Supporting Information

Acetylated nanocellulose for single-component bioinks and cell proliferation on 3D-printed scaffolds

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This Supporting Information document includes reference to three (3) videos and four (4) figures in five (5) pages.

Videos of 3D printing monocomponent nanocellulose inks

The videos, found online, display the process of 3D printing of CNF 1.88 wt%, TOCNF 1.7 wt% and AceCNF 0.5 wt%. Swelling of CNF after extrusion results in the “merging” of the extruded filaments while TOCN and AceCNF objects retain effectively their structure after 3D printing.

(a) CNF

(b) TOCNF

(c) AceCNF

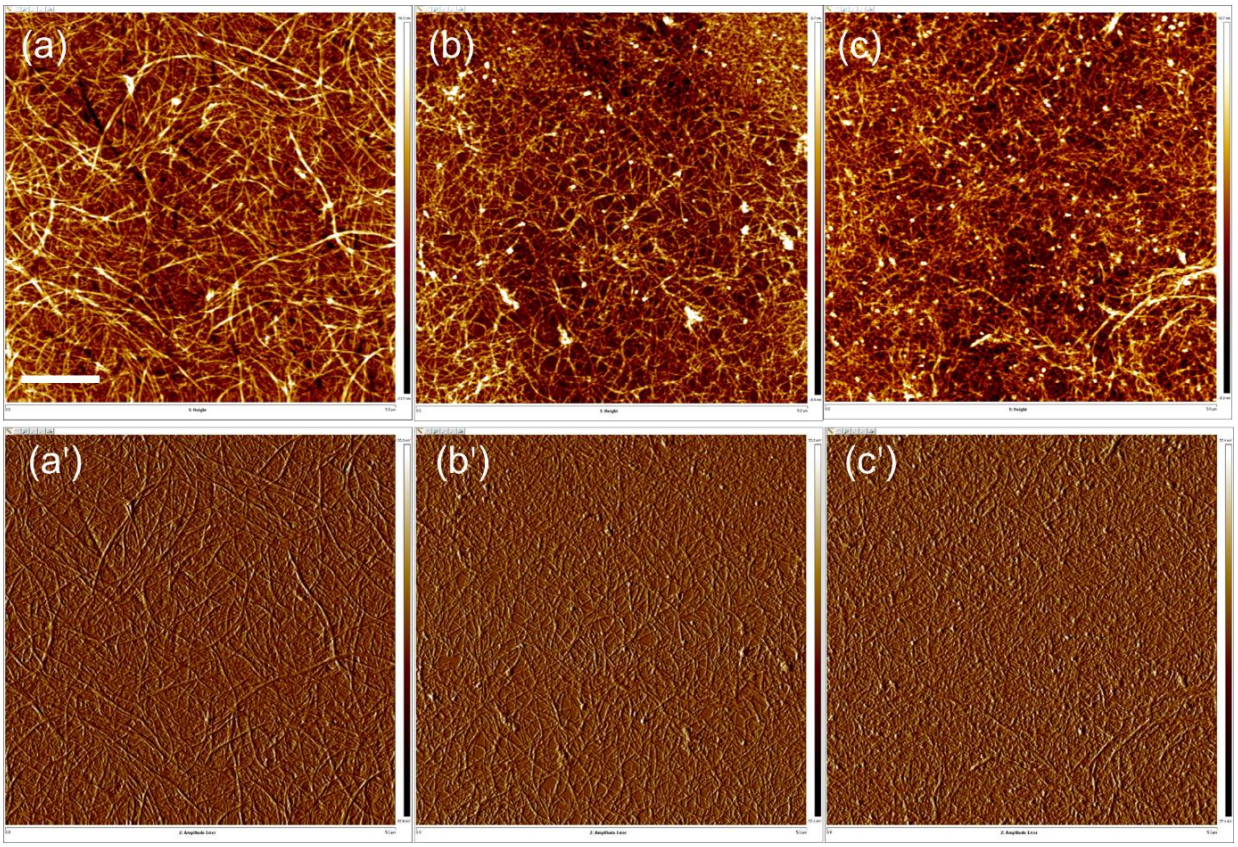

Figure S1. Atomic force microscopy (top) and amplitude error images of the samples. (a, a') CNF, (b, b') TOCNF and (c, c') AceCNF. The images are 5 µm x 5 µm and the scale bar is 1 µm.

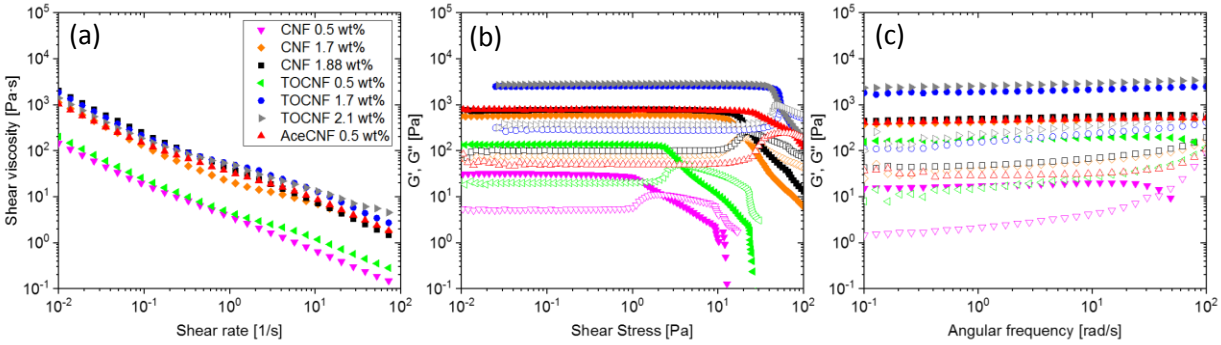

Figure S2. Rheological behavior of nanocellulose inks at the tested concentrations. (a)Viscosity flow curve; and storage and loss moduli as a function of (b) shear stress and (c) angular frequency. The solid and open symbols represent *G′* and *G″*, respectively.

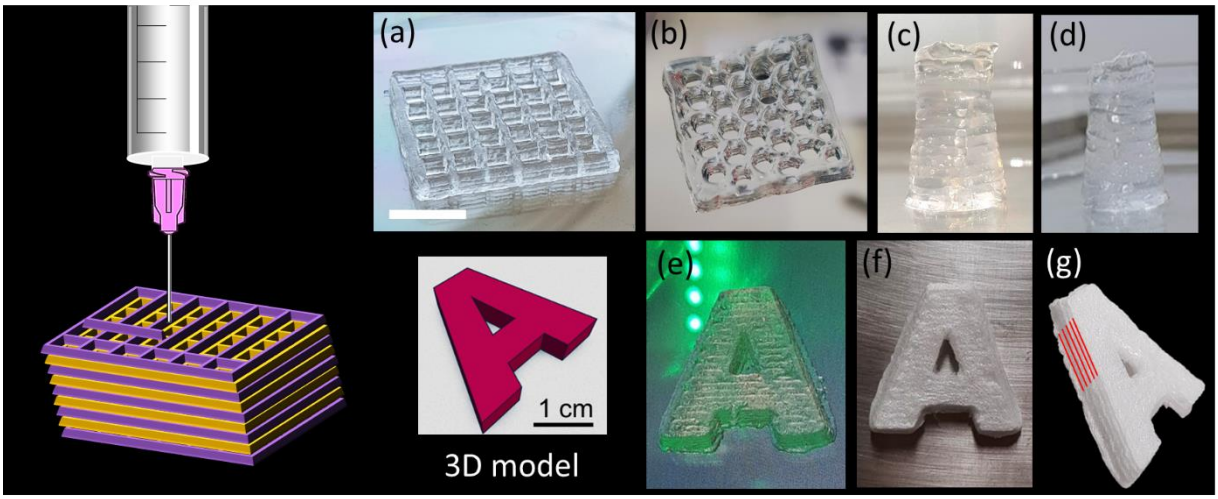

Figure S3. Schematic illustration of 3D printing with CNF ink of different structures: (a) Rectangular scaffold and (b) honeycomb infill pattern. (c-d) TOCNF, AceCNF layer deposition in a vertical structure of up to 2 cm in height. (e-g) 3D printing of letter "A" in wet and dry states as well as an illustration of layers deposition. The scale bar is 1 cm.

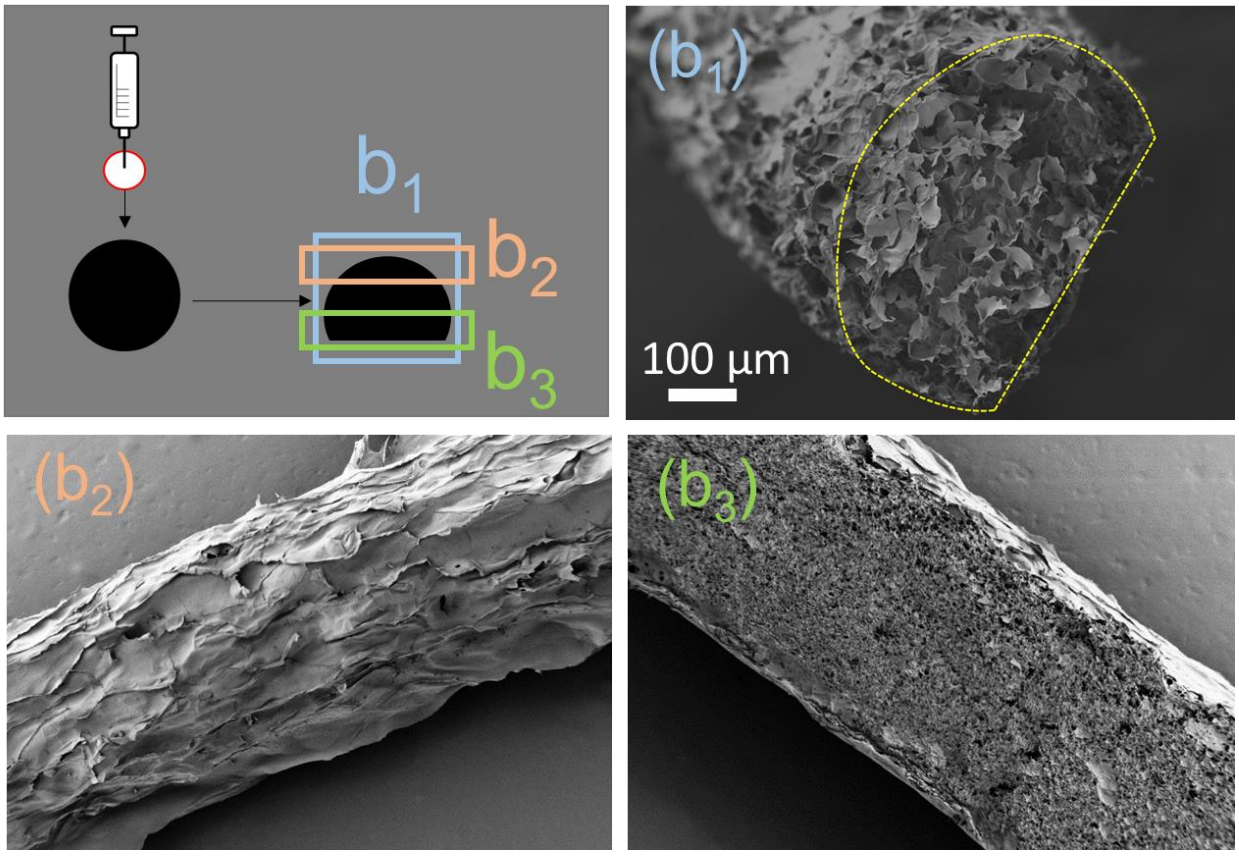

Figure S4. (a) Flattening of TOCNF filaments after 3D printing. (b_1) TOCNF filament cross section. (b_2) Rough (top) and (b_3) porous (bottom) of TOCNF after 3D printing. The scale bar is 100 µm.