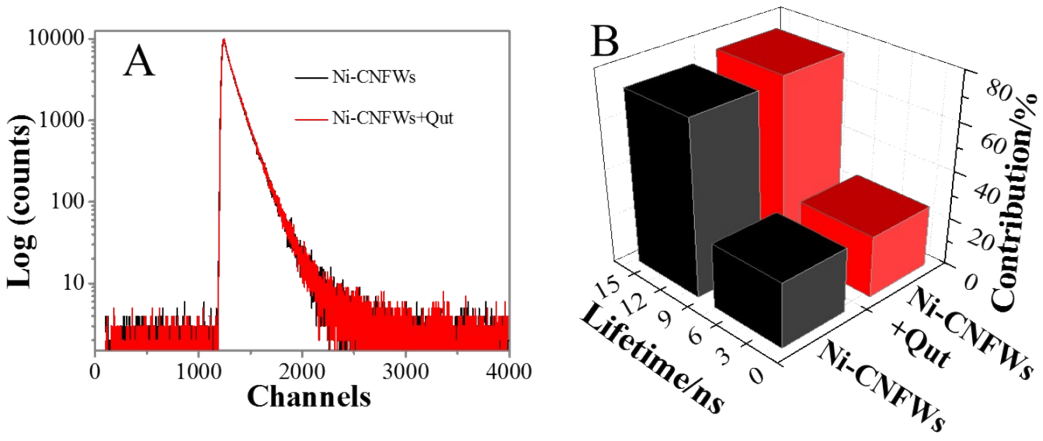

Fig. S5 A) Decay of the FL of Ni-CNFWs in the absence and presence of Qut (150 μM). B) FL lifetimes of Ni-CNFWs in the absence and presence of Qut.

Table S1 Comparison of the methods, materials, linear range and detect limit for quercetin using different technology.

Analyte	Methods	Materials	Linear range	Detect limit	Ref.
Quercetin	Fluorescence	carbon nanoparticles	3.3 - 41.2 μM	0.175 μM	1
Quercetin	Fluorescence	SiCDs	0 - 40 μM	0.079 μM	2
Quercetin	Fluorescence	CdSe/ZnS quantum dots	1.907 - 600 μM	0.463 μM	3
Quercetin	Electrochemistry	graphene	0.1 - 700 μM	0.06 μM	4
Quercetin	Chemiluminescence	Luminol-NaOH-H_2O_2	1.4 - 160 μM	0.93 μM	5
Quercetin	Fluorescence	Ni-doped carbon nanoflowers	0.5 - 300 μM	0.137 μM	Our method

References:

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