

Supporting information

Optical characterization

UV-Vis-NIR Absorption Spectroscopy

Optical absorption spectra of the diluted tea samples in ultrapure water were recorded employing Evolution 201 UV spectrophotometer (Thermo Fisher, USA) at 25°C. The absorbance spectra of 9 tea samples containing DSH, DH, HZ, ZSXZ, TGY, SSLB, MLH, GSYW, AJB were scanned respectively for exploring sensing mechanism.

Fluorescence Spectroscopy

Fluorescence spectra of THF solution of SCPNs were recorded using Fluorolog-3-P UV-Vis- NIR fluorescence spectrophotometer (Jobin Yvon, France). Both the entrance and exit slits were set at a width of 7 nm.

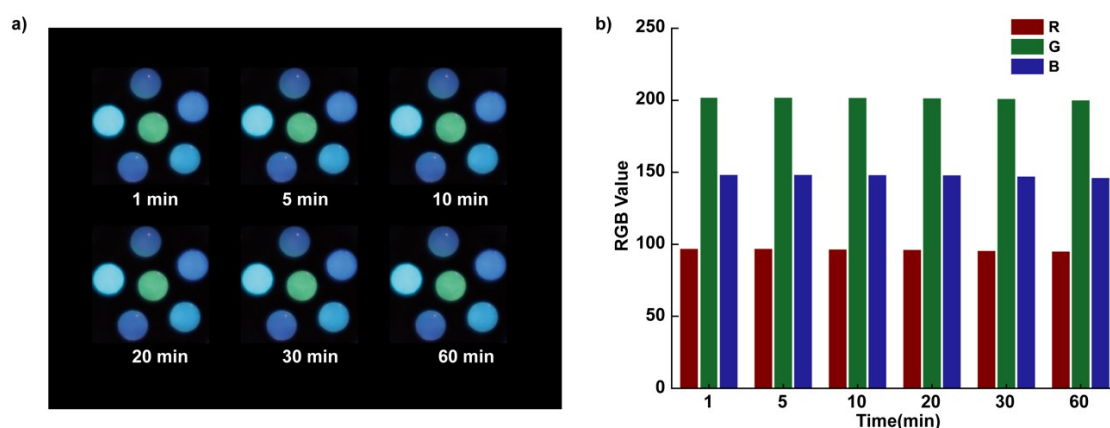


Figure S1. The stability of fluorescence sensor array in aqueous solution. (a) the fluorescence maps of the sensor array with different exposure time in ultrapure water. (b) the RGB values of sensors recorded by ImageJ software.

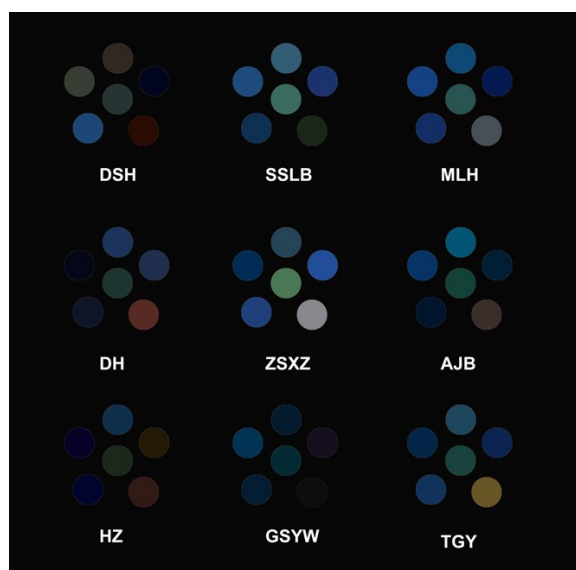


Figure S2. Color-difference maps for 9 tea samples

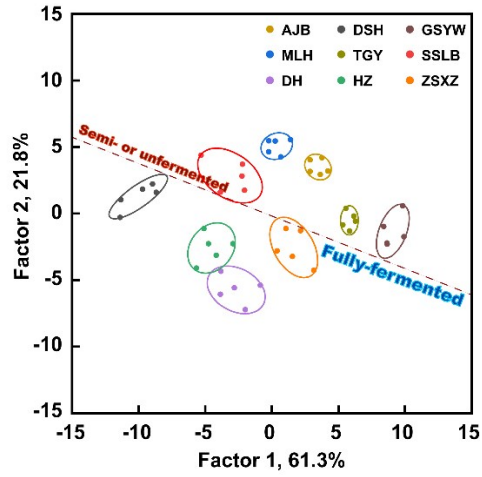


Figure S3. Discrimination of the 9 tea samples according to the tea-manufacturing.

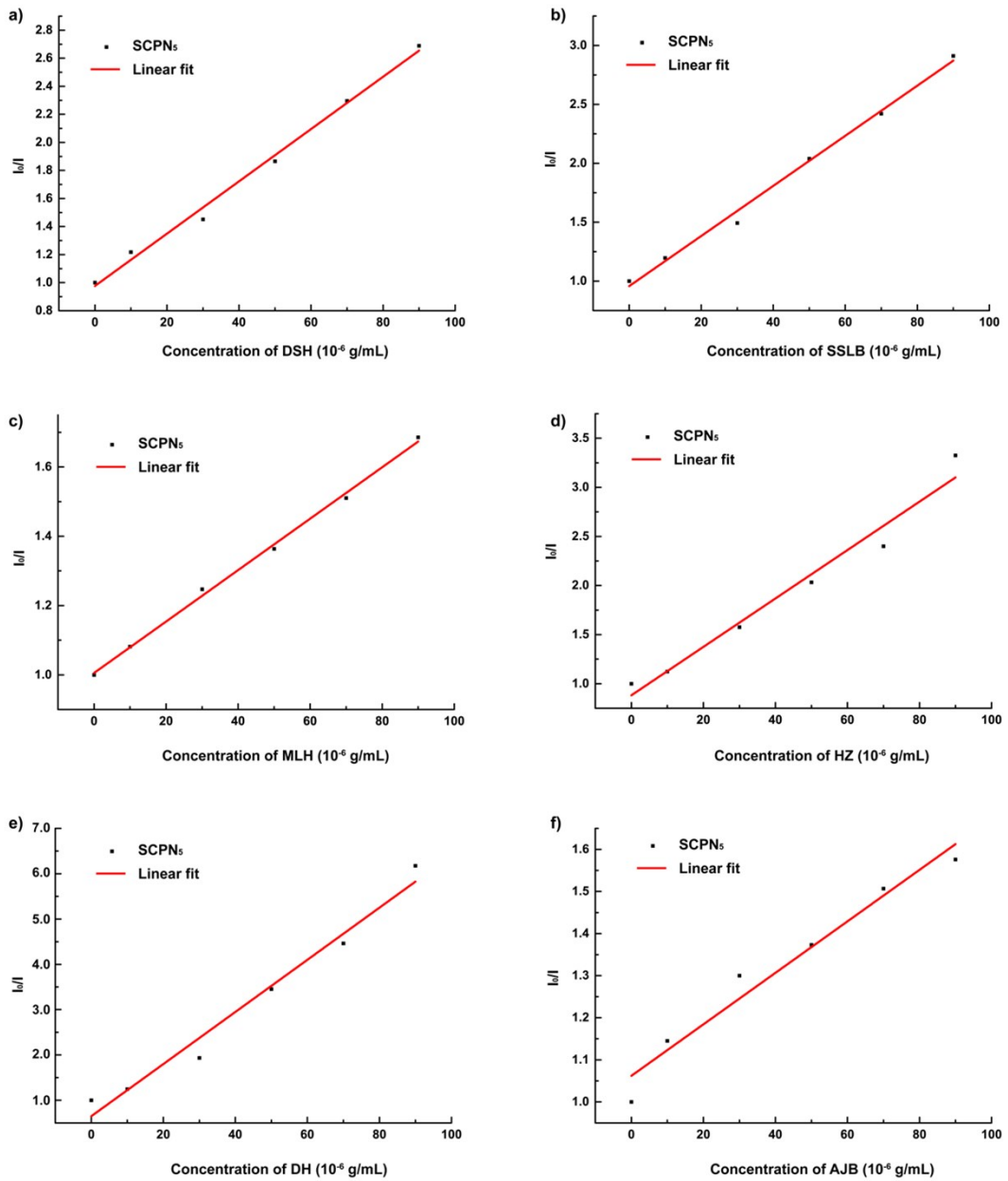


Table S2. 18-dimensional vector of 6 sorts of SCPNs when soaked in aqueous solutions of 9 tea samples respectively (differences in RGB values).

Analytes	R1	G1	B1	R2	G2	B2	R3	G3	B3	R4	G4	B4	R5	G5	B5	R6	G6	B6
DSH	-40	-77.4	-65.4	-31.6	-71.2	-86.6	-18.8	-46	-83.8	-73	-55.4	-50	-21.4	-50.2	-73.2	-13.4	-53.4	-71.2
DSH	-51.2	-84	-69	-20.2	-56.4	-69.4	-16.2	-43.8	-72	-85	-77.6	-72.2	-20.8	-54.2	-86.8	-27.6	-65.6	-78.2
DSH	-53	-75	-62	-38.6	-58.2	-62	-22	-49.4	-72.4	-65.4	-66.6	-57.6	-20.2	-48.6	-73.2	-34.8	-61.6	-61
DSH	-49.6	-74.8	-58.6	-47.6	-61.6	-64.4	-16.2	-47.6	-71.2	-80.6	-44.2	-33.2	-21.8	-49.4	-68	-33.4	-59.2	-61.2
DSH	-27.8	-73.2	-56.8	-24.6	-79.8	-92.2	-17	-59	-88.8	-71.4	-44.6	-32.4	-6	-35	-62	-11.4	-59	-79.6
SSLB	-27.4	-46.6	-37.2	-19.8	-43.4	-46.6	-18.2	-42.2	-57.2	-60.2	-27	-14.4	-11.6	-47	-61.4	-16.4	-45	-46.6
SSLB	-36.6	-49.4	-39.8	-11.8	-45.8	-60.8	-18	-31.4	-41.8	-73	-45.2	-33.8	-16.8	-34.8	-57.2	-12.6	-37.4	-47
SSLB	-33.2	-57.8	-46.6	-12.6	-41	-44	-19	-47	-68	-84.2	-58.4	-48	-15.6	-38	-56.2	-10.2	-31	-36.2
SSLB	-20.2	-29.6	-32.4	-29.6	-36.8	-34.8	-19	-45.4	-56	-57.4	-24.4	-15.2	-11.8	-40.2	-39	-29.8	-56	-50.4
SSLB	-33.8	-57	-39.8	-16.6	-34.6	-36	-19.4	-39.4	-59.2	-52	-37	-31	-13.8	-39.8	-50.8	-17.6	-45.6	-43.4
MLH	-17.4	-33	-26.2	-2.2	-25.4	-27.6	-4.8	-21.6	-35.4	-44.2	-14.4	-5	-1.4	-22.6	-42	-3.6	-29.8	-34.2
MLH	-18.6	-31	-22	-11.4	-15.4	-16.6	-5.6	-18	-23	-37.4	-11.4	-2.2	-2.2	-28.2	-37.6	-11.8	-32.8	-26.4
MLH	-21	-33.6	-24.8	-14.8	-28.2	-23.8	2.2	-13.4	-36.6	-45.8	-18.6	-9.6	-4.4	-27.2	-35.4	-7.8	-18.2	-12.4
MLH	-24	-33.4	-21.4	-9.4	-16.2	-18	-6	-27.6	-21.4	-40.4	-22.2	-12.6	-2	-25.2	-24.4	-3.6	-17	-15.8
MLH	-16.4	-42.8	-38.6	-11.8	-38.6	-41.6	-5.6	-34.4	-49.6	-38	-21.8	-15	-1.6	-23	-35.2	-16.8	-30.2	-19.8
HZ	-37.6	-73.8	-58.4	-40.8	-57.6	-81.8	-14.4	-28.8	-59.4	-45.2	-41.2	-41.2	-18.6	-32.2	-57.2	-23	-56.8	-89.4
HZ	-32	-49.6	-35.8	-38	-49	-52.6	-5.4	-9.4	-36.4	-48.6	-28.6	-25	-10.6	-13	-31	-19.6	-27.2	-32.2
HZ	-33	-70.4	-51	-18.6	-62	-73.6	-11.4	-31.8	-60.2	-51.8	-32.4	-25.6	-10.6	-30.2	-49.2	-17.4	-47.2	-62.2
HZ	-31.6	-65	-47.8	-14.8	-58.2	-72.4	-9.2	-21	-57.6	-66.2	-43.2	-36.8	-19	-39.2	-77.6	-23.6	-61.6	-88.6
HZ	-30.4	-67.2	-48	-22	-25.4	-68.6	-15.4	-27	-55	-47.8	-37.8	-33.4	-16	-24	-49.2	-26.2	-56.6	-70.4
DH	-30.4	-64	-48.6	-18.6	-62.8	-81.4	-22.2	-37.2	-71.2	-42.4	-36.4	-36.2	-14.4	-31.8	-47.8	-22.2	-68.6	-98.2
DH	-37.4	-60.2	-39.2	-20.2	-52.8	-58.4	-19.6	-34.2	-43.6	-36.6	-41.4	-40.6	-10.2	-14.4	-37	-22.2	-54.4	-78.2
DH	-23.6	-49	-24.4	-13.4	-48	-54.6	-17.4	-31	-44.8	-55.6	-33.2	-27.6	-13.2	-16	-40.6	-16.6	-50.8	-66
DH	-33	-57.2	-42.4	-34	-55.4	-60.4	-13.2	-25.4	-41.6	-48.2	-21.6	-15.2	-5.6	-14.4	-37.6	-27.2	-40.8	-46.2
DH	-28.8	-54.8	-34.8	-34.6	-71.6	-80.4	-18.4	-44	-74.8	-63.8	-51.4	-42	-6	-15.8	-34.4	-34.2	-44.4	-36.2
AJB	-11.4	-21.4	-18.8	-14.2	-28.4	-23.6	6.6	-5.4	-6.4	-9.2	-3.2	-1.8	-0.8	-11.6	-6.4	-14	-33.4	-27.2
AJB	-11.2	-18	-13.6	-12.6	-23.8	-23.4	-3.6	-15.4	-25.6	-20.6	-7.8	-1	-0.4	-3.2	-2.2	-12.2	-22.8	-13.2
AJB	-13	-9	-0.8	-17	-22.8	-16.2	-5.2	-14.8	-6.4	-16.6	-3.4	-0.4	-3	-9.2	0.4	-9.2	-38.4	-13.2
AJB	-19.4	-33.2	-25.2	-13	-27	-23.8	-8	-26.8	-22.8	-34.2	-9.4	0	-2	-13	-28.4	-9.2	-19.8	-17.4
AJB	-23.2	-83.6	-46.4	-15.8	-72.2	-88.2	-11.8	-42	-87.8	-15.8	-31	-18	-11.8	-29.6	-66.2	-7.2	-29.2	-29.4
ZSXZ	-10.8	-30.6	-8.8	-4	-34.8	-38.6	-7.4	-12	-23.2	-38.2	-14.6	-10	-3.8	-10.8	-22	-13.2	-42	-55.6
ZSXZ	-24.8	-39.4	-18.8	-6.2	-16.8	-19.8	-6.2	-23.2	-35	-39.4	-21.8	-14	-4	-14	-28.4	-13.6	-21	-19.4
ZSXZ	-25.4	-36.2	-22.2	-18.8	-30.2	-32.2	-8.2	-15.4	-25.4	-43	-16.6	-6.8	-11.6	-17	-26.8	-27.8	-39.6	-36
ZSXZ	-25.2	-50.6	-25.2	-22.2	-55.8	-67.4	-16	-23.2	-35.6	-35.6	-39.8	-32.2	-15	-18	-26.6	-24.6	-61	-78.8
ZSXZ	-19.4	-47.2	-18.4	-10.6	-48.6	-66	-5	-9.4	-22.6	-25.8	-29.8	-28	-4.4	-14.2	-20	-11	-46.4	-62.2
GSYW	-16.8	-21.4	-1.8	-19.2	-43	-40	-25.2	-26	-27.6	-56.6	-27.4	-19	-18.2	-31	-40.8	-4.6	-21.4	-27.8
GSYW	-18.4	-19.2	-4.2	-13.8	-25.8	-25.4	-11.8	-13.2	-18.4	-18.6	-6.6	-2	-10	-24	-13.2	-13.2	-18.2	-13.6
GSYW	-15.4	-14.4	-3.8	-10.8	-26	-18.4	-11.8	-20.8	-17	-19.2	-4.2	-1.2	-3	-4.8	-2.4	-5.6	-12.2	-9.6

GSYW	-19.4	-22.2	-13.4	-11	-43.2	-46.8	-13.6	-23.4	-29.6	-17.6	-9	-1.4	-9	-24.4	-34.4	-11.4	-36.4	-42.8
GSYW	-17	-24.6	-9.6	-5.8	-17.8	-18.8	-13.2	-24.8	-22.4	-8.4	-8.8	-7.6	-13.2	-27.2	-24.8	-2.6	-25.6	-29.4
TGY	-16.6	-34	-20.2	-13.4	-37.6	-38.2	-4.2	-5.8	-18	-20.4	-7.6	-3.4	-12.2	-21.2	-24.8	-23.2	-36.4	-31.8
TGY	-14.4	-24.8	-8.8	-10.4	-25.4	-29	-2.4	-6.4	-22.6	-25.6	-14.6	-8.4	-7.8	-9.4	-6	-22.6	-29.4	-22.6
TGY	-5.4	-18.2	-6.4	-10.4	-37.2	-38.4	3.8	-20.4	-28.6	-46.6	-10.4	-2	-1	-14	-30.6	-13.2	-26.4	-19.4
TGY	-11.2	-25.2	-12.2	-11.6	-46.4	-45	-9.6	-17.8	-31	-38.8	-34	-28	-6	-32.8	-58.8	-9.2	-45.6	-63
TGY	-15	-54	-25.4	-10.8	-68	-78.4	-6.6	-14.6	-25.8	-38.2	-37	-34.2	-28	-52.8	-58	-17	-64	-84.6