



Supplementary Information

Figure S1: (a) Schematic diagram of neurite length (dotted blue line) and neurite orientation (red line) measurements. (b) Schematic diagram of orientation within the substrate (polar plot) using the cell body of the PC-12 cell as the origin point and the global orientation of the neurite was considered using an angle (θ) from 0° to 360° .

Figure S2: Schematic diagram representing a cross-sectional view of the ARF-CA substrate. To calculate the current, I , that flows through the substrate. Only a_{solid} was considered in the calculations such that $a_{\text{solid}} = n (a_{\text{chain}})$. The value for n was arrived at by dividing the total cross-sectional area A by the diameter of a single filament.

