Apply a mechanical strain increment

Calculate/Update CNT position and orientation
*(Incorporate the effect of internal CNT network change)*

Determine the relative position of CNTs
(i.e., intersects, shortest distance)
*(Incorporate the tunneling effect)*

Calculate/Update CNT conductance between intersects of $i$ and $j$
*(Incorporate the effect of CNTs’ piezoresistivity)*

Calculate total electrical current $I$ under an applied voltage

Calculate the electrical resistance of nanocomposite

Calculate the relative resistance change and piezoresistivity of nanocomposite

Figure 4: Flow chart of present extensive numerical model