

Electric field-modulated evaporative thin film deposition of bio-particles for piezoelectric applications

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1. Supplementary Information

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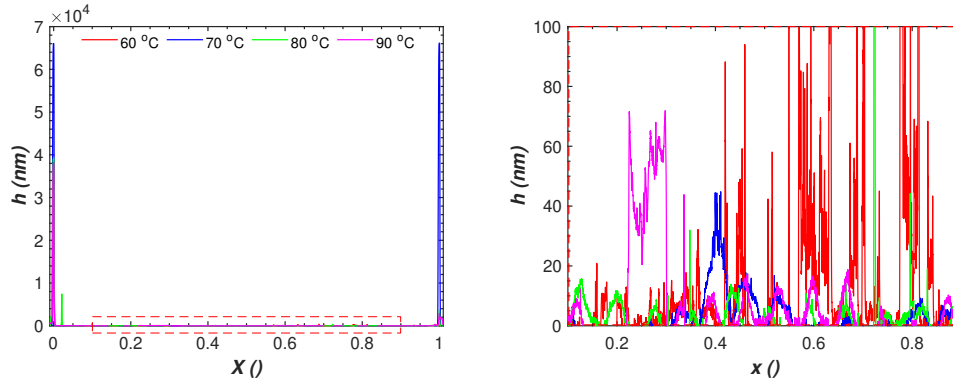


Figure S. 1: Effect of temperature on confined evaporative deposition of 0.1 wt% CNC suspension in the absence of an electric field. (a) Height profiles along the central line between electrodes versus scaled length. (b) Central section of the films excluding ridges at the boundary.

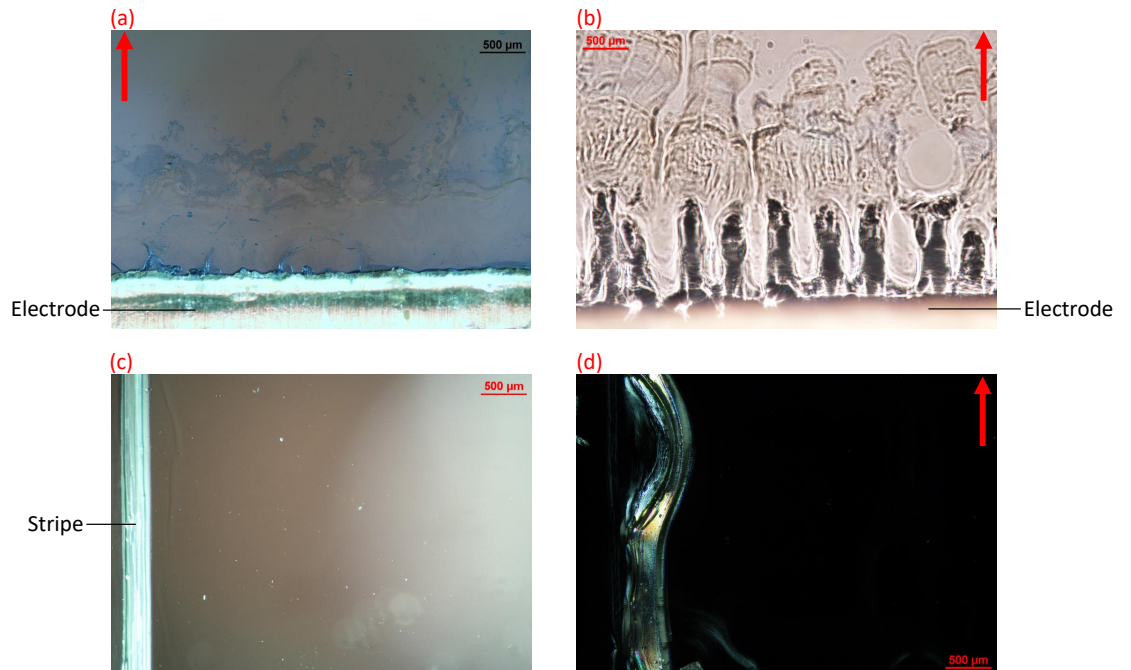


Figure S. 2: Excess particle accumulation near an electrode in the films formed from (a) 0.1 wt% and (b) 1.0 wt% CNC suspensions in 10 V/cm dc field. (c) Thick ridge formation at the film boundary from 1.0 wt% CNC suspension in the absence of an electric field. (d) The ridge starts spreading and distorting when the field turns to AC with $f = 1$ Hz keeping the magnitude constant. All the deposits are cast at 90°C .

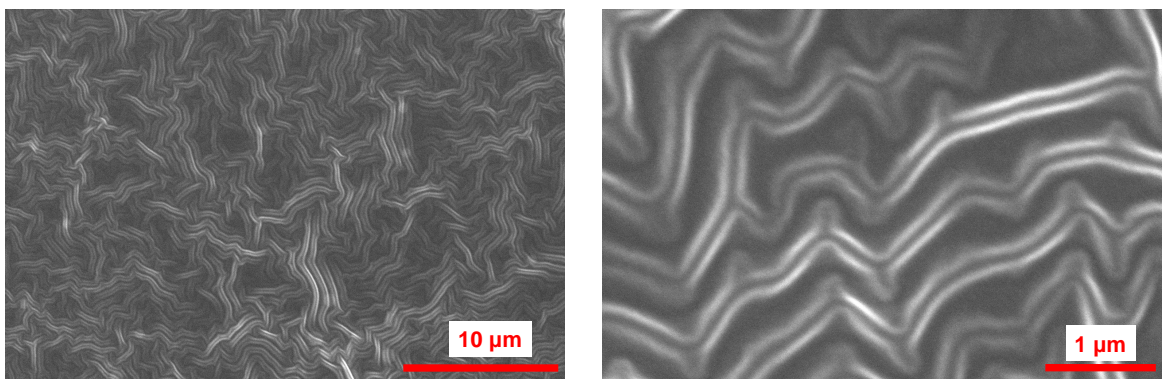


Figure S. 3: SEM images showing microtexture of chitin nanocrystal thin films deposited from 1 wt% suspension at 90° C in the absence of an electric field.