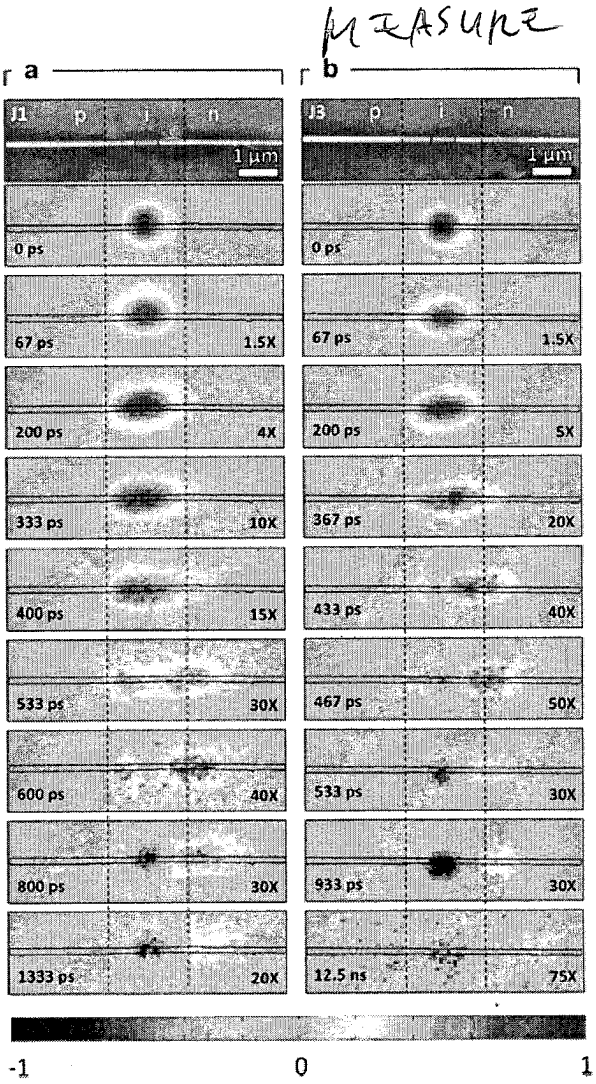


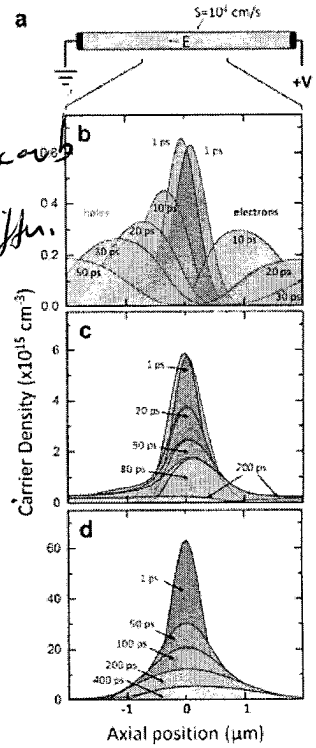


Figure 4. Finite element simulation of charge carrier evolution through a NW under applied bias. (a) Diagram of the intrinsic NW finite element simulation. Metal contacts are placed at the ends of a 10 $\mu$m long NW with 100 nm diameter. A bias is applied across the wire to induce an electric field with a magnitude of $10^6$ V/m. A Gaussian distribution of carriers is generated at the center of the NW (corresponding to an axial position of 0 $\mu$m). (b–d) Charge carrier evolution along the wire axis under (b) low injection ($\sim 10^{15}$ cm$^{-3}$ electrons and holes), (c) intermediate injection ($\sim 10^{16}$ cm$^{-3}$), and (d) high injection ($\sim 10^{17}$ cm$^{-3}$). Hole distributions are shaded in red and electron distributions in blue with shading getting lighter at longer times. Areas where the distributions overlap appear purple.