

Abstract Submitted  
for the APR09 Meeting of  
The American Physical Society

**Experimental Basis for IED Particle Model** J. ZHENG-JOHANSSON — The internally electrodynamic (IED) particle model is built on three experimental facts: a) electric charges present in all matter particles, b) an accelerated charge generates electromagnetic (EM) waves by Maxwell's equations and Planck energy equation, and c) source motion gives Doppler effect. A set of well-known basic particle equations have been predicted based on first-principles solutions for IED particle (e.g. arxiv:0812.3951, J Phys CS**128**, 012019, 2008); the equations are long experimentally validated. A critical review of the key experiments suggests that the IED process underlies these equations not just sufficiently but also necessarily. E.g.: 1) A free IED electron solution is a plane wave  $\psi \doteq C e^{i(k_d X - \omega T)}$  requisite for producing the diffraction fringe in a Davisson-Germer experiment, and of also all basic point-like attributes facilitated by a linear momentum  $\hbar k_d$  and the model structure. It needs not further be a wave packet which produces not a diffraction fringe. 2) The radial partial EM waves, hence the total  $\psi$ , of an IED electron will, on both EM theory and experiment basis -not by assumption, enter two slits at the *same* time, as is requisite for an electron to interfere with itself as shown in double slit experiments. 3) On annihilation, an electron converts (from mass  $m$ ) to a radiation energy  $\hbar\omega$  without an acceleration which is externally observable and yet requisite by EM theory. So a charge oscillation of frequency  $\omega$  and its EM waves must regularly present internal of a normal electron, whence the IED model.

Dr. J.X. Zheng-Johansson  
Inst. of Fundamental Physics Research, Nykoping, SW

Date submitted: 12 Jan 2009

Electronic form version 1.4