

Electrical resistance in a material rises due to impurities, flaws, or alloying elements. Pure metals have an orderly atomic structure allowing smooth electron movement. However, adding foreign atoms or other metals disrupts this flawless structure. These foreign atoms act as fixed, localized scattering centers. Free charge carriers encounter these faults, get deflected by electrostatic forces, and their smooth motion is disrupted more frequently than in pure metals. This supplementary deflection mechanism increases the overall resistivity and total opposition to electron flow.