

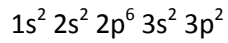
Question#47209- Chemistry – Other

Question:

Compare a semi-conductor (Si) atom to a conductor (Cu) atom and explain why copper (Cu) is a conductor and Silicon (Si) is a semi-conductor?

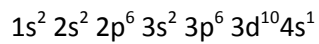
Answer:

Silicon are element from IV group, its electron configuration is the following:



Silicon has four valence electrons in its outer shell ($3s^2 3p^2$). Thus, it can give or accept electrons equally well, allowing them to be doped as N- or P- type easily.

Copper has the following electron configuration:



It can only give away one electron with no possibility to accept electrons and can only be a conductor.