N-type and P-type semiconductors

- Semiconductors: typically elements that form covalent bonds with each other, like Silicon (Si) or Germanium (Ge) - 4 electrons in outer valence shell
- N-type semiconductor: doped with an element that "donates" electrons (has "extra" electrons), so it is "negative" (hence, n-type)
    - Element characteristic: has 5 electrons in outer valence shell, e.g. Phosphorus (P) or Antimony (Sb)
- P-type semiconductor: doped with an element that "accepts" electrons ("wants" electrons), so it is "positive" (hence, p-type)
    - Element characteristic: has 3 electrons in outer valence shell, e.g. Aluminum (Al) or Indium (In)

Review: Periodic table of elements