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Supplementary Materials for

2 **Multi-color inkless UV printing using angle-independent structural color papers**

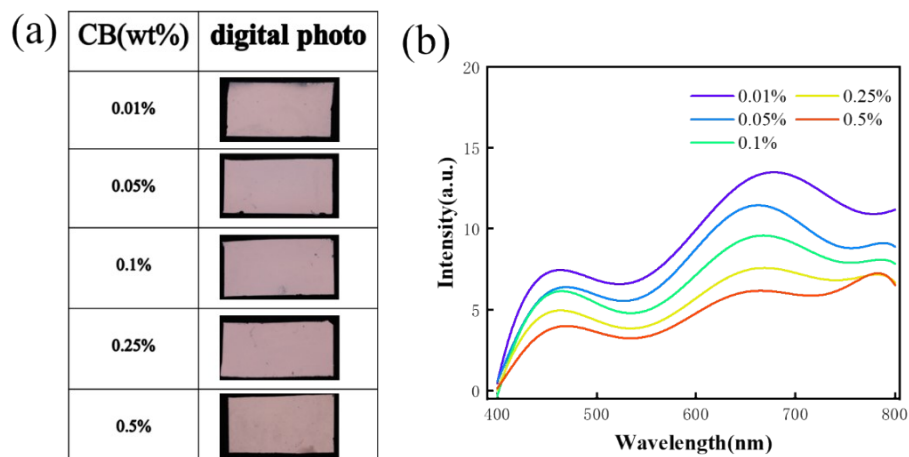
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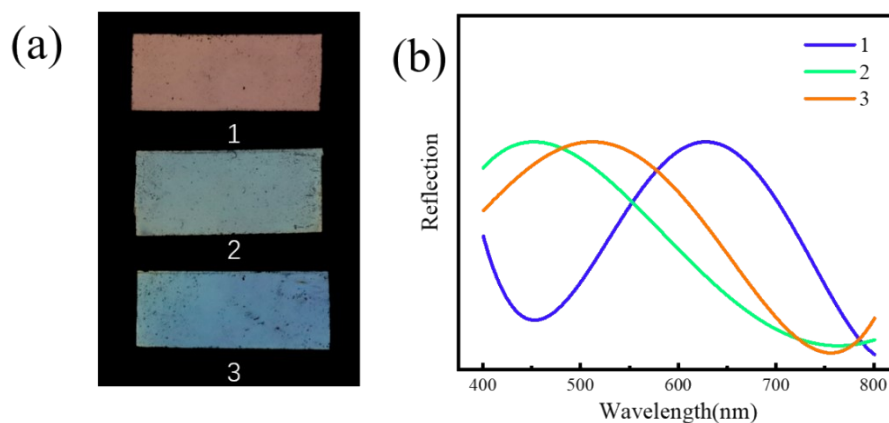
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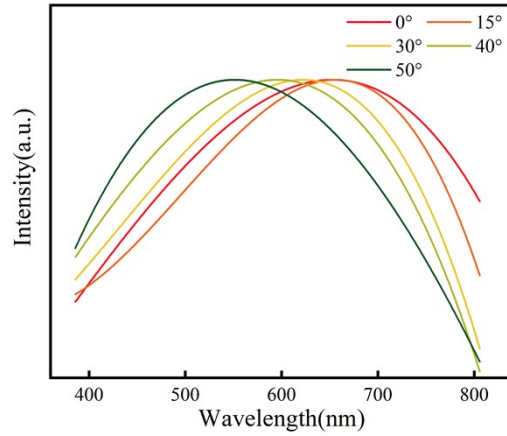
9 Fig S1: Optical photographs and reflectance spectra of photonic papers with varying
10 quantities of CB in the preparation process.

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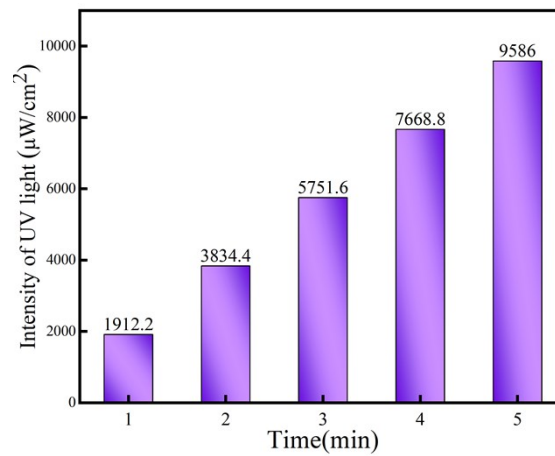
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13 Fig S2: (a) Digital photographs of amorphous color papers prepared using silica
14 particles with diameters of 250, 300, and 360. (b) Corresponding reflection spectra of
15 the structural colors papers.



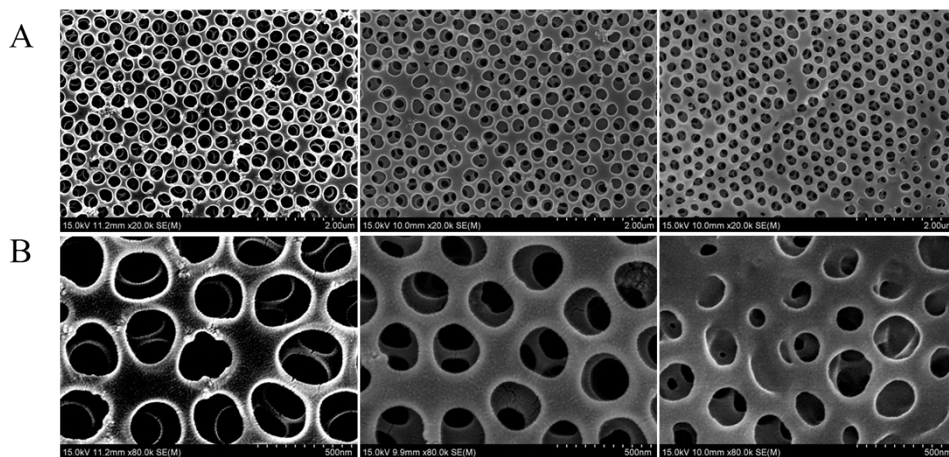
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17 Fig S3: Scattering spectra of the magenta-colored sample in Fig.1f



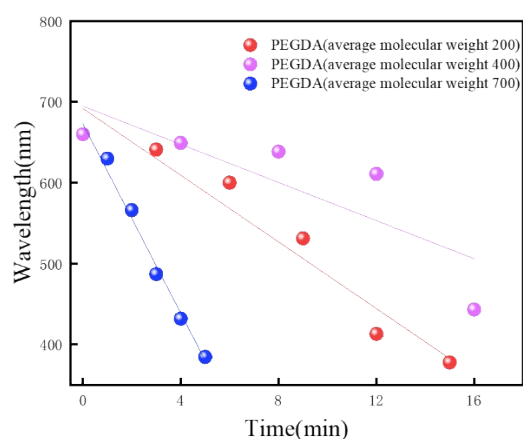
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19 Fig S4: Light intensity of UV lamp with different irradiation times



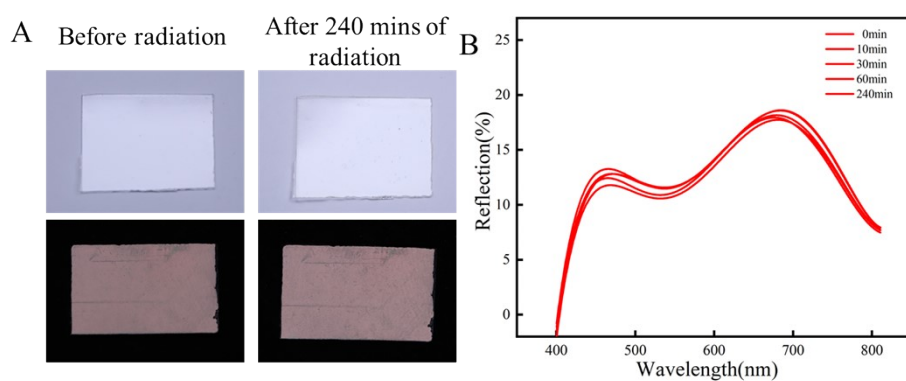
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21 Fig S5: Top-view SEM images of samples irradiated for 0 min, 3 min and 5min
 22 respectively, scale bar: 2 μm (A), 500 nm(B).



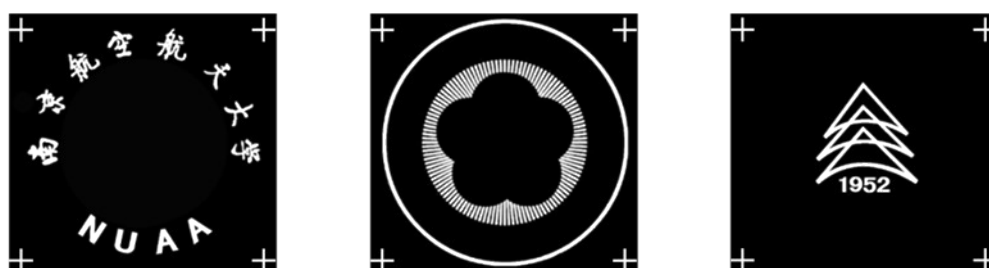
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24 Fig S6: UV response of photonic papers prepared with PEGDA precursor with
 25 different molecular weights (Mn 200, 400, and 700).



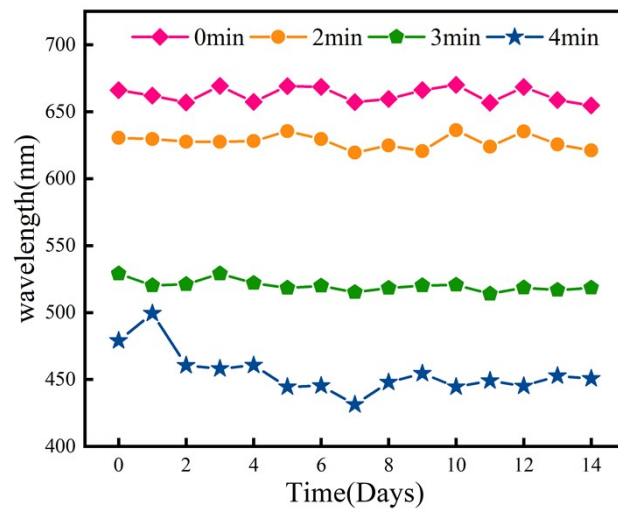
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27 Fig S7: (A) Photographs of blank PEGDA without pores and red PEGDA paper have
 28 no change after 240 mins of irradiation. (B) Reflectance spectra of PEGDA photonic
 29 paper during 240 minutes of irradiation.



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31 Fig S8: Photos of three masks utilized for the fabrication of NUA A badge pattern



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33 Fig S9: Post-radiation effects of PEGDA photonic paper irradiated various times under
34 UV.