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Supplementary Materials

Cellulose Nanocrystals as Template for Improving the Crystallinity of Two-Dimensional Covalent Organic Framework Films

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(a) (b) (c)

Figure S1. (**a**) Optical image of COF-366 film with PTSA and CNCs; (**b**) Optical image of COF-366 film without CNCs; (**c**) image of COF-366 film without PTSA.

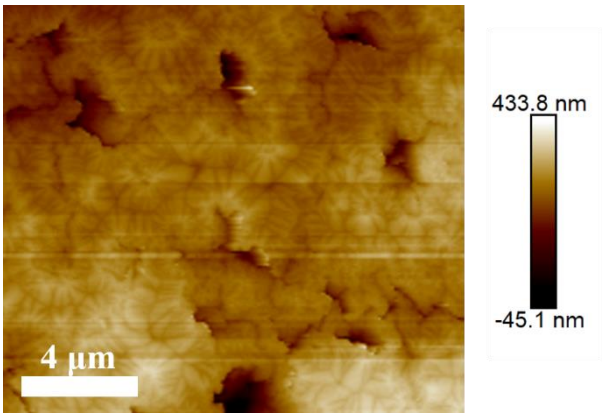

Figure S2. AFM image of the film without CNCs.

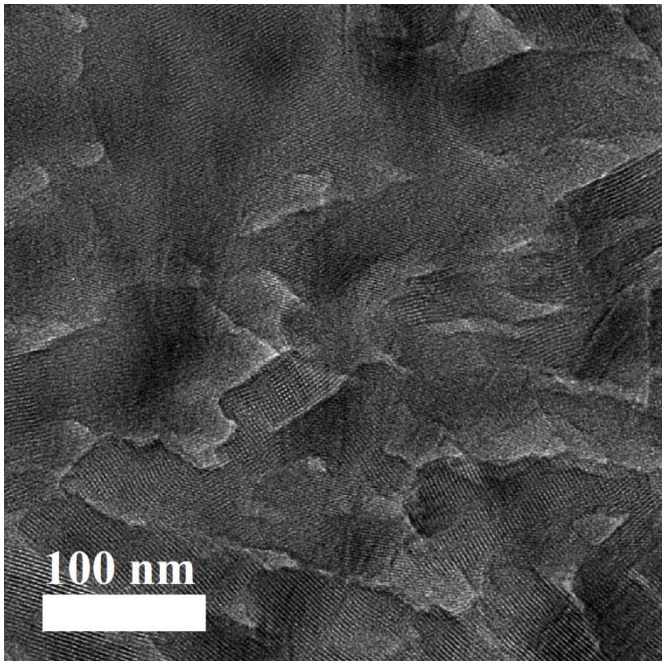

Figure S3. HR-TEM image of the flower center in COF-366 film 100 μL CNCs.

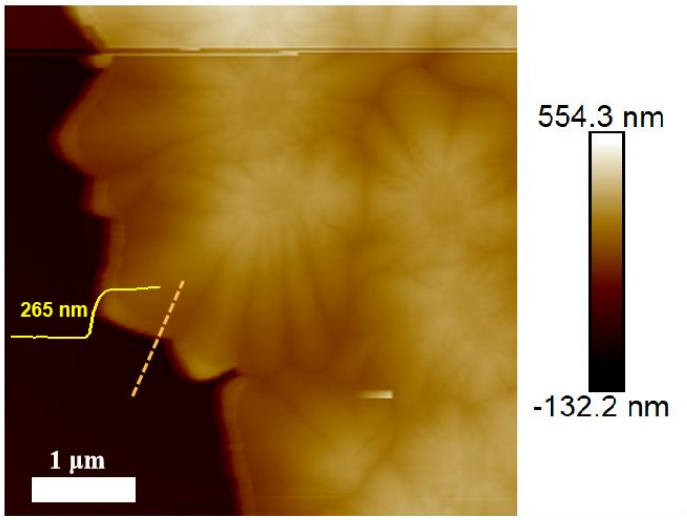

Figure S4. AFM height image of COF-366 film with 100 μL CNCs and the corresponding line profiles.

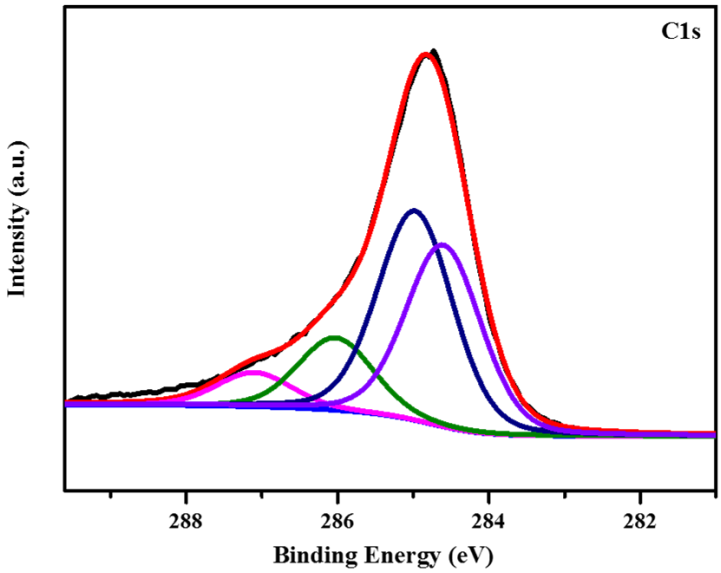

Figure S5. XPS spectra of C1s. There were four binding energy peaks at 284.6, 285.0, 286.1, and 287.2 eV in C1s signal spectra, belonging to aromatic carbon (aromatic: C=N, porphyrin units and benzene rings; pink curve), air pollution (green curve), C-N/ C-O bonds (blue curve), and aromatic carbon satellites (purple curve), respectively; fitting curve (red curve).

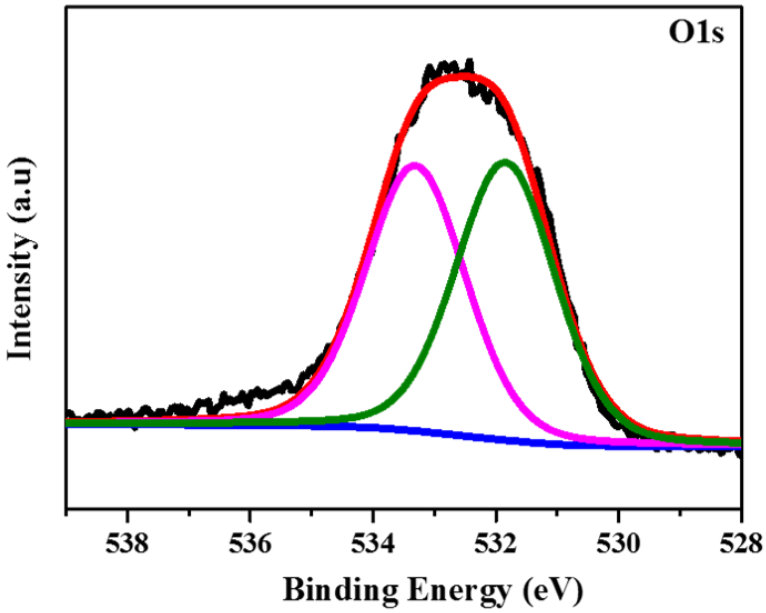

Figure S6. XPS spectra of O1s. There are two peaks with BEs at 533.3 and 531.9 eV, which are attribut-ed to air contamination, and water and hydroxyl groups in the COF-366 film, respectively; background (blue curve); fitting curve (red curve).