Supporting information

for

Stimuli-Responsive Circularly Polarized Luminescence with Chiroptical Amplification and Inversion Enabled by Cholesteric Assembled Bio-materials

Qing Miao[a], Xi Wang[a], Bowen Jin[a], Yang Chen[a], Yi Zhou[b], Rui Xiong[b], Xiao Meng[a],* Chunhong Ye[a],*

a. School of Physical Science and Technology, Shanghai Tech University, Shanghai 201210, China

Email: yechh@shanghaitech.edu.cn, mengxiao@shanghaitech.edu.cn

b. State Key Laboratory of Polymer Materials Engineering, Polymer Research Institute of Sichuan University, Chengdu, 610065 China
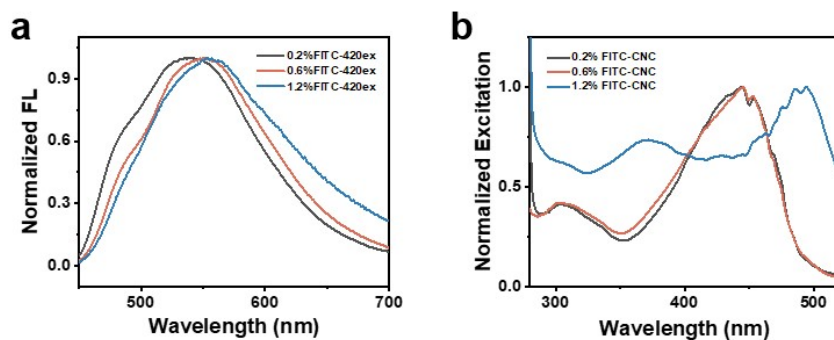
Figures

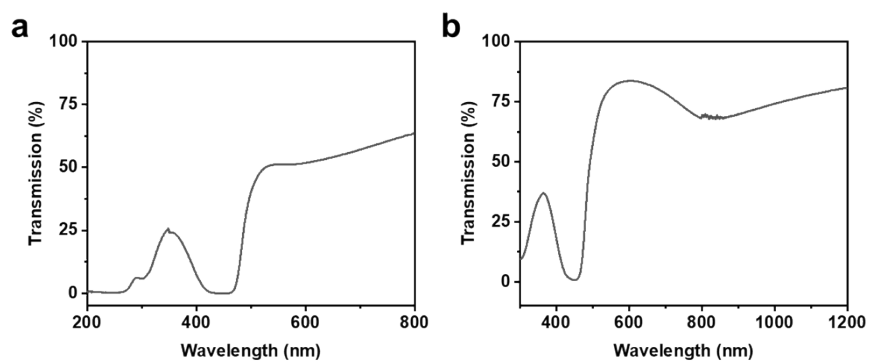**Figure S1.** Fluorescence (excitation: 420 nm) and excitation (emission: 550 nm) of CNC-FITC with different concentration.

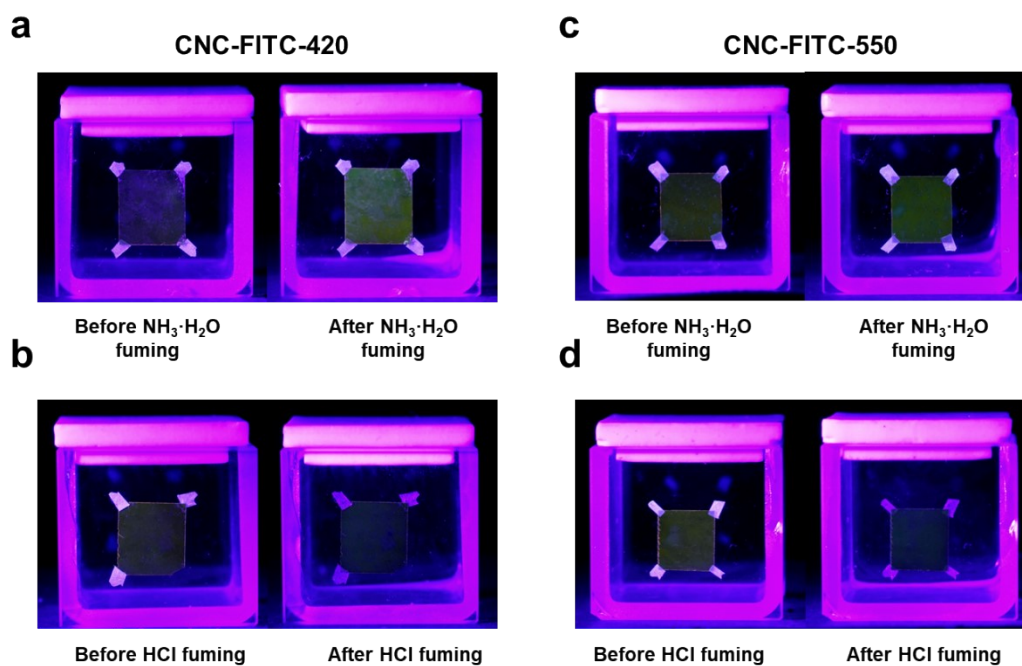**Figure S2.** Transmission spectra of CNC-FITC-640 (a) and CNC-FITC-900 (b).

Figure S3. Photographs of the in-situ fluorescence intensity changes of the CNC-FITC- 420 (a, b) and 550 (c,d) under acid and alkaline conditions with UV irradiation.
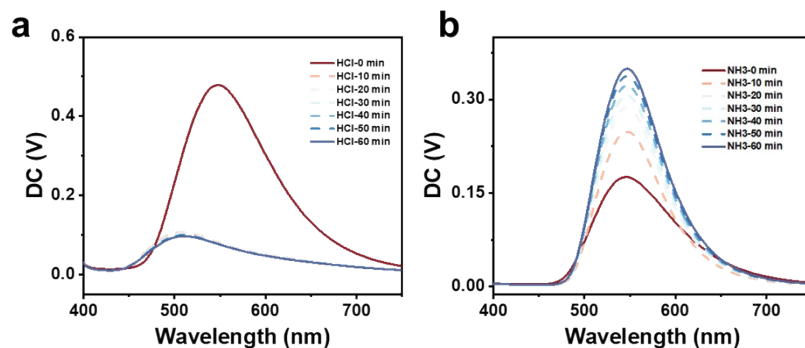

Figure S4. Fluorescence spectra of CNC-FITC-420 under acidic (a) and alkaline (b) vapor fuming.
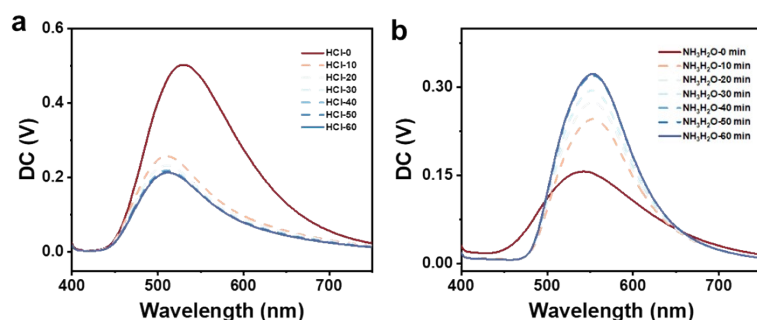

Figure S5. Fluorescence spectra of the CNC-FITC-550 film under acidic (a) and alkaline (b) vapor fuming characterized through CPL spectrophotometer (JASCO CPL-300).
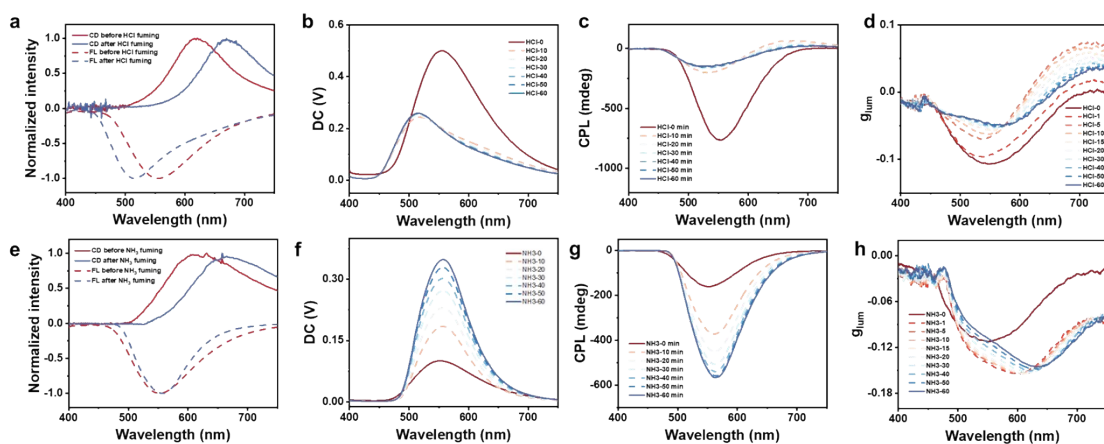

Figure S6. Normalized emission spectra (a), emission spectra (b), CPL (c) and g_{lum}-factor (d) of

CNC-FITC-630 at different time under HCl fuming. Normalized emission spectra (e), emission spectra (f), CPL (g) and g_{lum}-factor (h) of CNC-FITC-630 at different time under $NH_3 \cdot H_2O$ fuming.
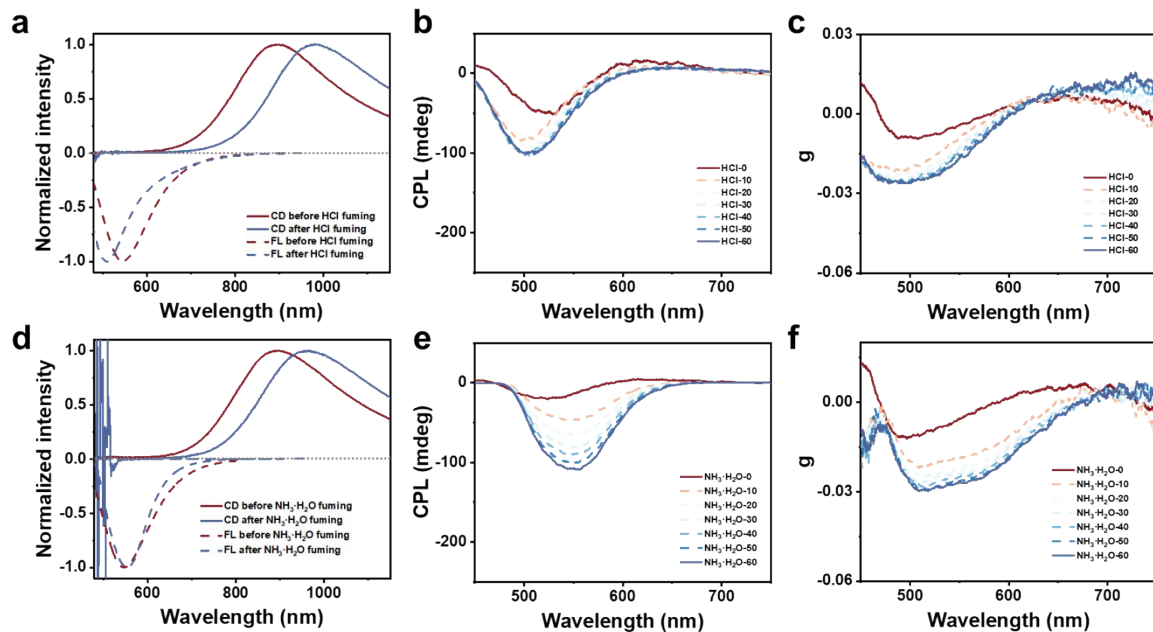

Figure S7. Normalized CD spectra and emission spectra (a), CPL (b) and g_{lum}-factor (c) of CNC-FITC-900 at different treatment intervals under HCl fuming. Normalized CD and emission spectra (d), CPL (e) and g_{lum}-factor (f) of CNC-FITC-900 at different treatment intervals under NH_3 fuming.
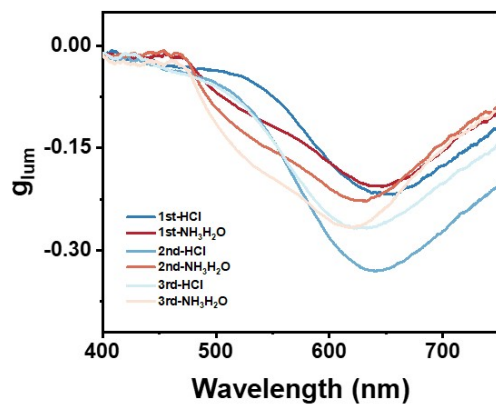

Figure S8. g_{lum}-factor of dynamic CPL switching during cycling tests under acid and alkaline

condition.