Supporting information for

Synthesis of fluorescent and water-soluble silicon nanoparticles with high pH response and its application to pH measurement and gastric parietal cell imaging

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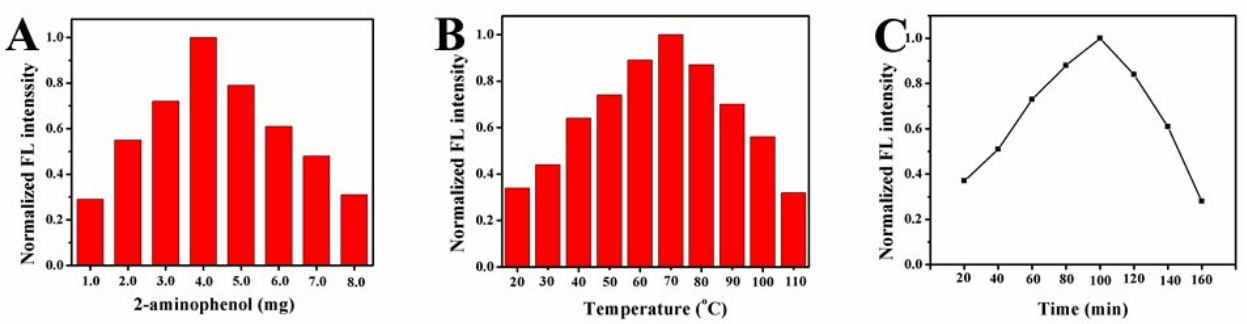

Figure S1. (A) Normalized FL intensity of Si NPs synthesized by adding various amount of 2-aminophenol; (B) Normalized FL intensity of Si NPs synthesized under various reaction temperature; and (C) Normalized FL intensity of Si NPs synthesized at various reaction times. The volume of AEEA was 1.0 mL.

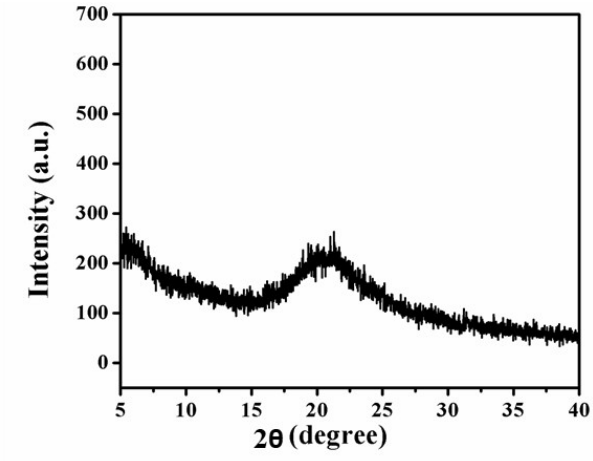

Figure S2. Powder X-ray diffraction pattern of the prepared Si NPs.

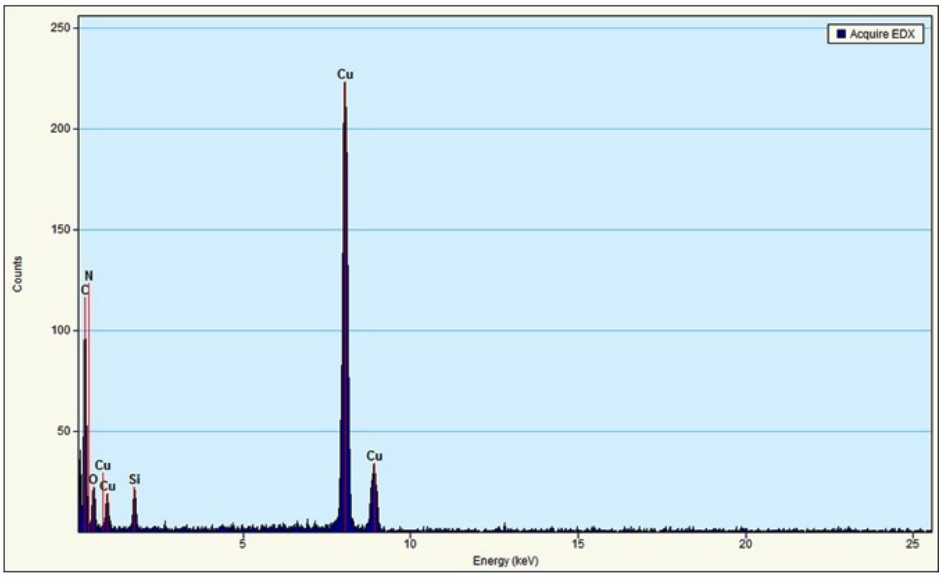

Figure S3. EDS pattern of the Si NPs

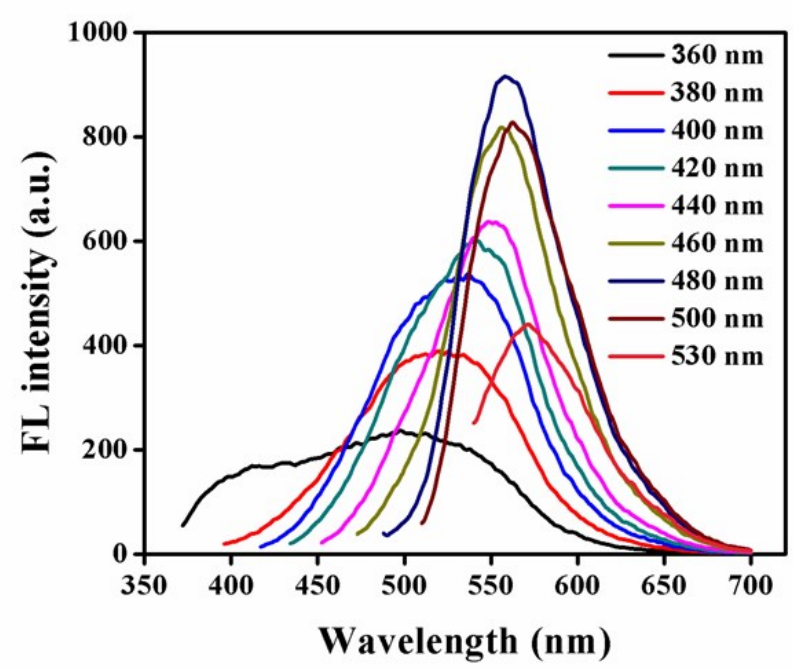

Figure S4. FL emission spectra of the prepared Si NPs under various excitation wavelengths.

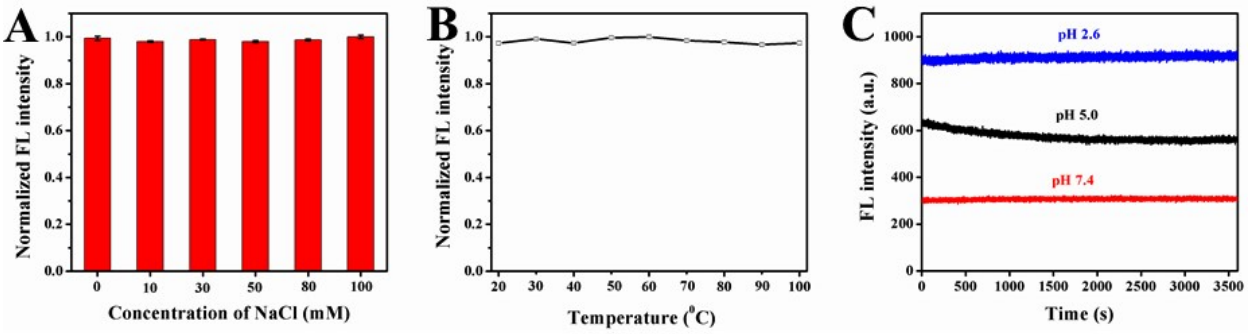

Figure S5. (A) Normalized FL intensity of Si NPs in 10 mM citric acid-Na2HPO4 buffer (pH 3.0) with different concentrations of NaCl. Error bars stand for the standard deviation of three independent experiments (n=3). (B) Normalized FL intensity of Si NPs after incubation under different temperature. (C) FL intensity of Si NPs incubated in different buffer pH (2.6, 5.0 and 7.4) as function of time under 480 nm light illumination.

Table S1. Comparison of the present method with other reported methods for Si NPs synthesis.

Synthesis method	Reaction time	Reaction temperature (°C)	Fluorescence emission	Ref.
Microwave	24 h	25	Green light	1
Microwave	12 h	25	Yellow light	2
Argon flow	60 h	420-500	-	3
Argon atmosphere	8 h	1900	Blue light	4
Hydrothermal	10 h	40	Blue light	5
Nitrogen-filled glove box	20 h	200	Blue light	6
Chemical etching	12 h	25	Blue light	7
Chemical etching	24 h	60	Blue light	8
Hydrothermal	12 h	25	Green light	9
Hydrothermal	3 h	200	Blue light	10
Microwave	4 h	200	Green light	11
Hydrothermal	100 min	70	Yellow light	This work

Notes and references

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