

Supporting information

Chitosan based dielectrics for use in single walled carbon nanotube-based thin film Transistors

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Figure S1. AFM image of the SWCNT network when depositing a) 1 drop and b) 2 drops of the semiconducting ink on the channel, and the processed AFM images used in carbon nanotube linear density calculations for c) 1 drop and d) 2 drops of SWCNT deposited.

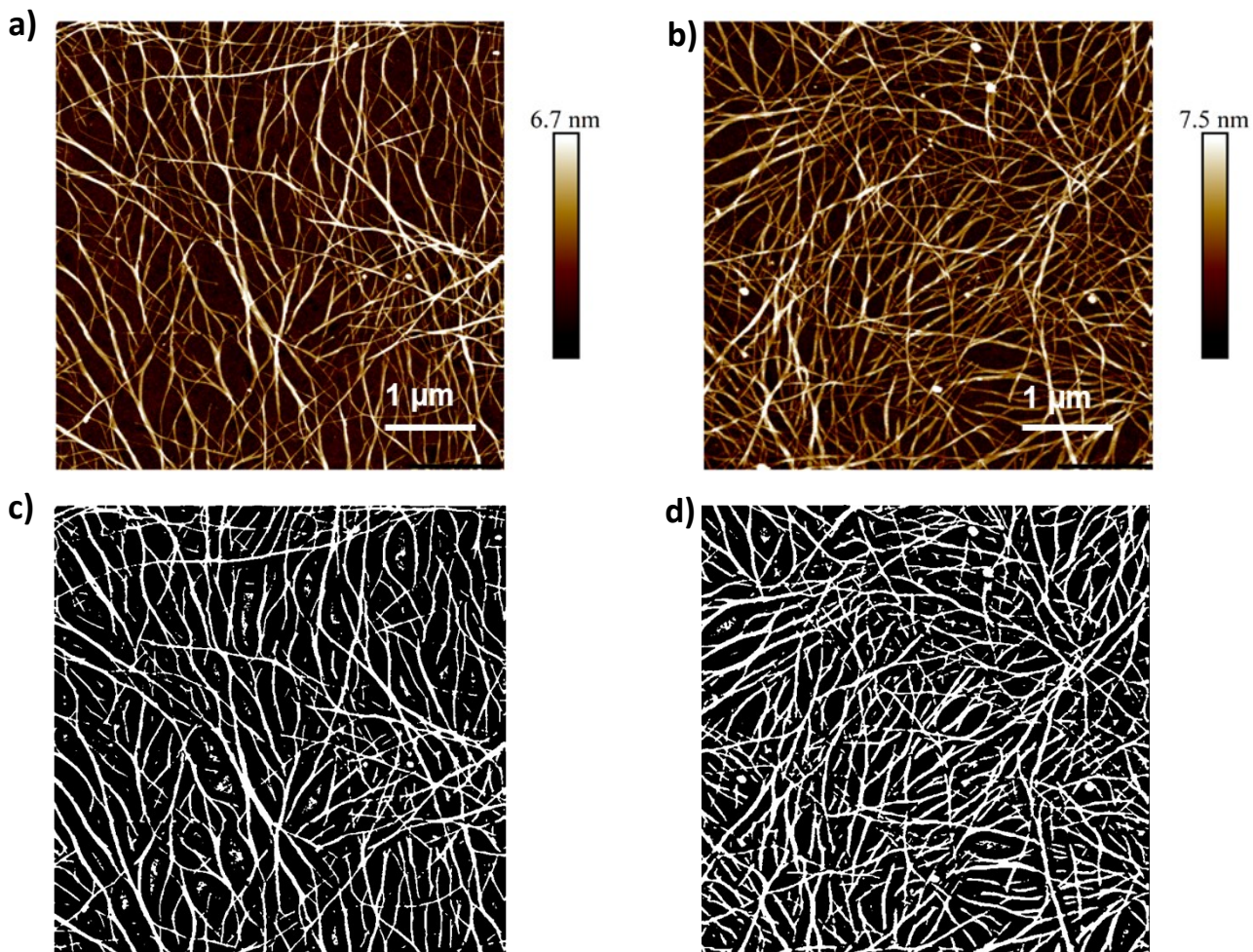


Table S1. The thickness and dielectric constant of capacitors fabricated with a solution of 1% chitosan in various acid concentrations.

Acid Concentration	Dielectric Constant	thickness (nm)
1% AA	110.5 ± 38.1	250.1
2.5% AA	149.4 ± 56.9	200
5% AA	238.4 ± 73.8	186.2

Table S2. The thickness and dielectric constant of capacitors fabricated with a solution of 2% chitosan in various acid concentrations.

Acid Concentration	Dielectric Constant	thickness (nm)
2% AA	13.8 ± 3.1	762.1
5% AA	59.1504 ± 12.1	630.7
10% AA	167.4138 ± 53.3	664.4

Table S3. The mobility and capacitance density values calculated using the parallel plate model vs. Cao model at 10Hz (the testing frequency).

Fabrication conditions	SWCNT Linear Density (μm^{-1})	C_{Cao} (nF. mm^{-2})	C_{PP^*} (nF. mm^{-2})	Hole mobility PP ($\text{cm}^2.\text{V}^{-1}\text{s}^{-1}$)	Hole mobility Cao ($\text{cm}^2.\text{V}^{-1}\text{s}^{-1}$)
5%AA - 1 drop NT	5.42	0.25	0.31	18.5	20.9
5%AA - 2 drops NT	6.19	0.27	0.31	36.9	41.7
2%AA – 1 drop NT	5.42	0.19	0.22	9.4	10.3
2%AA – 2 drops NT	6.19	0.20	0.22	7.3	7.9

* PP: Parallel plate