

# A simple fabrication of PVA-ZnS composite films with superior photocatalytic performance: Enhanced luminescence property, morphology and thermal stability

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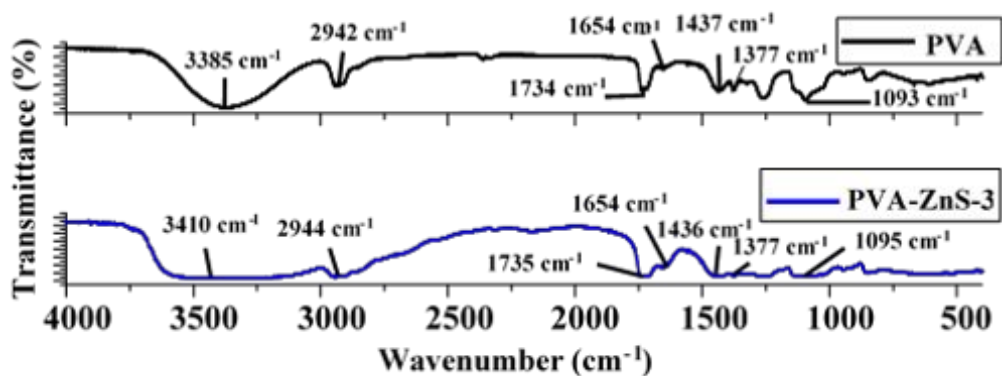
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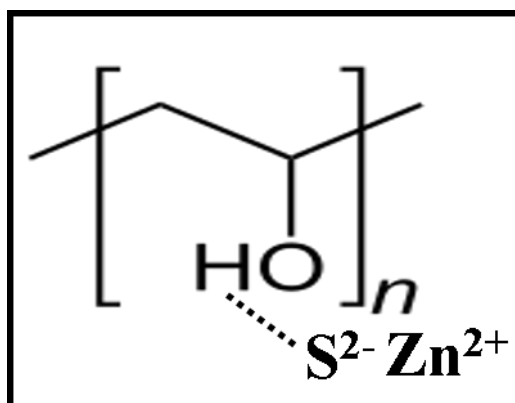
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## Ⓢ Supporting Information

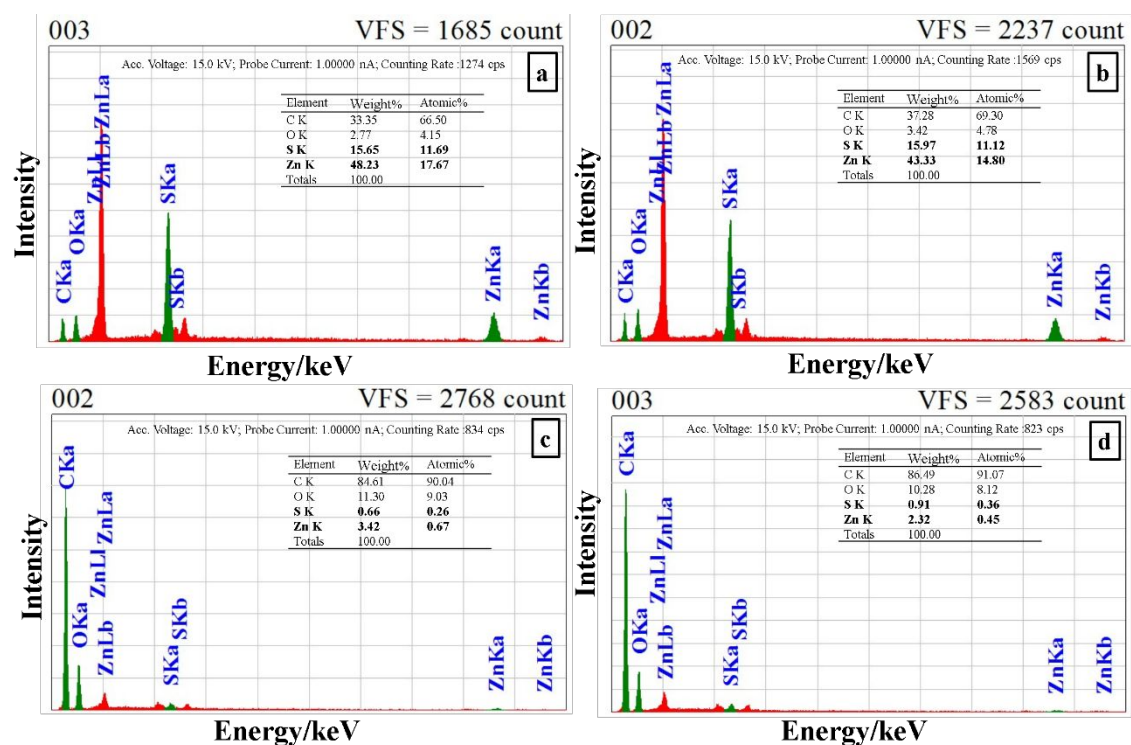
**KEYWORDS.** PVA–ZnS composite films, Photoluminescence property, Optical transparency, Morphology, Thermal stability, Photocatalytic activity



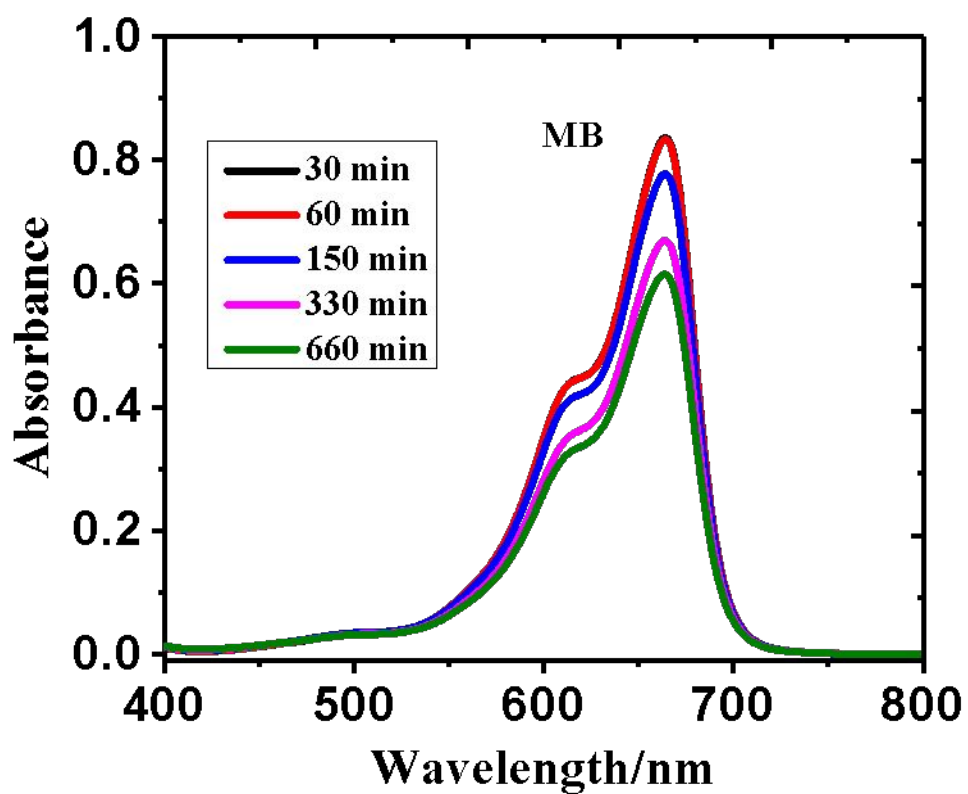
**Figure S1.** FTIR spectra of PVA and PVA–ZnS-3 composite films with detailed labelling of the peaks.



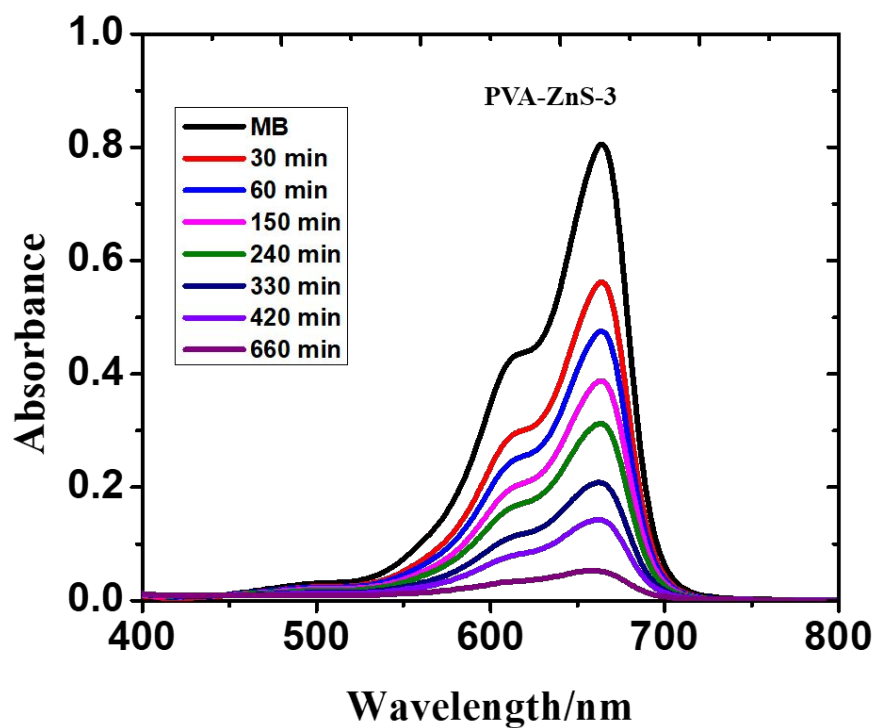
**Figure S2.** Possible hydrogen bonding between ZnS and PVA. The broken line indicates the hydrogen bond.



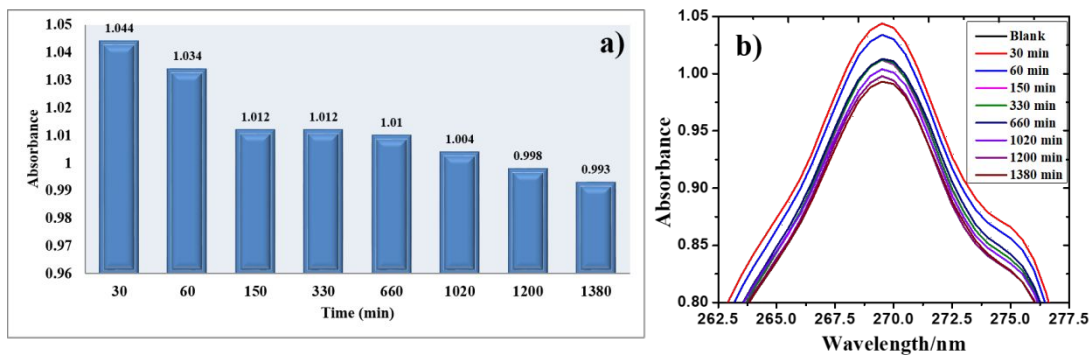
**Figure S3.** EDX spectra of a) PVA-ZnS-2, b) PVA-ZnS-3, c) PVA-ZnS-4, and d) PVA-ZnS-5 composite films.



**Figure S4.** Changes in the UV-Vis absorption spectra of MB aqueous solution under sunlight irradiation.



**Figure S5.** Changes in the UV-Vis absorption spectra of MB aqueous solution in the presence of PVA-ZnS composite films. The samples were reused (3 times) to check the photocatalytic performance.



**Figure S6.** a) Plot of the absorbance versus time for the photocatalytic degradation of phenol. b) Changes in the UV-Vis absorption spectra of phenol aqueous solution in the presence of PVA-ZnS composite films.