CdS quantum dot-functionalized cellulose nanocrystal films for anti-counterfeiting applications


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Fig. S1. TEM images of CNC-COOH@CdS (A) and pdsCNC-PEI@CdS (B) under higher magnification.

Fig. S2. XRD patterns of CNC-COOH@CdS (a) and pdsCNC-PEI@CdS (b). Diffraction peaks from CNCs (diamonds) and QDs (stars) are also labelled.
**Fig. S3.** TGA patterns of CNCs, CNC-COOH@CdS and pdsCNC-PEI@CdS.

**Fig. S4.** Size distributions of CNC-COOH@CdS and pdsCNC-PEI@CdS measured using a Malvern Nano ZS90 Zetasizer DLS system.
Fig. S5. Top view SEM image (A) and fluorescence microscope image (B) of (CNC-COOH@CdS/pdsCNC-PEI@CdS)$_{30}$ modified PET substrate.

Fig. S6. Transmittance spectra of raw PET film (a), PET film coated with (CNC-COOH@CdS/pdsCNC-PEI@CdS)$_{30}$ (b), and PET film modified first with (CNC-COOH@CdS/pdsCNC-PEI@CdS)$_{25}$ and then (PSS/pdsCNC-PEI@CdS)$_{5}$.
Fig. S7. Optical microscopy image of PET substrate under polarized white light source.