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Eliminating Common Biases in Modelling Electrical Conductivity of Carbon Nanotubes-Polymer Nanocomposites

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I. Typical Model Used to Represent Carbon Nanotube Network in a Polymer Matrix

Fig. S1 illustrates the periodic pattern of carbon nanotube (CNT) network represented in typical simulation models reported in open literature. If a CNT protrudes out of a representative volume element (RVE) from a boundary surface, the outside portion will be cut and moved to the opposite boundary surface pointing into the RVE. The crossing paths AA' and BB' (highlighted lines) could be conductive but this conductive path will not be included in the conductive network when a single RVE is considered.

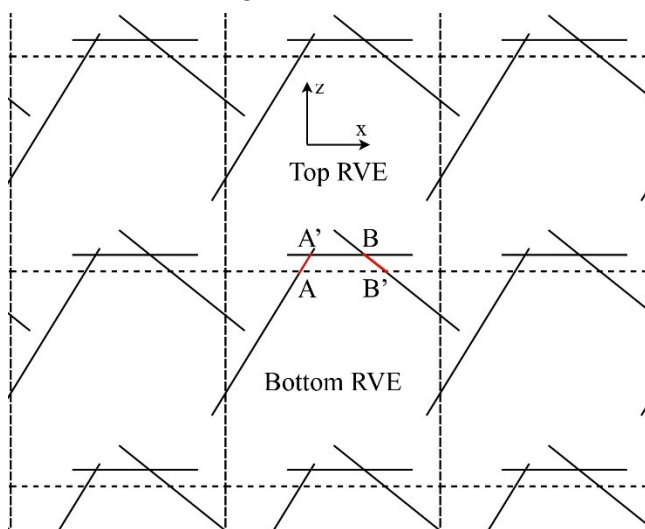


Figure S1 Visual representation of periodic pattern of carbon nanotubes network