

# Resistance and Ohm's Law

Electric current exists when electrons flow through a conductor.

Resistor – material or device that offers resistance to the flow of  $e^-$ .

Resistance – the slowing of moving charges due to their bumping into “fixed” particles of a conductor.

When a material resists the flow of electrons, it converts electrical energy into another form of energy (heat, sound, light, or motion).

Resistance is measured by the unit ohm,  $\Omega$ .

## Ohm's Law

Ohm's Law gives the relationship between potential difference, current, and resistance:

ex.

What is the potential difference of a 2A current flowing through a  $3.5\Omega$  resistor?

Note: Current is inversely proportional to resistance.