

Electronic Supplementary Information for
A Dual-Stimuli-Responsive Fluorescent Switch Ultrathin Film

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Wei).

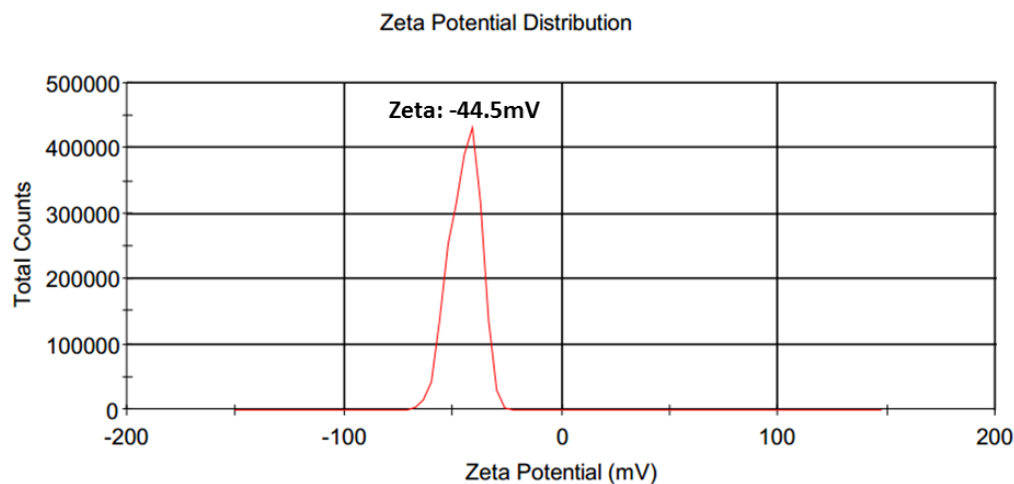


Figure S1. The Zeta potential (mV) of SP@PTBEM micelle.

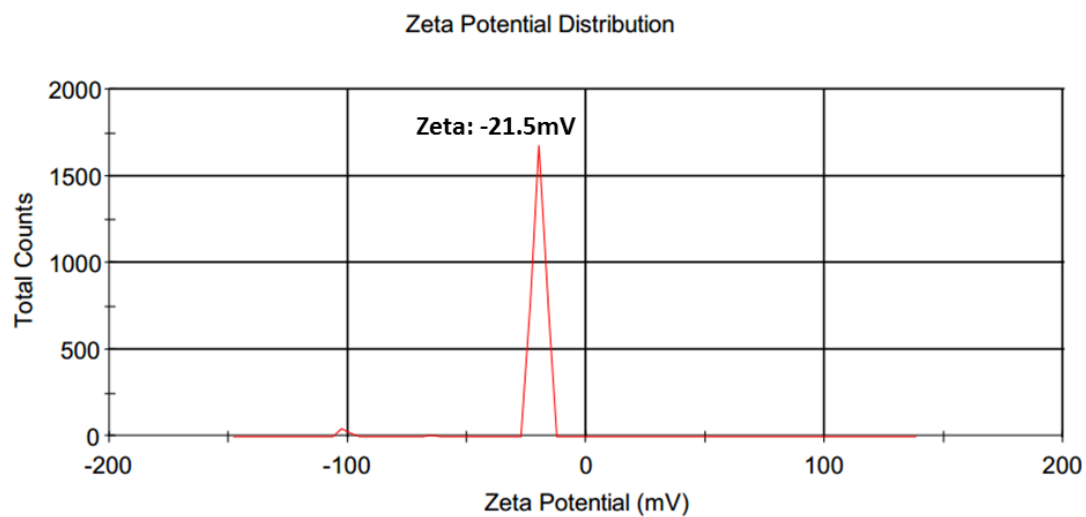


Figure S2. The Zeta Potential (mV) of Rf solution.

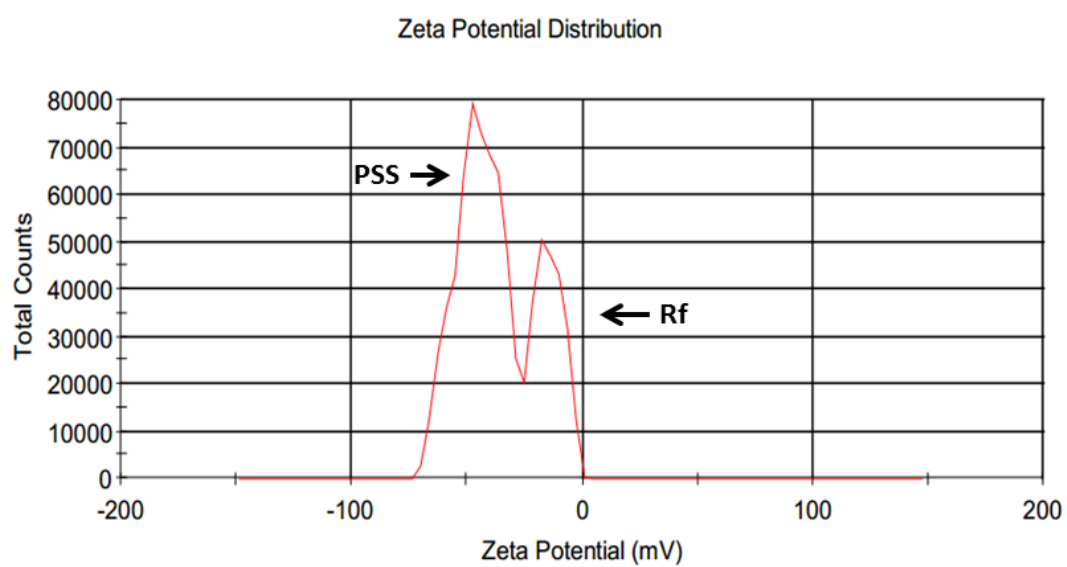


Figure S3. The Zeta Potential (mV) of Rf-PSS hybrid solution.

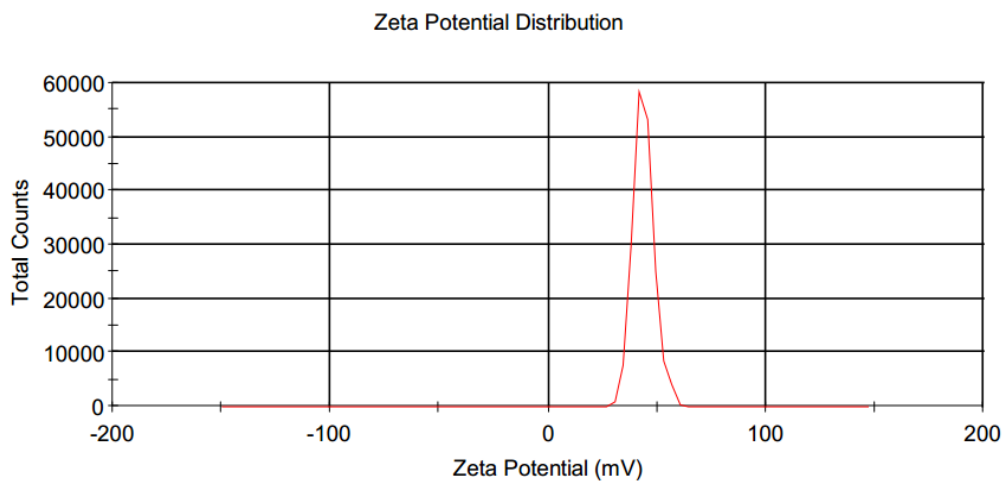


Figure S4. The Zeta potential (mV) of LDHs nanosheets suspension.

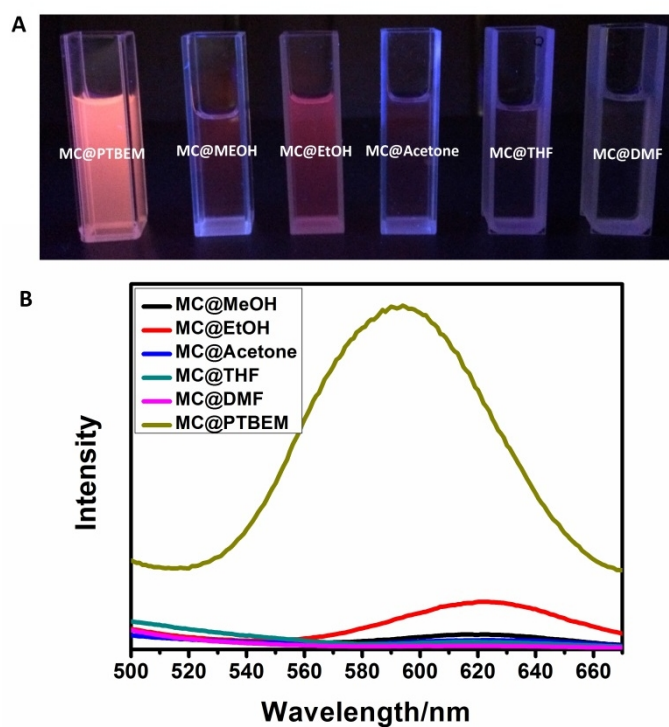


Figure S5. (A) The fluorescence photographs and (B) corresponding photoluminescence spectra of MC in various solvents (5×10^{-4} mol/L) upon irradiation by UV light for 120s.

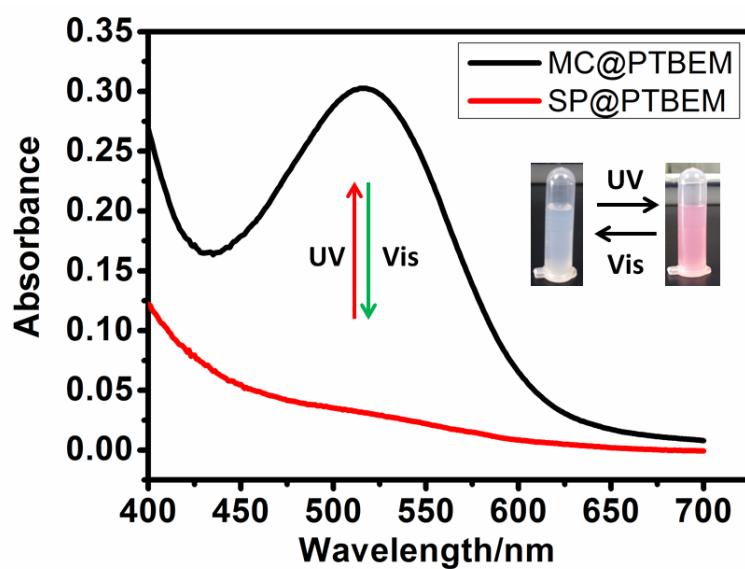


Figure S6. UV-Vis absorption spectra of SP@PTBEM and MC@PTBEM, and the insert shows the photograph of change from SP to MC.

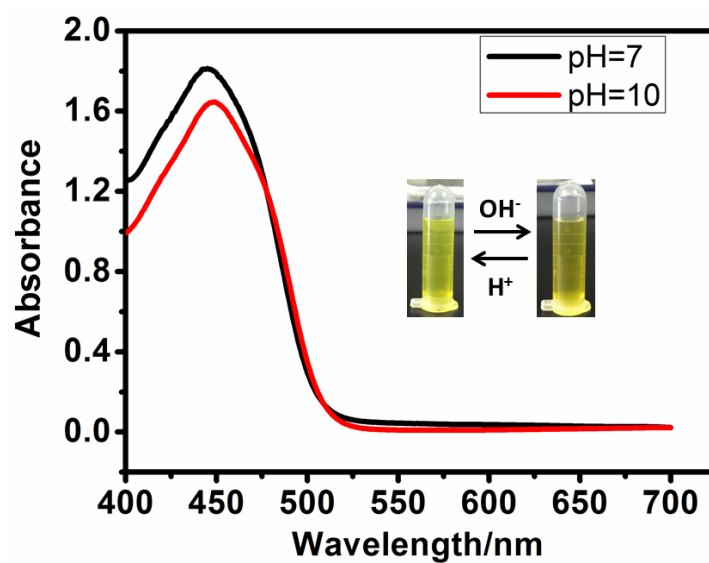


Figure S7. UV-Vis absorption spectra of Rf-PSS (pH=7) and Rf-PSS (pH=10), the insert shows the relevant photograph of change between pH=7 and pH=10.

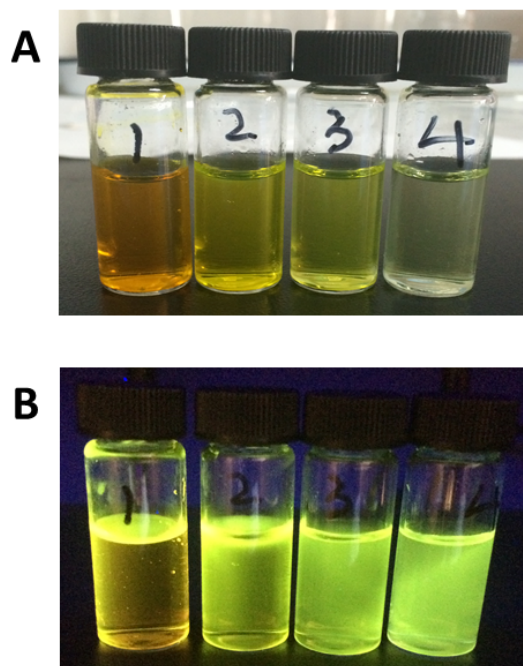


Figure S8. The photographs of Rf with different concentration (2 mg/ml, 0.2 mg/ml, 0.02mg/ml, 0.002mg/ml) under (A) the visible light and (B) the UV light.

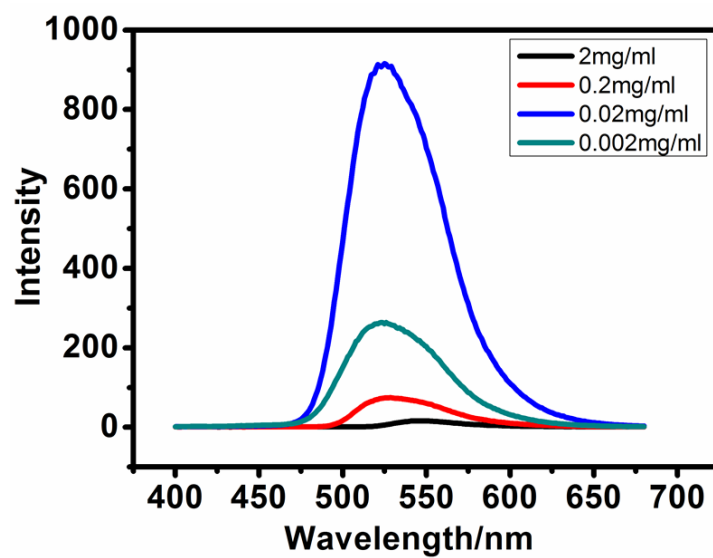


Figure S9. The photoluminescence spectra of Rf with different concentrations (2 mg/ml, 0.2 mg/ml, 0.02 mg/ml, 0.002 mg/ml).

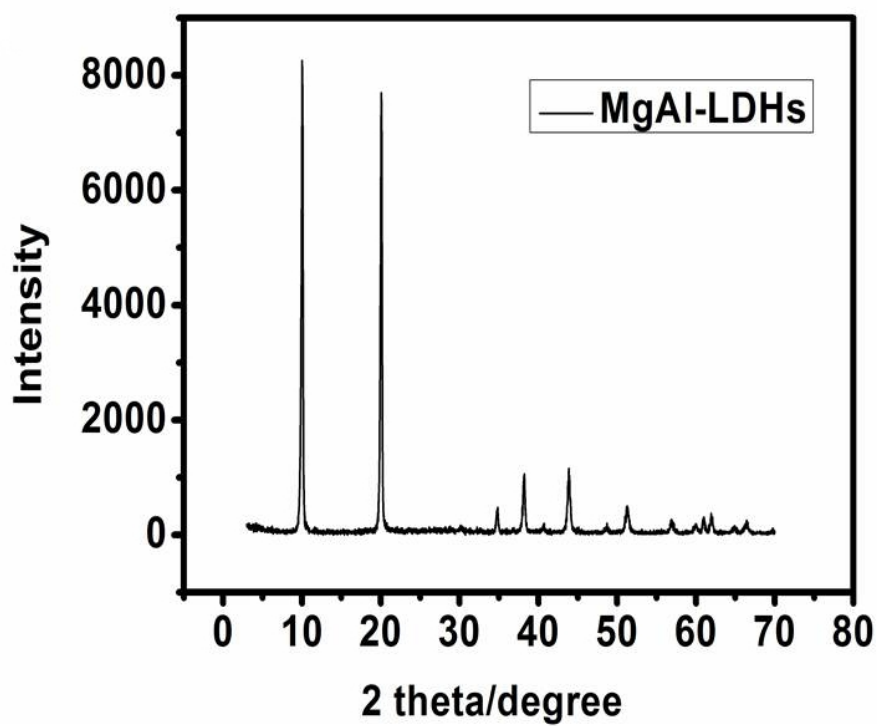


Figure S10. The XRD pattern of MgAl-LDHs nanoplatelets.

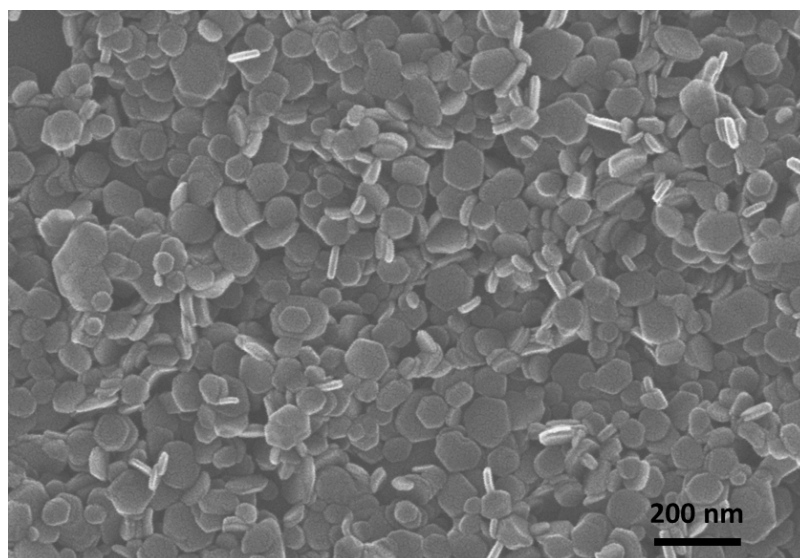


Figure S11. The SEM image of MgAl-LDHs nanoplatelets.

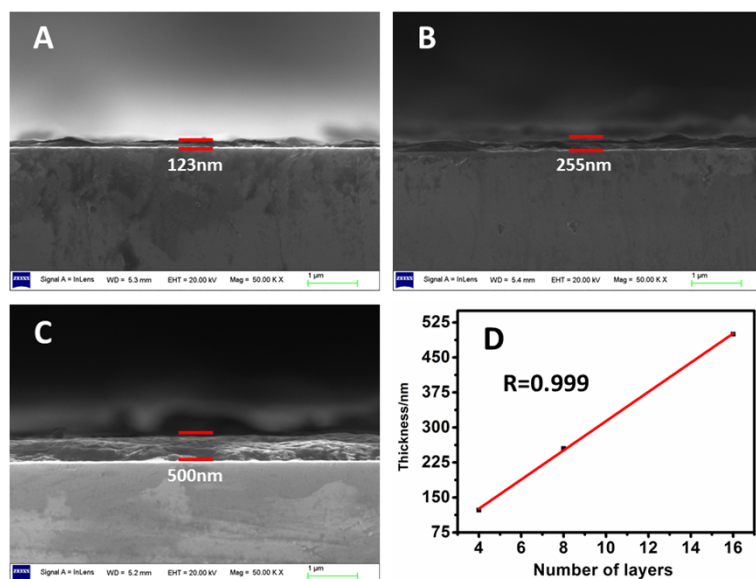


Figure S12. Side-view of SEM images for: (A) (SP@PTBEM/LDHs)₄ UTF, (B) (SP@PTBEM/LDHs)₈ UTF, (C) (SP@PTBEM/LDHs)₁₆ UTF on a silicon substrate. (D) The linear correlation between thickness of (SP@PTBEM/LDHs)_n UTFs and bilayer number n , with a bilayer thickness of 31 nm.

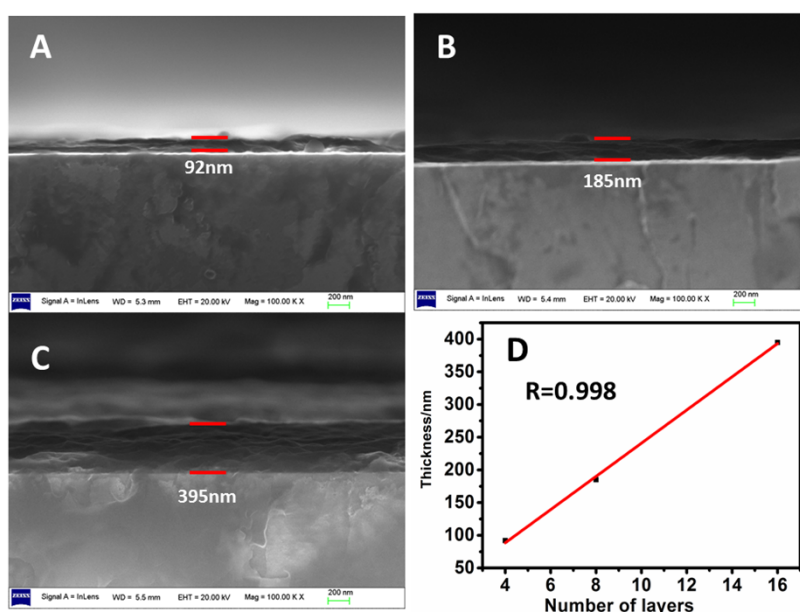


Figure S13. Side-view of SEM images for: (A) (Rf-PSS/LDHs)₄ UTF, (B) (Rf-PSS/LDHs)₈ UTF, (C) (Rf-PSS/LDHs)₁₆ UTF on a silicon substrate. (D) The linear correlation between thickness of (Rf-PSS/LDHs)_n UTFs and bilayer number n , with a bilayer thickness of 25 nm.

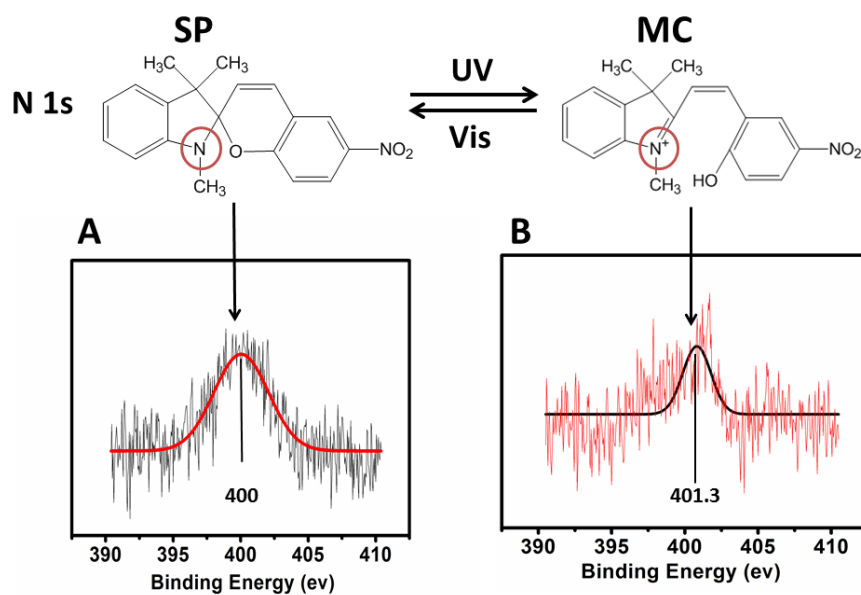


Figure S14. X-ray photoemission spectra of the N 1s core level regions of (A) the closed-ringed SP form and (B) open-ringed MC form.

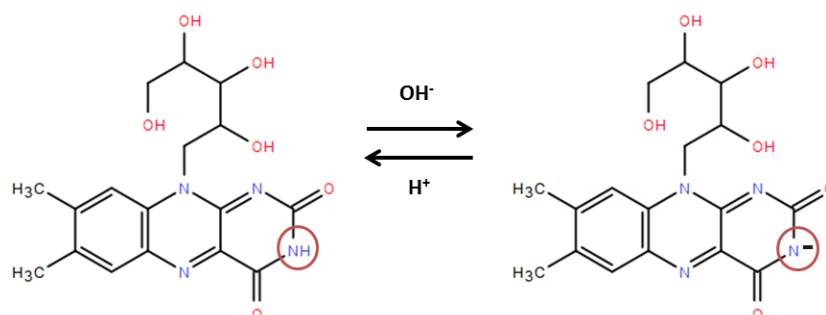


Figure S15. The transformation of molecular structure for riboflavin caused by pH value.^[1]

1. G. R. Penzer and G. K. Radda, *Q. Rev. Chem. Soc.*, 1967, **21**, 43–65.