

Supporting Information

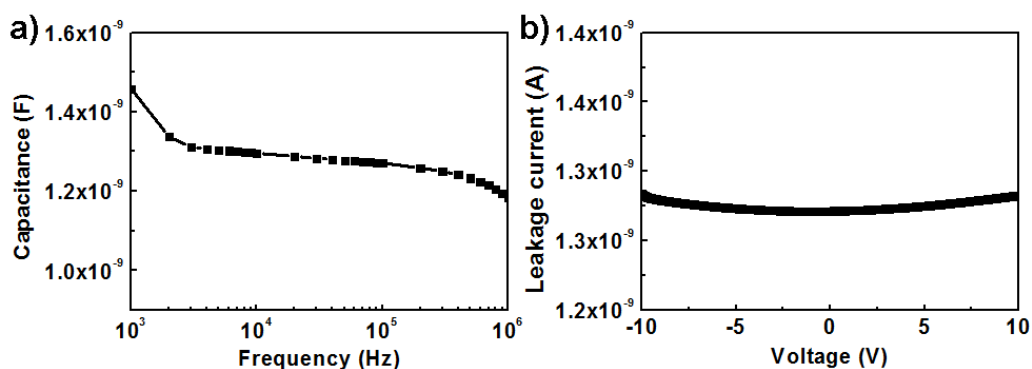


Figure S1. The F-C and I-V curves of 50 nm HfO_x thin film by ALD. As shown in Figure S1, the effective capacitance of 50 nm HfO_x is about 1.29×10^{-9} F, and the corresponding effective area is 6.6×10^{-7} m². So the capacitance per unit area is ~ 0.196 μ F cm⁻². To evaluate the quality of HfO_x, the leakage current of the capacitor was measured at the applied voltage in the ranges -10 to 10 V. As illustrated in Figure S1b, leakage current is about 10^{-9} A, suggesting that it can be used to act as the dielectric layer.

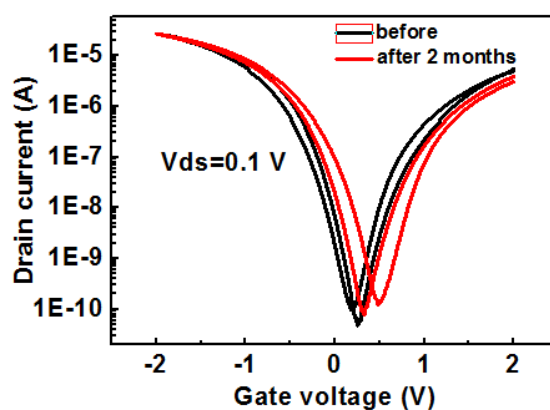


Figure S2. Typical transfer characteristics of printed top-gate TFTs before and after 2 months.

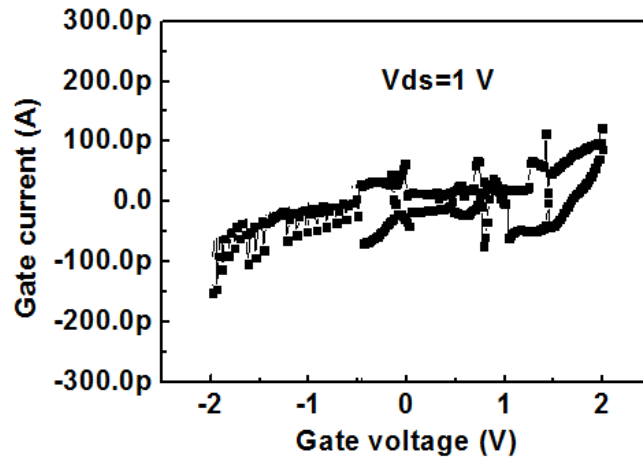


Figure S3. Leakage current of printed top-gate SWCNT TFTs using 50 nm HfO_x as dielectric layer.

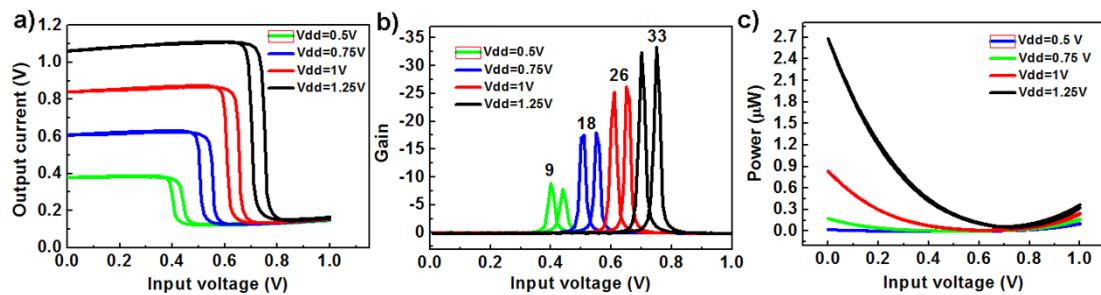


Figure S4. a) The voltage input-output, b) gain characteristics, and c) the power consumption of a printed inverter with different supply voltages after repeatedly bending 100 times. The maximum voltage gain is 9, 18, 26 and 33, respectively.