SUPPORTING INFORMATION

Laser Nanopatterning of Colored Ink Thin Films for Photonic Devices

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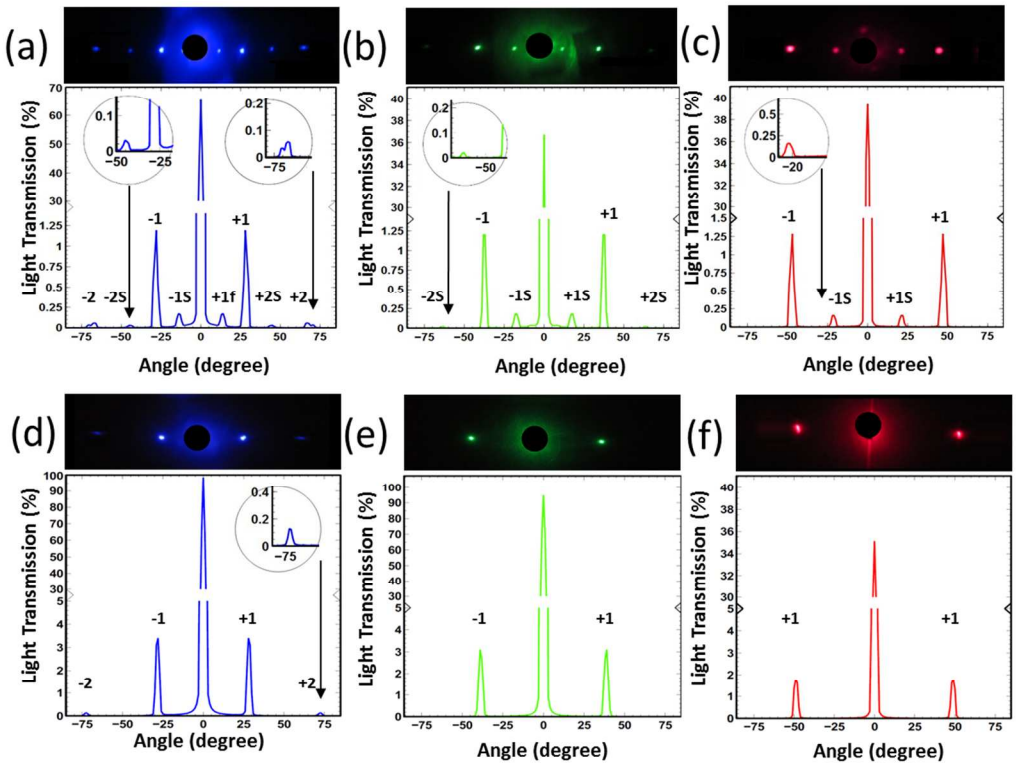

Figure S1. Nanostructure diffraction from three monochromatic lights of (405 nm, 532 nm and 635 nm) on black ink grating (0.84 nm) (a-c) Nd:YAG laser beam wavelength 532 nm (d-f) Nd:YAG laser beam wavelength 1064 nm.

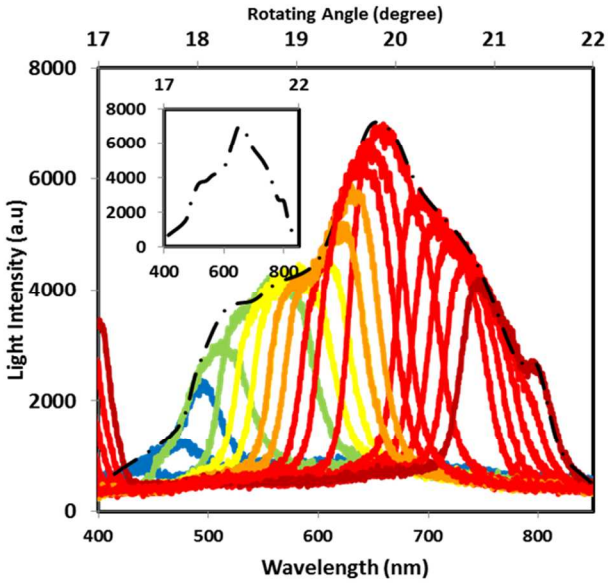

Figure S2. Angle-resolved measurements of the diffraction gratings fabricated *via* holographic DLIP for the first order of the black dye-based inks.

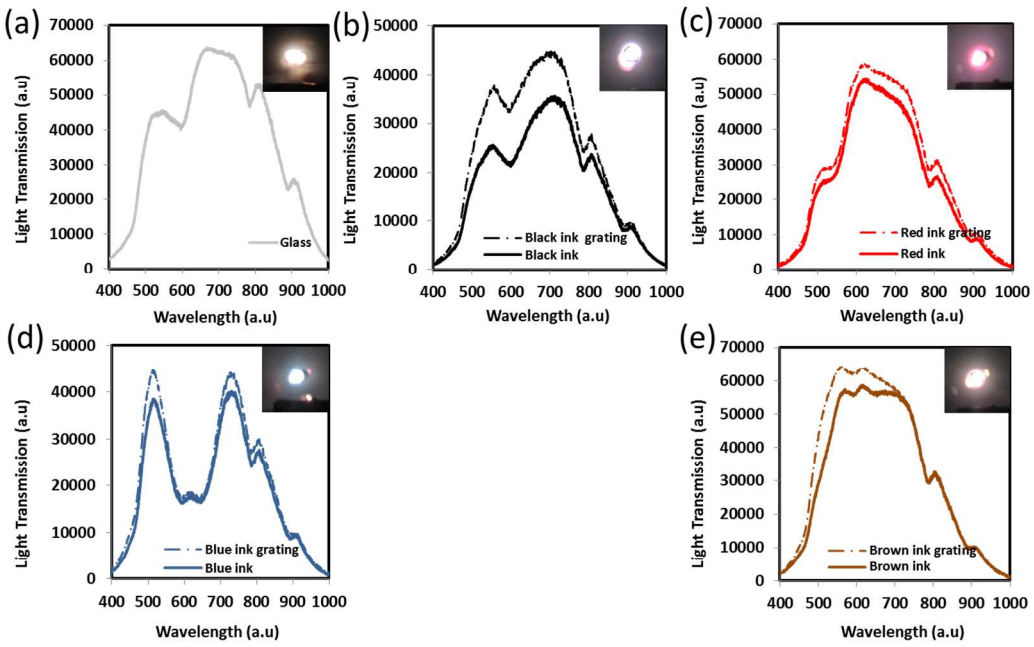

Figure S3. Transmission through 0-order (a) glass, (b) black ink, (c) red ink, (d) blue ink and (e) brown dye-based inks.

The transmissions of zero-orders were analyzed for the glass and four inks to explore the shape and the amount of diffracted and diffracted of light wavelengths from the four inks gratings. The full transmission of 3 cm thickness clear glass has measured at value of light intensity 63702 a.u (Figure 5a). The transmission of the black grating at 0-order shows that it very close wavelength distribution of the glass. However, the maximum value of transmission was 44826 a.u (Figure 5b). In addition, the red ink transmits the white light at 0-ored with different shape wavelength distribution and it is higher than the black ink grating transmission 54637 a.u. (Figure 5c). In the other hand the blue ink has two peaks of maximum transmission grating of 40185 a.u and 441101 au at 515 nm and 724 nm respectively (Figure 5d). The brown shows the maximum transmission value at 63651 a.u. at 567 wavelengths which is close to the transmission profile of glass (Figure 3S a).