Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting information for: Inkjet printing of specular holograms based on coffee-ring effect concave structure

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1. REFLECTIVE SPECTRA

The reflective spectra of TiO2 films deposited on the surface of an uncolored PET substrate and glass were prepared using a Cary 8454 (Agilent Technologies) UV-Vis spectrophotometer with an adapted film holder. The reflective spectra of the films are shown in Figure S1.

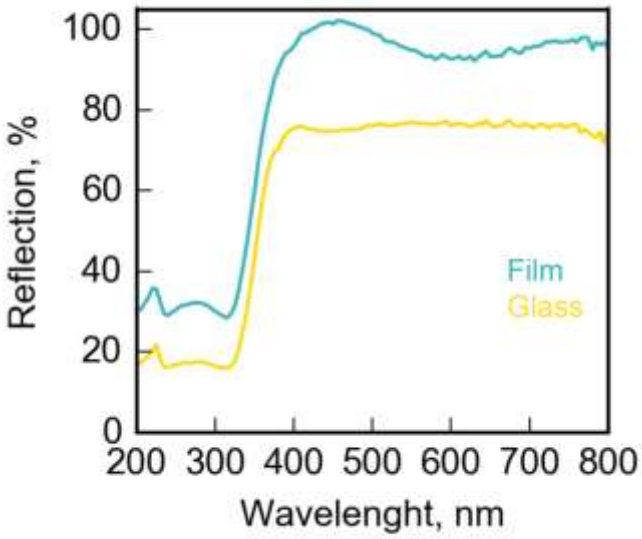

Fig. S1 - Reflective index thin films of titanium dioxide deposited on PET film and glass substrate.

2. DYNAMIC LIGHT SCATTERING (DLS) AGGREGATION MEASUREMENTS

The size distribution of TiO2 sol and ink based on sol were prepared using a Photocor. Graph of the size distribution are shown in Figure S2.

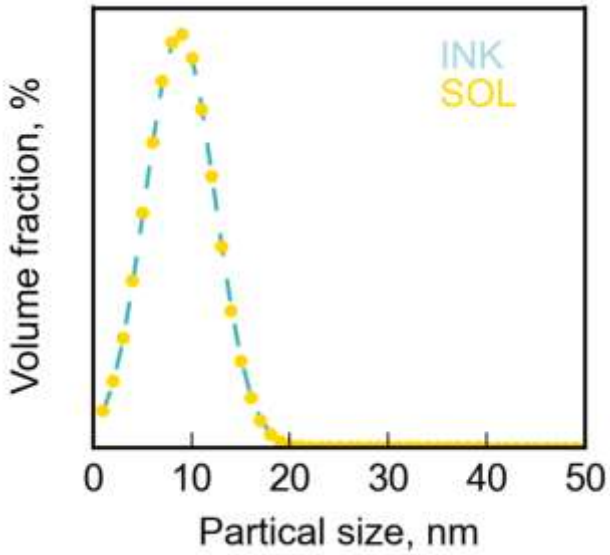

Fig. S2 – Size distribution of sol TiO_2 and ink based on sol.

3. TEM IMAGE

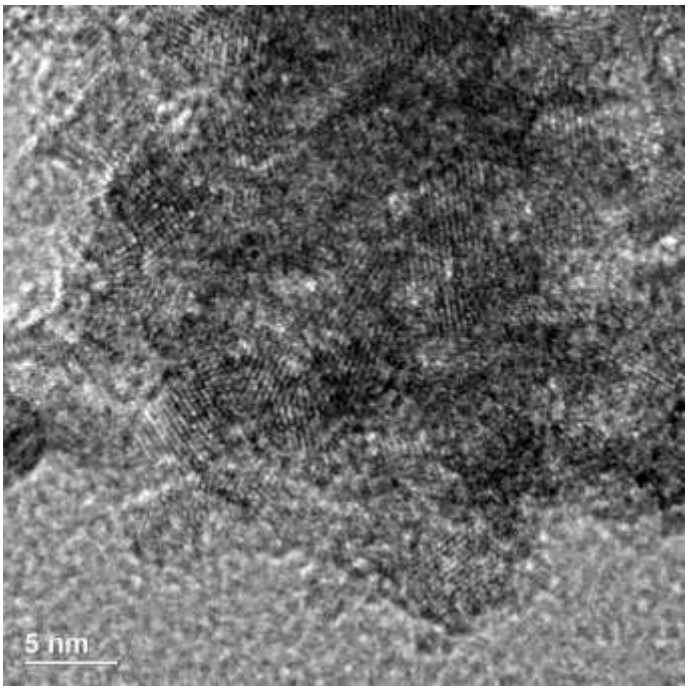

Fig. S3 - TEM image of titanium dioxide nanoparticles.

4. XRD

The X-ray of TiO2 powder was prepared using a Rigaku Smart Lab 3 diffractometer. The diffraction pattern of the powder is shown in Figure S4.

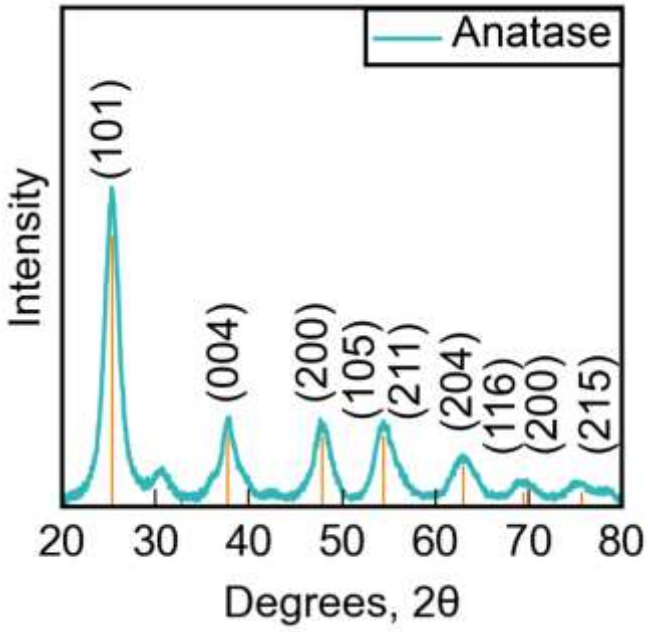

Fig. S4 - X-ray powder pattern of as synthesized TiO2 nanoproducts with highlighted characteristic diffraction peak of anatase.

5. PRINTED SAMPLE

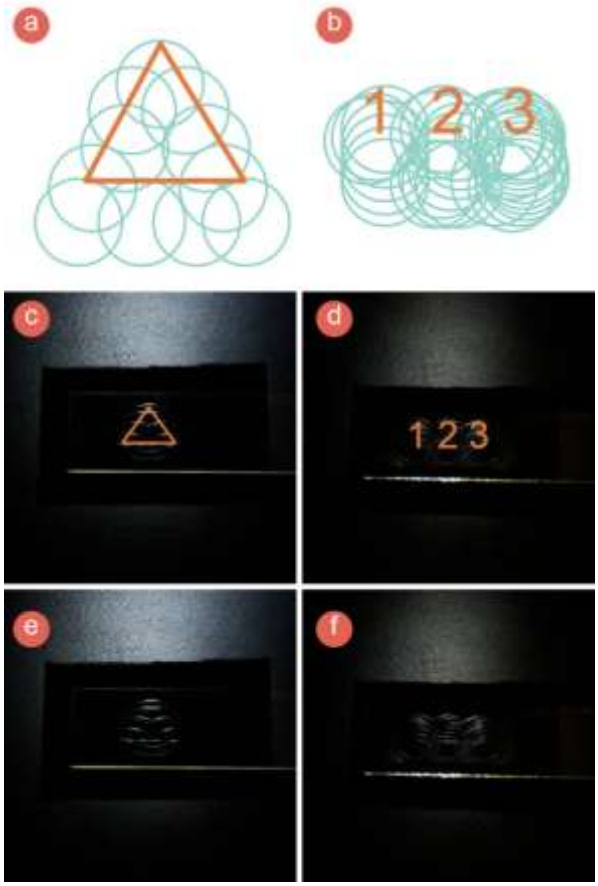

Fig. S5 – printed image. a, b – print pattern + encoded image; c, d – printed image + scheme; e, f - glare forming the coded image.

6. ADDITIONAL CHARACTERIZATION

The samples for transmission electron microscopy (TEM) were prepared by dispersing small amounts of samples in ethanol to form a homogeneous suspension. Photographs and video of the samples were taken by the camera Nikon D800 with lens AF-S NIKKOR 18-55 mm f\ 3.5 without using additional flash.

7. VIDEO LINKS

https://youtu.be/nGrRzXkVzZY
https://youtu.be/p80ewWRhUCc
https://youtu.be/fFtNBepIK8I