## Abstract Submitted for the SES07 Meeting of The American Physical Society

Frontiers of Magnetism, Electric Field and Electron Studies RICHARD DESANTIS — There is evidence that does not support the idea that electrons are responsible for voltage. For example: current causes voltage in a resistor, but current does not change point charge concentration within the resistor. Therefore voltage is not point charge concentration. A Wimshurst generator provides evidence that voltage is fundamentally different than force between point charges. Stretching and compressing voltage gradients in a Wimshurst generator increases both voltage and current. Stretching and compressing the distance between point charges does not similarly increase both voltage and current. By definition, an electron volt is the amount of increase in electron kinetic energy that results when an electron passes though an electric field of one volt. The conversion is irreversible if point charge concentration energy is not voltage gradient energy. Irreversible conversion of voltage gradient energy to point charge kinetic energy means that atoms do not contain point charges. Atoms that contain point charges cannot store voltage gradient energy. All atoms have relative permittivity >1, thus can store voltage gradient energy. Point charges irreversibly deplete voltage gradient energy. If point charge repulsion energy completely converts to electron acceleration, nothing is left to convert to magnetic energy. If part of the electron acceleration energy converts to magnetic energy, electron velocity resulting from acceleration energy would be less than predicted.

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