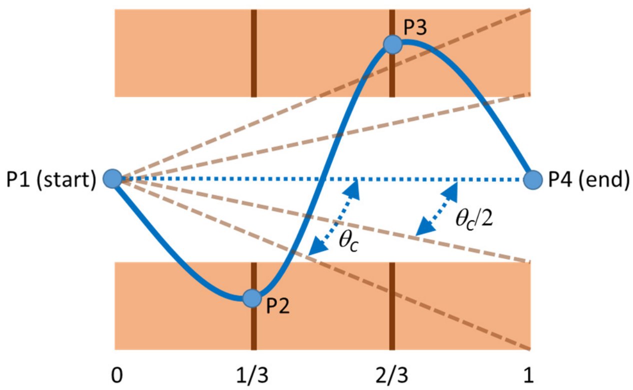

Figure 1. Schematic illustration of the generation of a curvy nanowire using 3rd-order Bézier curves. θ_c denotes the curviness angle, which specifies the degree of curviness of the nanowire.

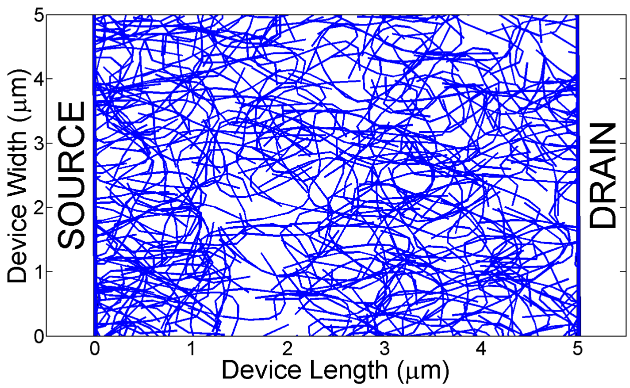

Figure 2. A random network of curvy nanowires generated using our Monte Carlo simulations with a curviness angle of $\theta_c = 81^o$.

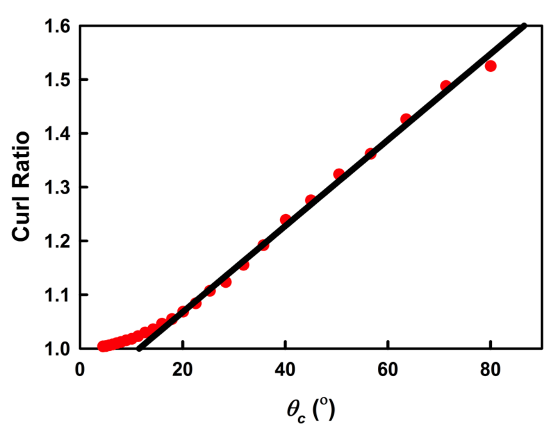

Figure 3. Curl ratio versus curviness angle obtained from our simulations. Curl ratio is defined as the ratio between the curved length of a nanowire and the straight distance between its two ends.

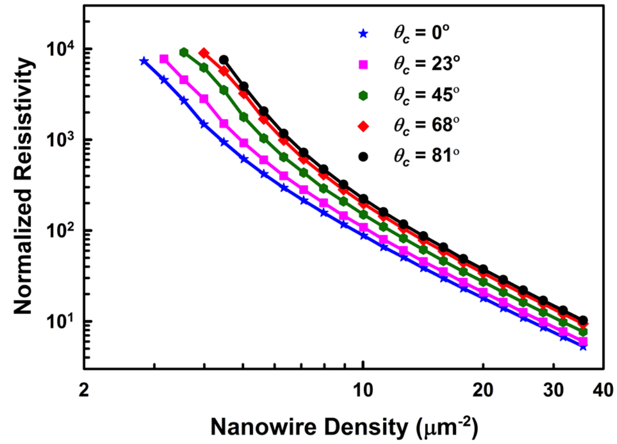

Figure 4. Log-log plot of normalized resistivity versus nanowire density for five different curviness angle values ranging from 0° to 81°. The other simulation parameters are nanowire length $l_w = 2$ μm, device length $L = 10$ μm, device width $W = 10$ μm, and alignment angle $\theta_a = 90^o$ (i.e. randomly distributed nanowires).

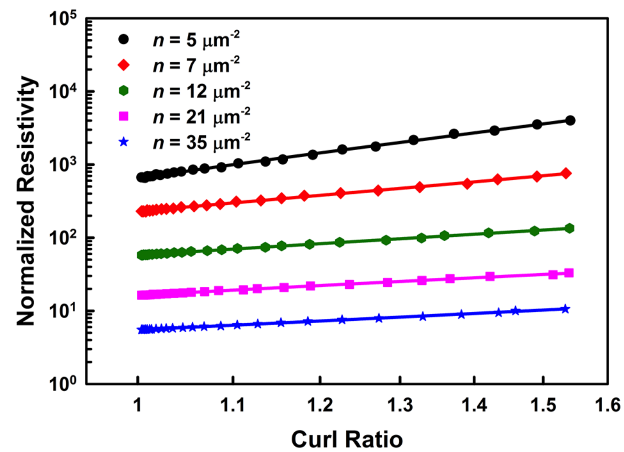

Figure 5. Log-log plot of normalized resistivity versus curl ratio for five different nanowire density values ranging from $n = 5$ to 35 μm^{-2}. The solid lines show the linear best fits to the simulation data used to extract the critical exponents.

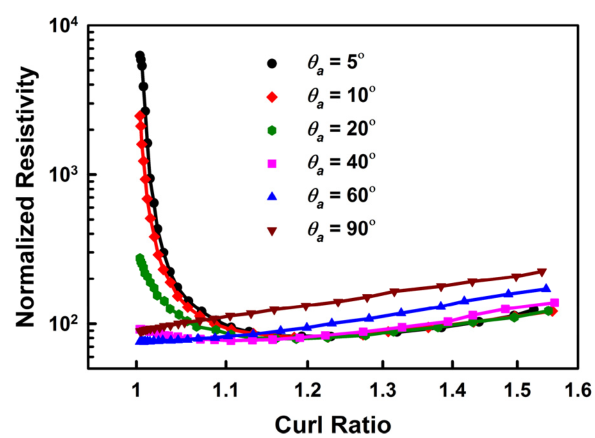

Figure 6. Log-log plot of normalized resistivity versus curl ratio for six different alignment angle values ranging from $\theta_a = 5^o$ to 90°. For well-aligned networks (small θ_a), increasing the curl ratio decreases the resistivity.