Answer on Question #46472, Physics, Atomic Physics

Question:

Write down the electronic configuration of the Si atom. What type of bonding would you expect to find in Si?

Answer:

In order to write the Silicon electron configuration we first need to know the number of electrons for the Si atom (there are 14 electrons). In writing the electron configuration for Silicon the first two electrons will go in the 1s orbital, the next 2 electrons for Silicon go in the 2s orbital. The next six electrons will go in the 2p orbital. The p orbital can hold up to six electrons. We'll put six in the 2p orbital and then put the next two electrons in the 3s. Since the 3s if now full we'll move to the 3p where we'll place the remaining two electrons. Therefore the Si electron configuration will be:

$$1s^2 2s^2 2p^6 3s^2 3p^2$$

Si is metalloid so type of bond is polar bonding.