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group. S_{2D} values obtained using this method of analysis "filter out" the effect of undulations imparted onto the GNR assembly becaue of alignment imperfections in the SWNT substrate, and indicate the degree of ordering achievable in a GNR array deposited on a perfectly aligned SWNT substrate with $\theta_{i,j}(\mathbf{r})$ = constant. The values of S_{2D} listed in Table 1 further illustrate the

structured surfaces like walls of channels, protrusions and corners, help colloidal particles to attain well-defined positions and orientations. In the case of anisotropic colloids like GNRs, in unidirectional nanochannels created by SWNTs, alignment leads to reduction in their excluded volume by $\sim(L-2R)A$, where A is the surface area of channel-like substrate nanostructures, L is the length of a GNR, and R is its radius, as depicted in Figure 5b.

Finally, as GNRs deposit on the substrate, van der Waals interactions with individual SWNTs and SWNT bundles strongly affect their orientation, as depicted in Figure 5c. Aligning with SWNTs in the substrate allows GNRs to maximize their area

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Order Parameter Calculations:

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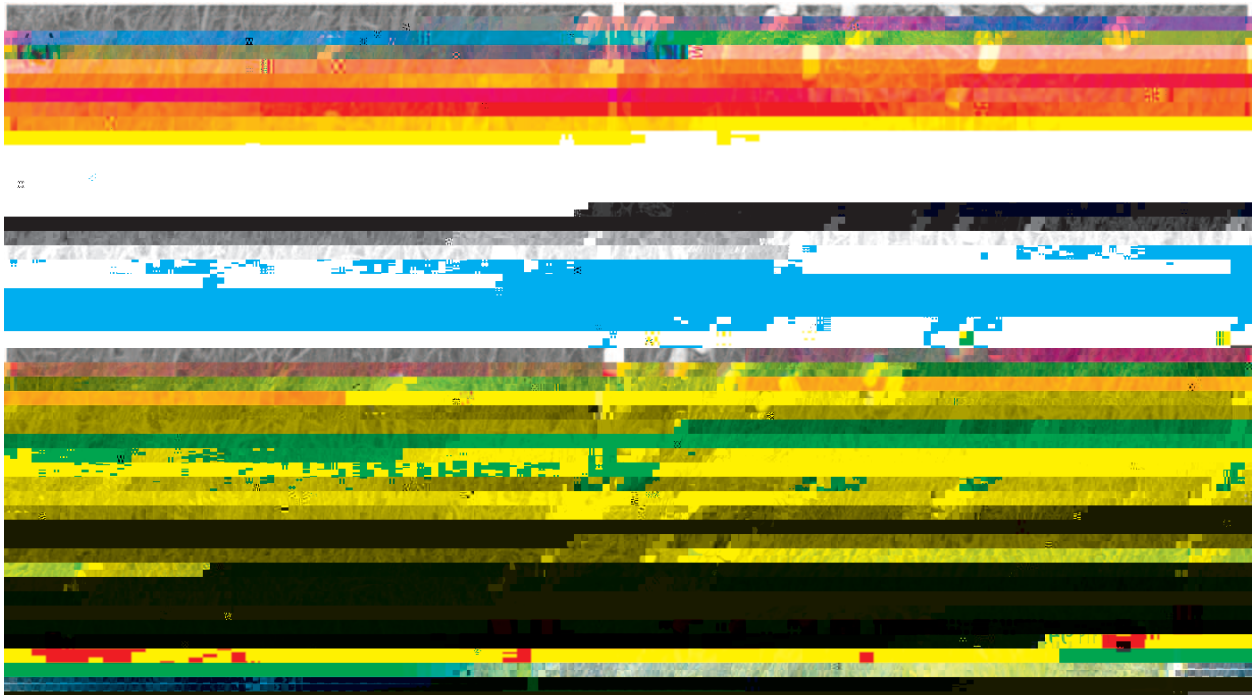
SEM Images of SWNT Films with Single and Multiple GNR Depositions



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Aligned Deposition of Short GNRs on Macroscopic SWNT Fibers with Uniform Alignment