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Supplementary Information

Multilevel Optical Data Storage in Eu^{2+}/Ho^{3+} doped Ba_2SiO_4 Phosphor with Linear Mapping between Ultraviolet Excitation and Thermoluminescence/Photostimulated Luminescence Response

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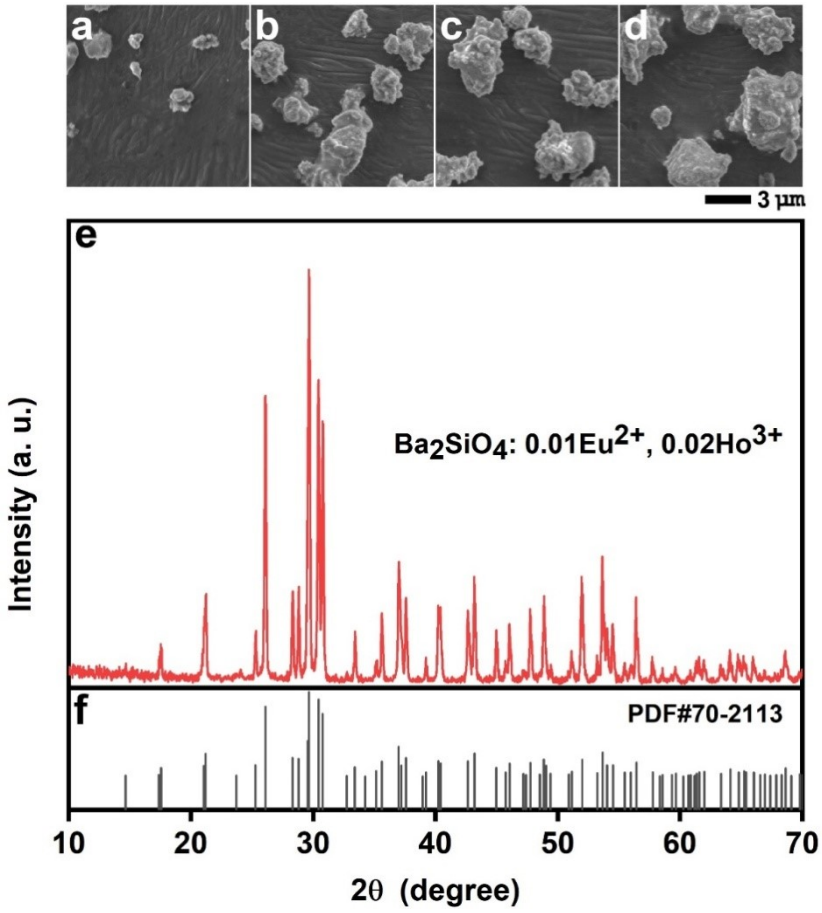

Figure S1. a)-d) SEM images of the Ba_2SiO_4:$0.01Eu^{2+}$,$0.02Ho^{3+}$phosphor powders. e) XRD pattern of the phosphor powder. f) The standard XRD pattern of the Ba_2SiO_4.

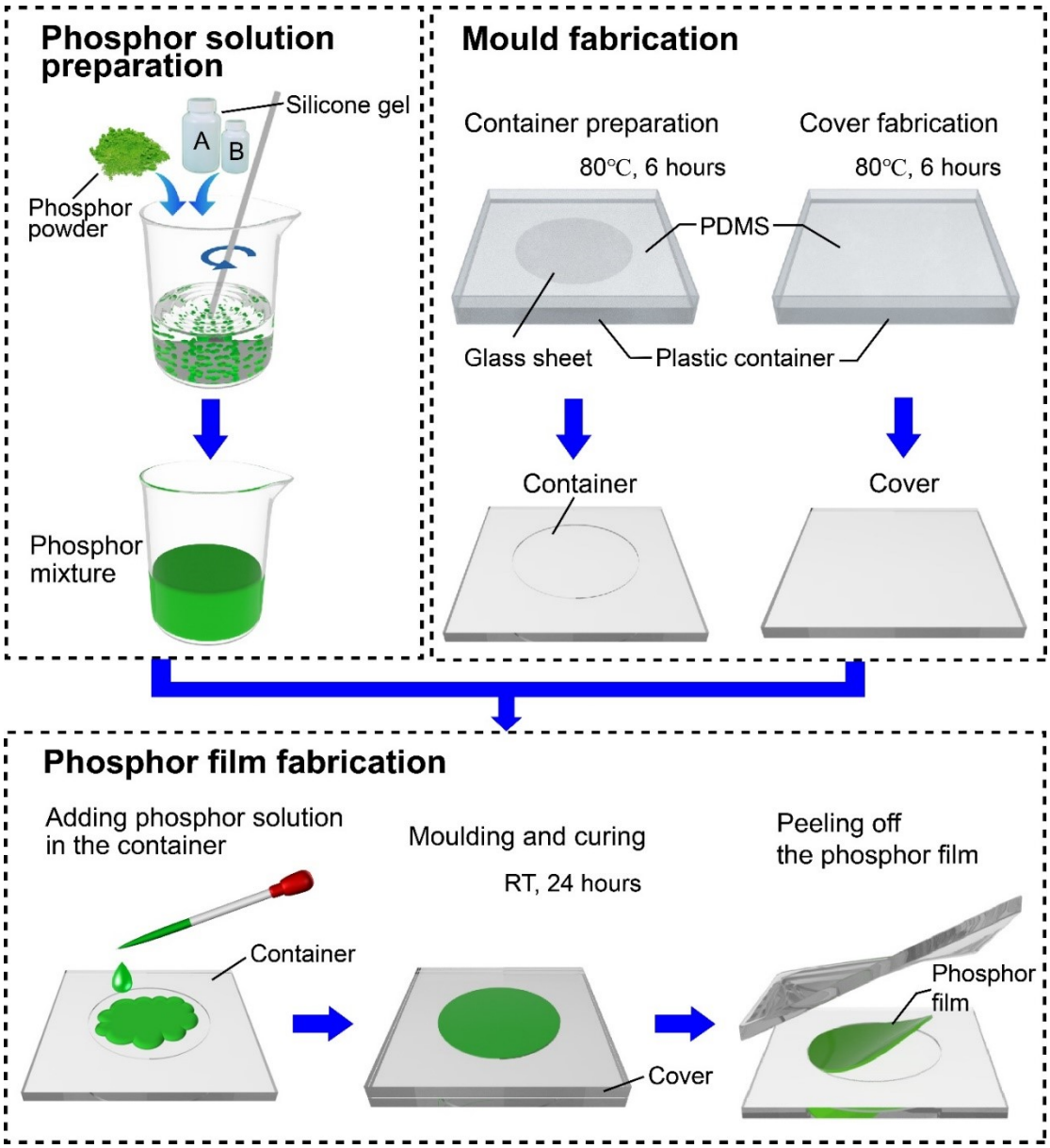

Figure S2. Fabrication of the phosphor film. Phosphor solution was prepared by mixing phosphor powder in the silicone gel. Meanwhile, a container was prepared for molding the films. Phosphor films can be casted by molding the phosphor-silicone gel in the container.

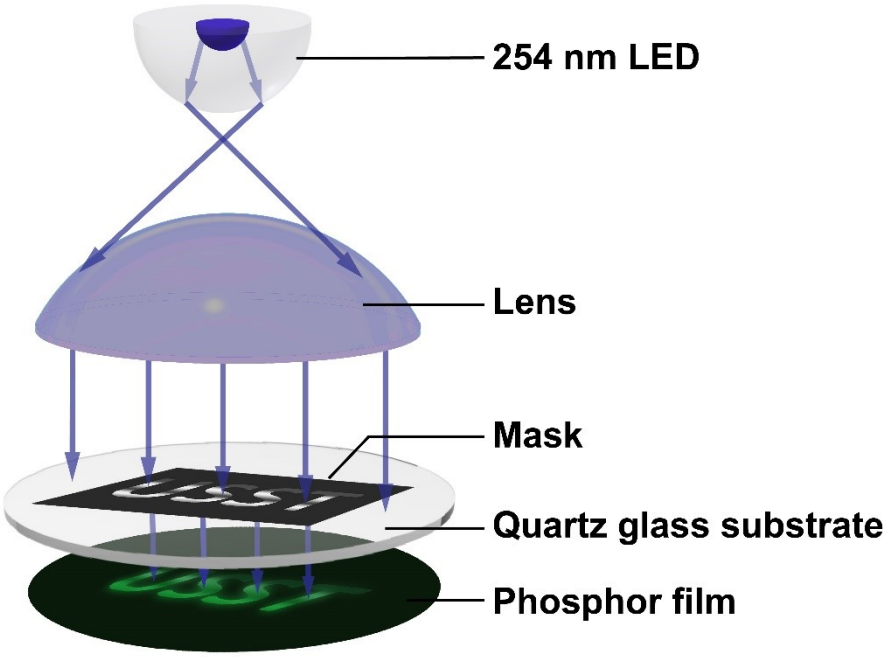

Figure S3. The experimental setup for charging the phosphor film via a gray-scale mask.

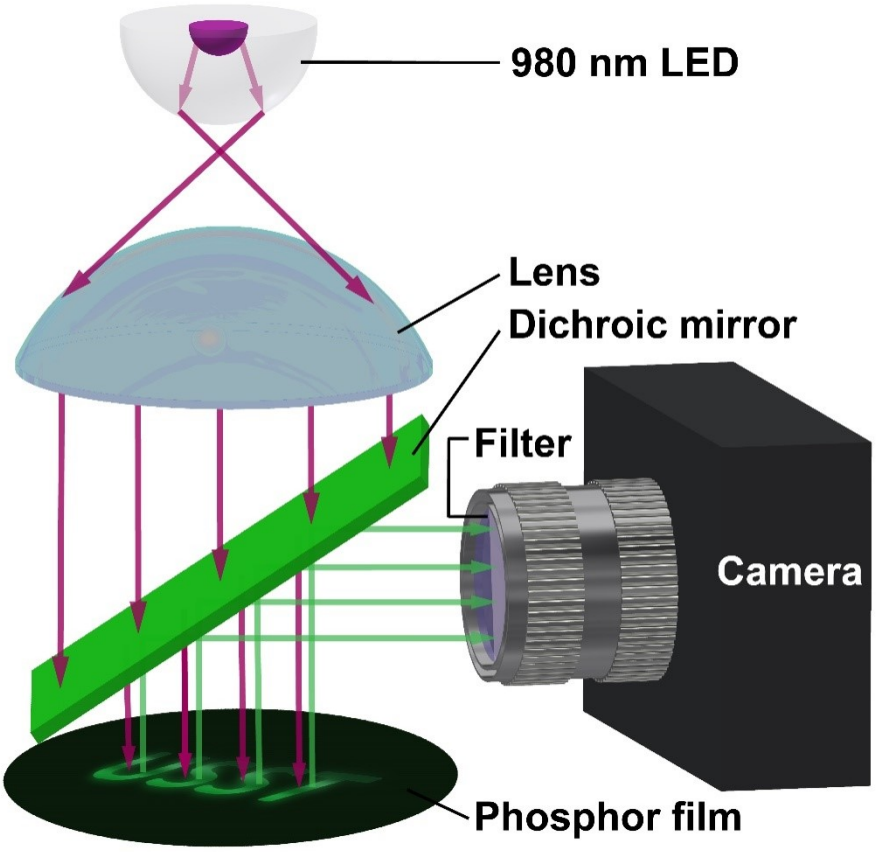

Figure S4. The experimental setup for reading out the information from the phosphor film under the 980 nm exposure.

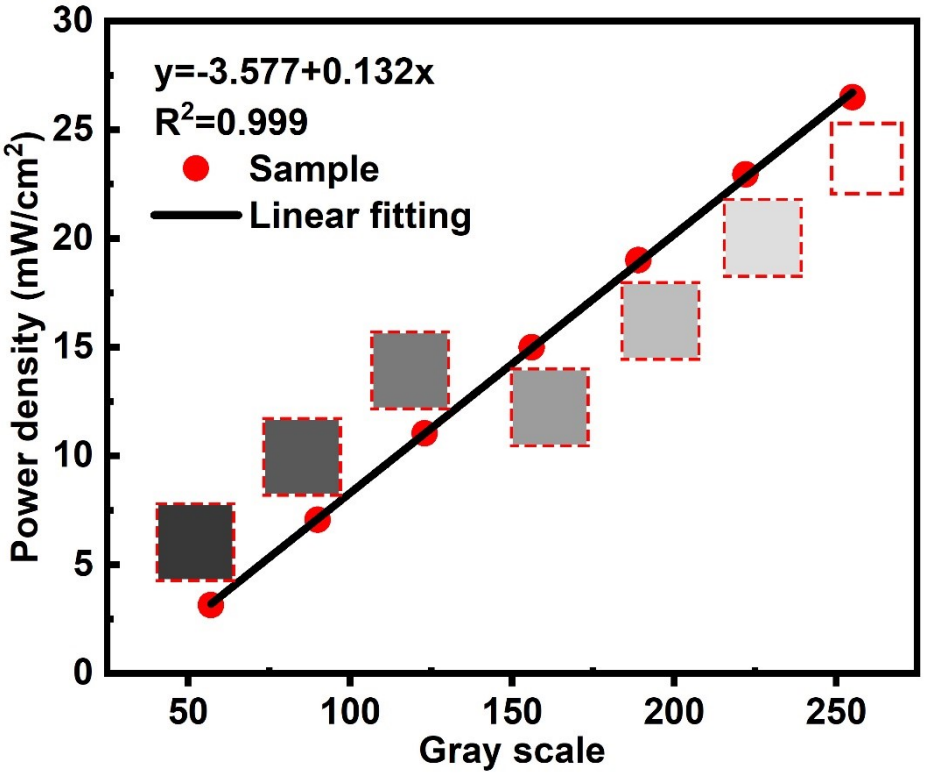

Figure S5. The power density measured behind the mask with the patterns of different gray scales.

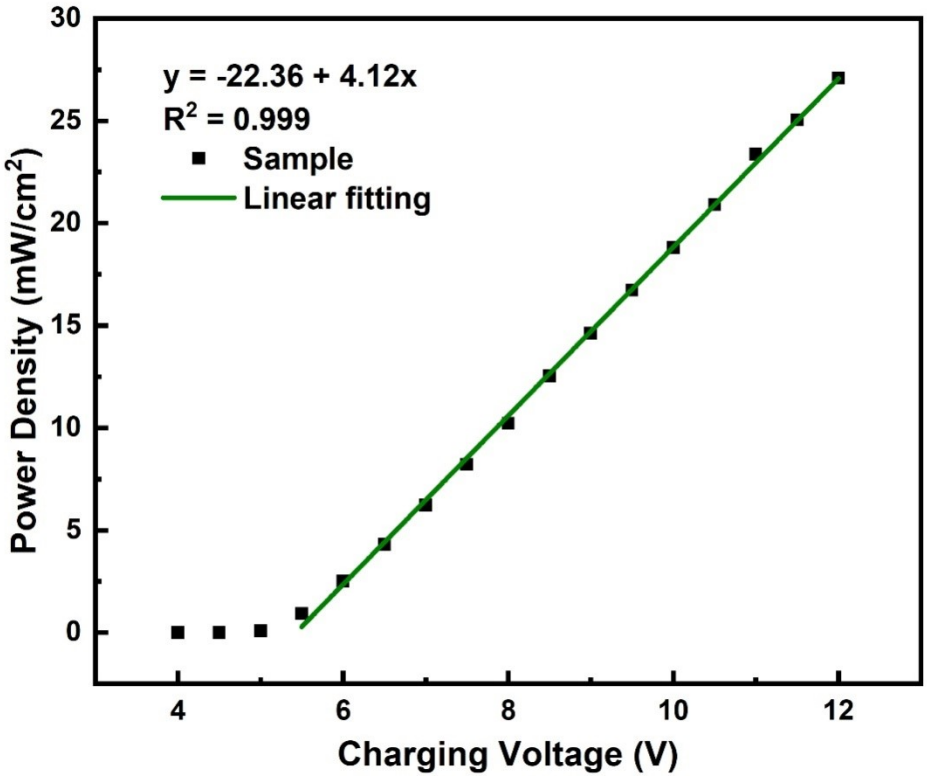

Figure S6. The relation between the output power density of the UV LED source and the driven voltage.

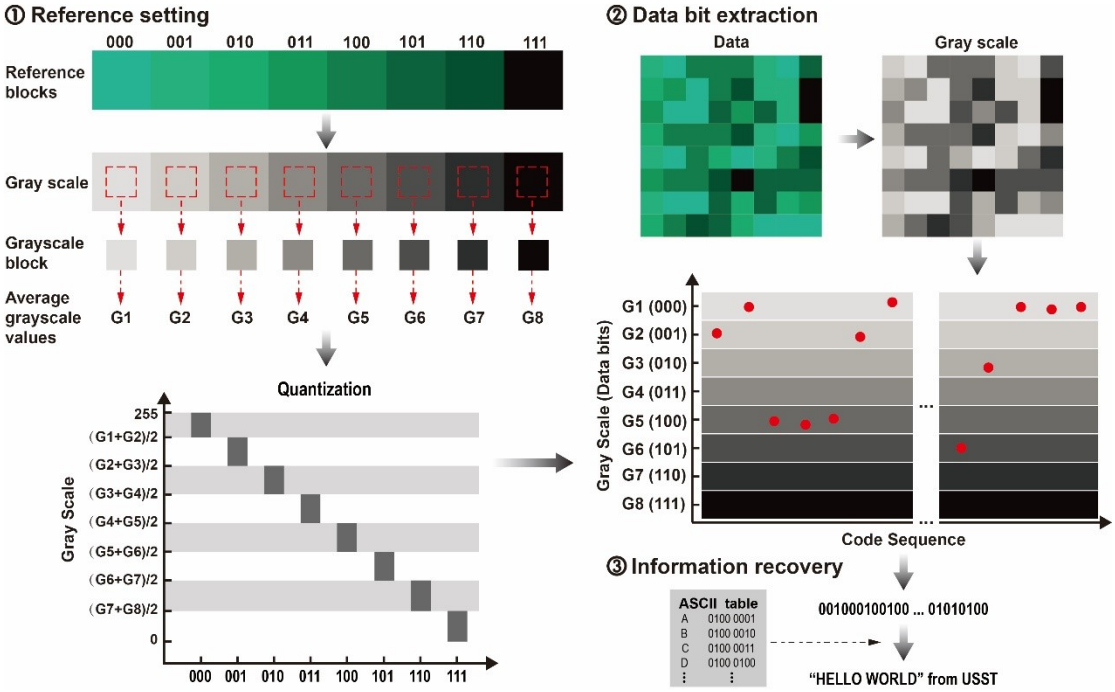

Figure S7. The data read-out procedure.