How do electrons flow?

Electrons are subatomic particles that carry a negative electric charge and are found in the outermost shell, or orbit, of an atom. They are responsible for the electrical conductivity of materials and play a crucial role in the flow of electricity.

When an electrical current flows through a conductor, such as a wire, it is composed of the movement of electrons through the material. The flow of electrons is caused by the movement of positively charged particles, called protons, within the atoms of the conductor.

Electrons are bound to the positively charged nucleus of an atom by the electromagnetic force, but they can be made to move or flow by applying an external force, such as an electrical voltage. When a voltage is applied to a conductor, it creates an electric field within the material, which exerts a force on the electrons and causes them to move.

As the electrons flow through the conductor, they encounter resistance, which is the opposition to the flow of current. The resistance of a conductor is determined by the properties of the material and its size, as well as the temperature and the amount of current flowing through it.

The flow of electrons through a conductor can be described using Ohm's law, which states that the current flowing through a conductor is directly proportional to the voltage applied and inversely proportional to the resistance of the conductor. This means that the higher the voltage applied or the lower the resistance, the greater the flow of electrons will be.

We have done multiple smart grid projects that take advantage of the latest on this topic. And we continue to work on and advance multiple aspects of these solutions today and look forward to sharing more soon.

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