Electrons have Potential Energy not “charge”.

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Abstract:

In earlier papers, the fundamental principles of Physics have been reviewed in the analysis of the results of basic experiments on Atomic Spectra and Potential Energy Fields (presently called magnetic and electro-magnetic fields). In all analyses, there has been no need for the concept of "charge". The movement and behavior of electrons can be explained totally in terms of Potential Energy, Potential Gradient and Potential Energy Fields. The conclusion is that “charge” is a fictitious creation.

1. Introduction: Contradictions in Basic Physics:

In earlier papers, the fundamental principles of Physics have been reviewed by the analysis of the results of basic experiments.

Atomic spectra have been analyzed to explore the structure of atoms and molecules.
See AI Physics - Atomic Structure **[1]**.

Movements and interactions have been analyzed, to explore the behavior of Energy Fields (presently called magnetic and electro-magnetic fields).
See AI Physics - Energy Fields **[2] [3] [4]**.

Along the way, a number of contradictions have been uncovered. The more the old physics theories are examined, the more it appears the foundations are built on the "conjectures and guesses" of physicists from many years ago.

For instance, the behavior of electrons is described in the conjectures of Thomson, Rutherford and Bohr, with their invented concept of "charge".

Bohr’s conjecture for the structure of the atom proposes protons in the nucleus and electrons in fixed orbits. This conflicted with other theories at the time, but Bohr’s peers overlooked the numerous difficulties. Some believed the Bohr atom would fly apart if protons repelled protons and electrons repelled electrons. Bohr’s theory barely worked for the simplest atom, Hydrogen, and could not be made to work for larger atoms. It was far from perfect.

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Similarly, Quantum theory describes the atom in terms of probability functions. But neither theory satisfactorily explains the experimental Atomic Emission Spectra.

The old conjectures of “positive and negative charges” cannot be explained logically: Sometimes these "charges" attract, sometimes they repel, and sometimes (within an atom) they do both.

Yet many physicists have been indoctrinated, and believe these old conjectures are factual. In this paper, some of these contradictions are examined in detail.

2. Early experiments with electrons:

If only Nikola Tesla had discovered the electron then, perhaps, the movement of electrons would be based on Potential Energy and not on “charges” that attract or repel.

Perhaps Nikola Tesla would have shown that the Potential Energy of an electron reservoir was a simple function of the Potential above ground potential - see Figure 1:

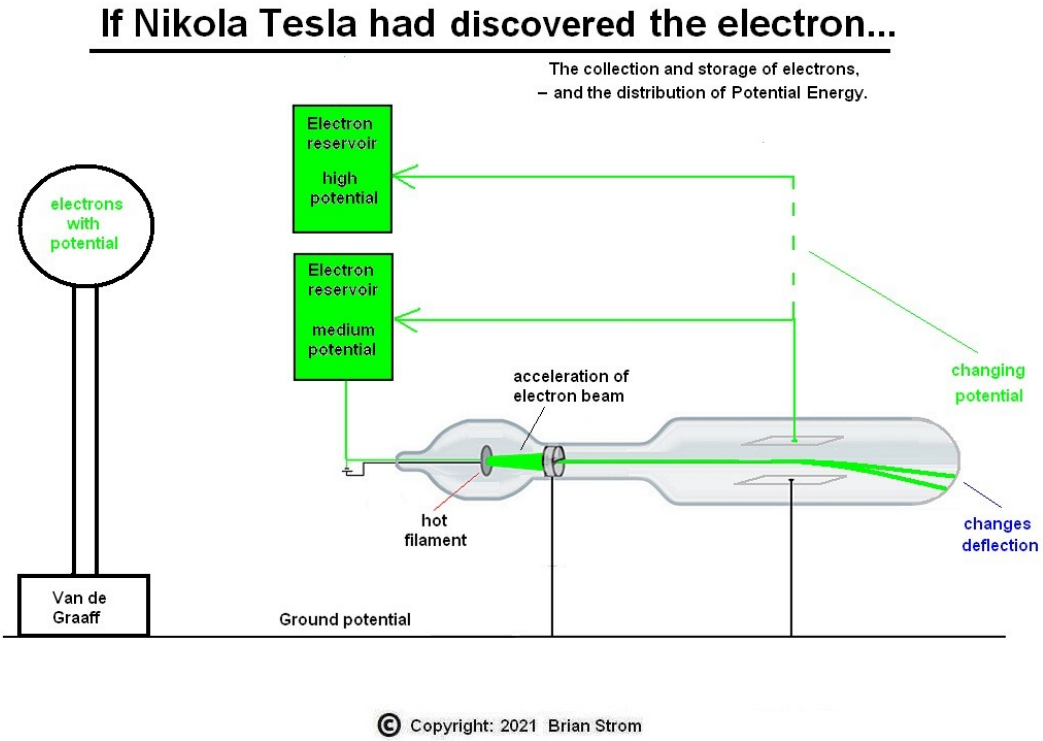

Figure 1. Electrons with Potential Energy.

By doing work, and adding energy to a material in the form of frictional energy or bending energy, electrons will be displaced and some will gain Potential Energy. Again, there is no need for the concept of "charge" to explain this phenomenon - see Figure 2:

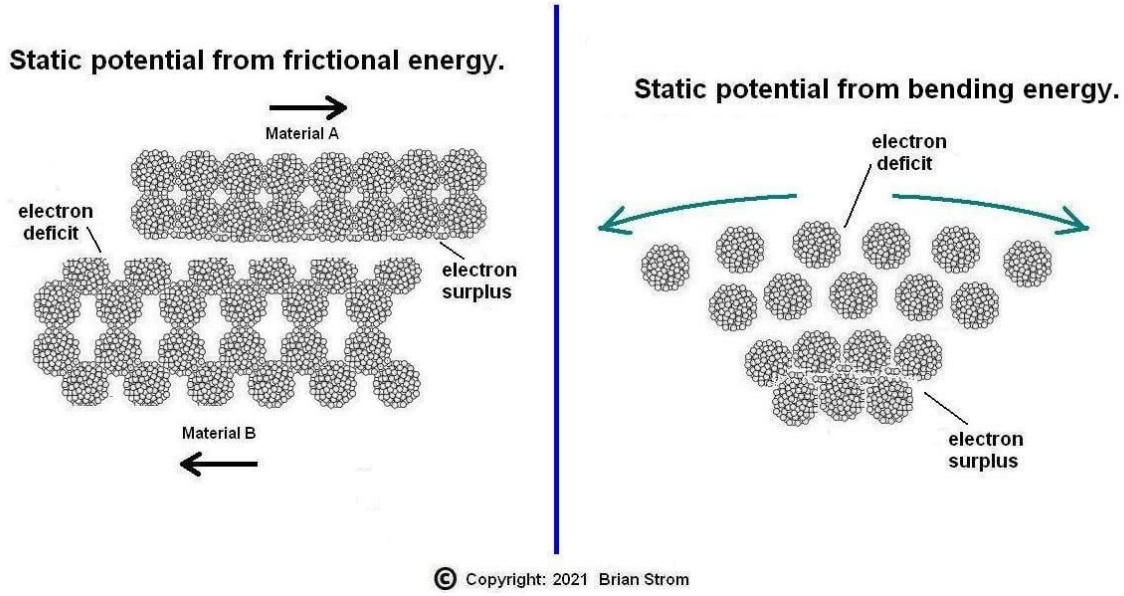

Figure 2. Electrons with Potential Energy from friction or bending.

Static electricity can be explained simply in terms of excess electrons. These electrons will move along a Potential Gradient from an area of excess electrons to an area where the excess is smaller. As observed in all energy systems, the electrons will become distributed to form the lowest total energy configuration.

Another everyday example is a balloon moving to reduce the total energy of the excess electrons on it and on an adjacent object - see Figure 3:

Again, there is no need for the concept of "charge" to explain this behavior.

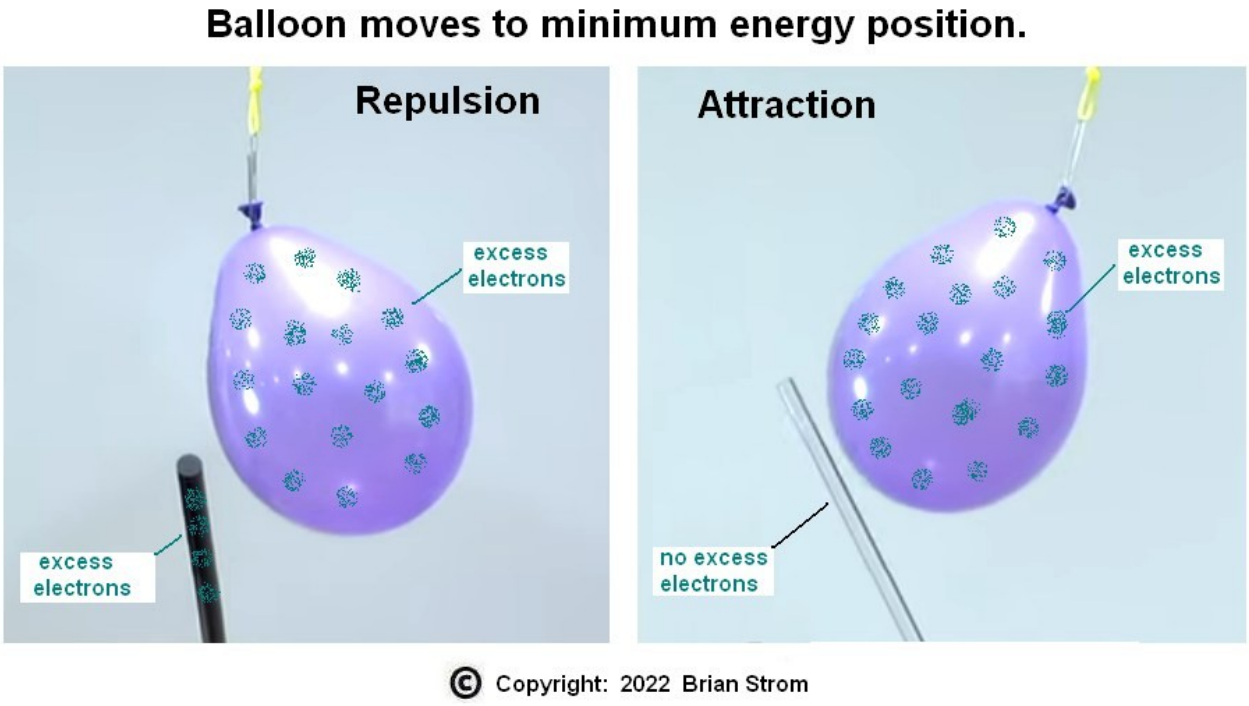

Figure 3. Excess electrons will move to reduce the total energy.

From Atomic Structure Theory **[1]**, the atoms in a lattice or molecular structure are assumed to be stationary. It is only the free electrons that move in the Potential Energy Field that surrounds them.

The electrons tend to move to a minimum energy position.

An analogy is the flow of water to a minimum energy level (in a gravitational energy field) - see Figure 4:

There is no need for the concept of "charge" to explain a gravitational water flow.

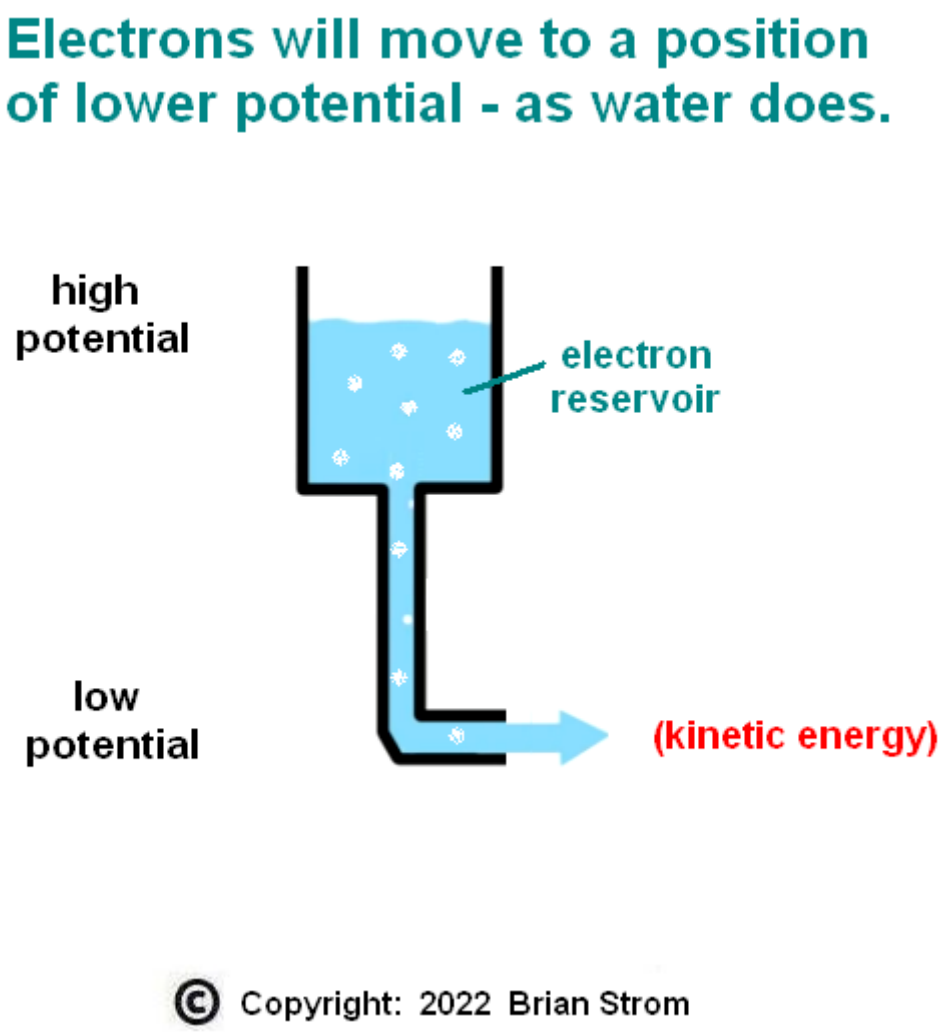

Figure 4. Electrons move to a position of lower Potential Energy.

The water analogy can also show how electrons will flow fom High potential to Low potential when charging or discharging a battery - see Figure 5:

Again, there is no need for the concept of "charge" to explain this movement.

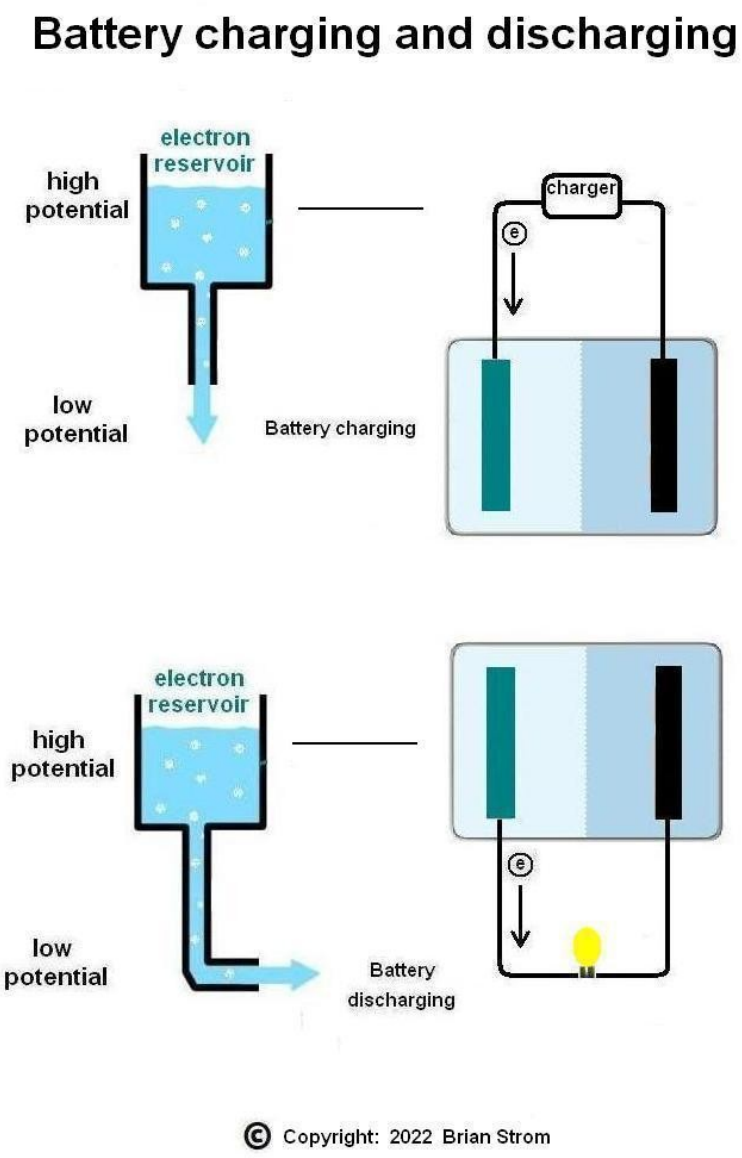

Figure 5. Electrons move to a position of lower Potential Energy.

For electrolysis, and for different electrolytes, the molecular break-up can be explained by the addition or subtraction of electrons from these molecules - see Figure 6:

In this diagram, atoms are shown as Potential Energy Wells full of electrons - as in Atomic Structure Theory **[1]**.

Again, there is no need for the concept of "charge" to explain this behavior.

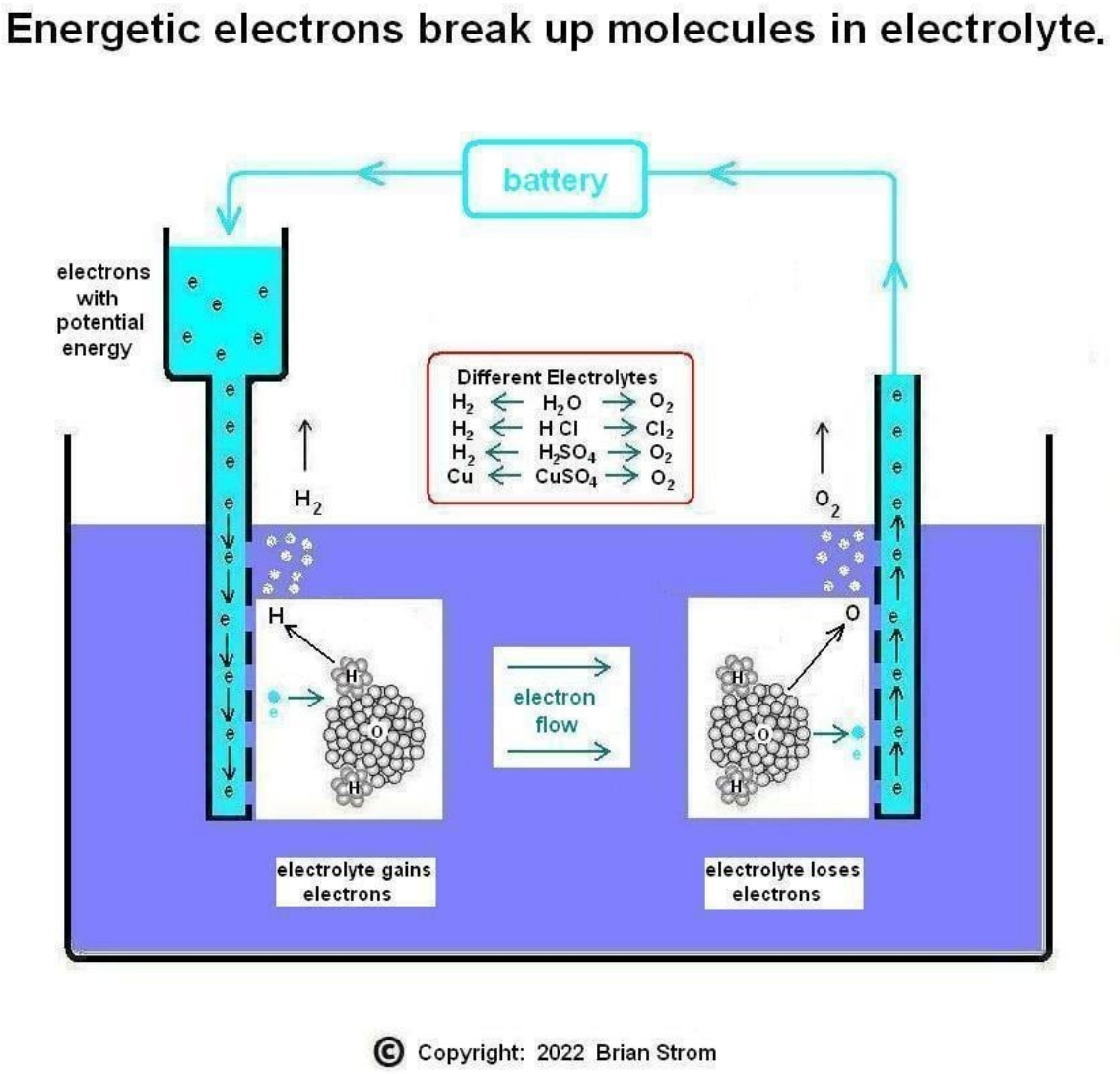

Figure 6. Electrons move through electrolyte and disrupt molecules.

3. Potential Energy Fields:

An earlier paper: AI Physics - Energy Fields **[2]** shows how, when electrons move, the Potential Energy Field around them moves also.
Figure 7 uses the water flow analogy to show again how there is no need for positive or negative “charges”, or electro-magnetic fields.

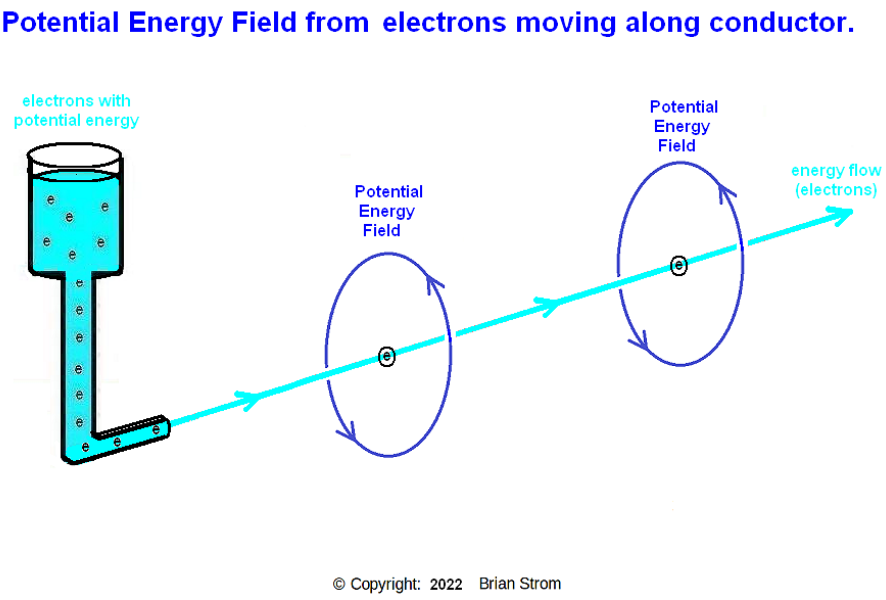

Figure 7. Electrons move along conductor creating a Potential Energy Field.

Continuing this theme, the electron flow along a conductor, combined with an external Potential Energy Field (presently known as a magnetic field), shows the principles of the motor and the generator – see Figure 8:

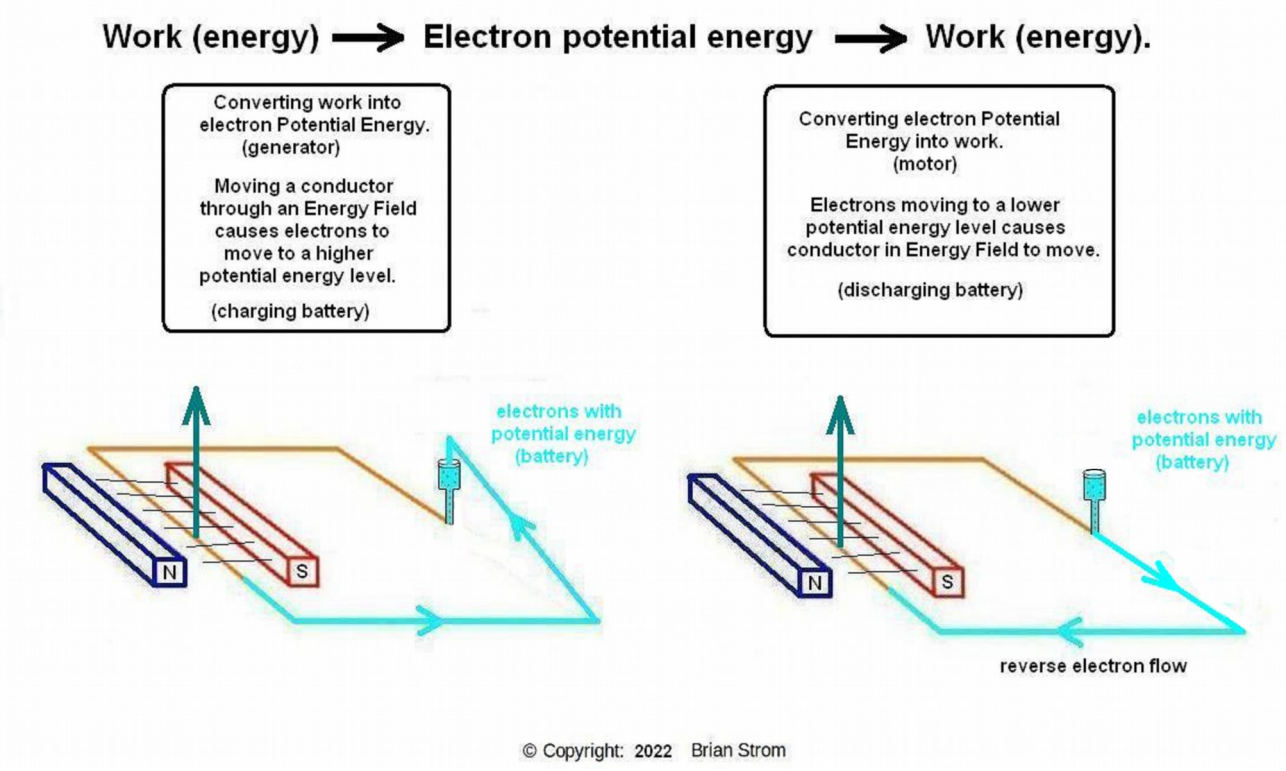

Figure 8. Electrons and Potential Energy for Generator and Motor.

In more 3-dimensional detail, Figure 9 shows electrons moving along a conductor and forming a Potential Energy Field around the conductor.

If the conductor is placed in another Potential Energy Field, created by permanent magnets or coils of wire, the Total Net Field will be HIGHER on one side and LOWER on the other.

Hence the conductor will move sideways to reduce the total energy of the system.

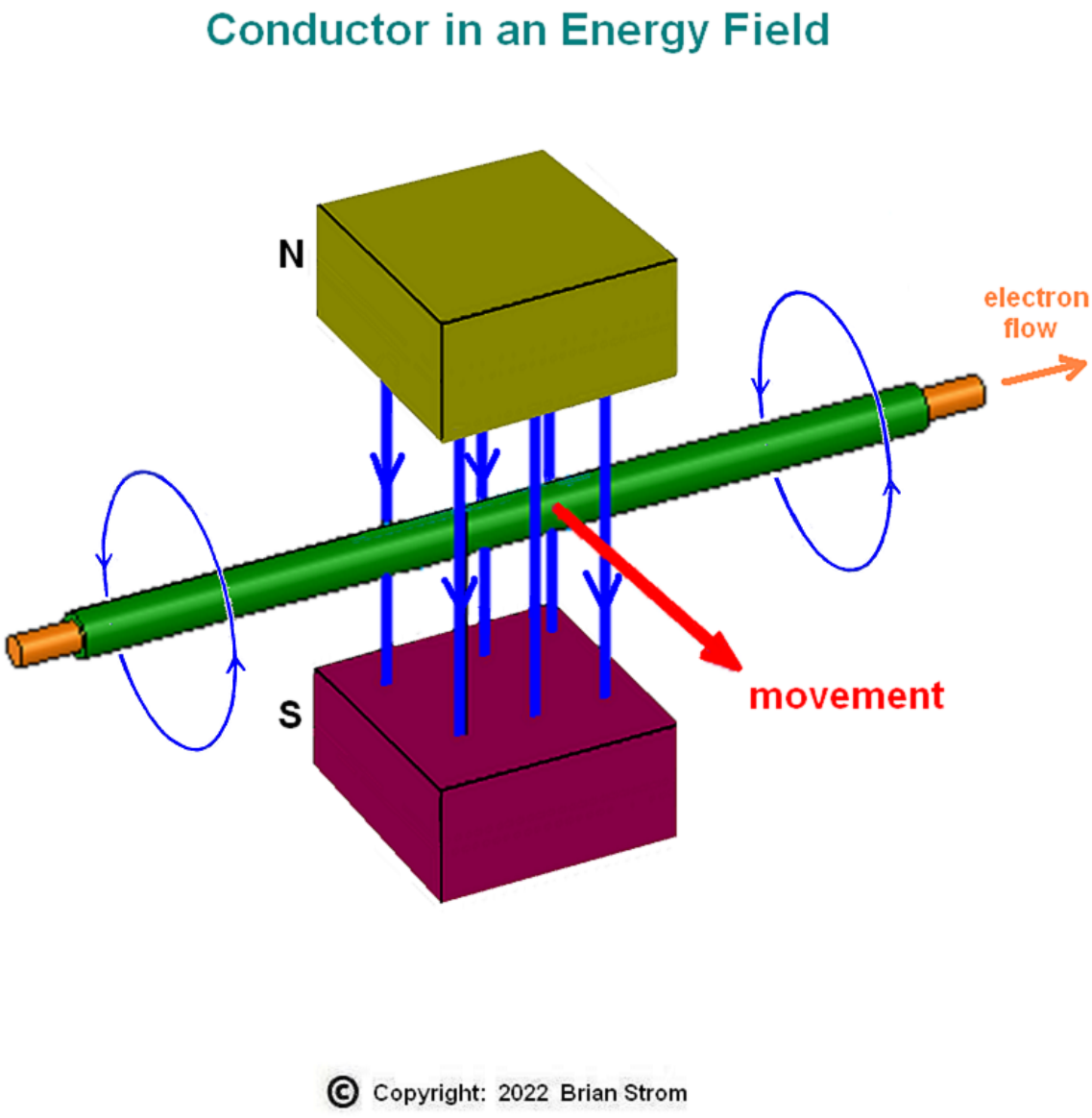

Figure 9. Electron flow: Conductor movement in an external Potential Energy Field.

4. Summary and Conclusions:

In all these examples of electron movement and Potential Energy, there is no need for the concept of "charge".

The movement and behavior of electrons can be explained simply in terms of Potential Energy, Potential Gradient and Potential Energy Fields.

Our utility electricity supply is really only electrons moving down a Potential Energy Gradient (reversible in AC systems) and their Potential Energy converting into other forms of energy, mainly into Kinetic Energy (movement and heat).

“Charge” is an unnecessary, fictitious creation.

5. References:

[1] AI Physics – Atomic Structure (Part 1) Brian STROM. ViXra: 1811.0162. November 2018. https://vixra.org/abs/1811.0162

[2] AI Physics – Energy Fields (Part 1) Brian STROM. ViXra: 1902.0421. February 2019. This paper includes a composite summary of the simple interactions between energy fields.

[3] AI Physics - Energy Fields (Part 2) Brian STROM. ViXra: 1903.0495. March 2019. This paper includes a summary of the interactions between Potential energy fields, Orbital energy fields and Rotational energy fields.

[4] AI Physics - Energy Fields (Part 3) Brian STROM. ViXra: 1906.0492. June 2019. This paper includes advanced proposals for interactions between energy fields.

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