Dielectric Charging Via the E-Field

This is a disclosure of a discovery I made while researching the E-Field in a cored transformer, specifically, a toroid core but not limited to this shape. I was studying the results of bucking single turns in the center of the toroid core where predominately the E-Field exists. For a single turn, this resulted in an equivalent of a normal single turn but with very low inductance. To my surprise, I learned that this bucking single turn produced a voltage equal to the normal single turn equivalent of the V/t (volts per turn) of the primary! IOW, if the primary had 42 turns with a 42 volt peak pulse applied, the bucking single turn secondary produced a 1 volt peak pulse.

I then placed a film cap (WIMA MKP 10 series) in the center of the toroid core and subjected it to the E-Field produced by the primary. Again, a voltage appeared that was equal to the V/t of the primary with a pulse applied. The most notable thing about this is the fact that the capacitor instantly charges during the fast rise time of the E-field with no noticeable effect on the applied input power. No Lenz effect! IOW, the dielectric is instantly charged via the E-Field and IMO, the energy is coming from the aether. If this is correct, this is at least one means of producing an outside source of energy which is a requirement of any FE device.

Figure 1 below shows an example of the above that is using a single .047uf capacitor inserted in the hole of a 2" dia, N87 ferrite toroid and subjected to the E-Field produced with a primary of 42t of 25ga magnet wire and a supply voltage of 42v DC. CH2(blu) is the input voltage, CH3(pnk) is the cap voltage, CH4(grn) is the input current, and Math(red) is the mean input power.

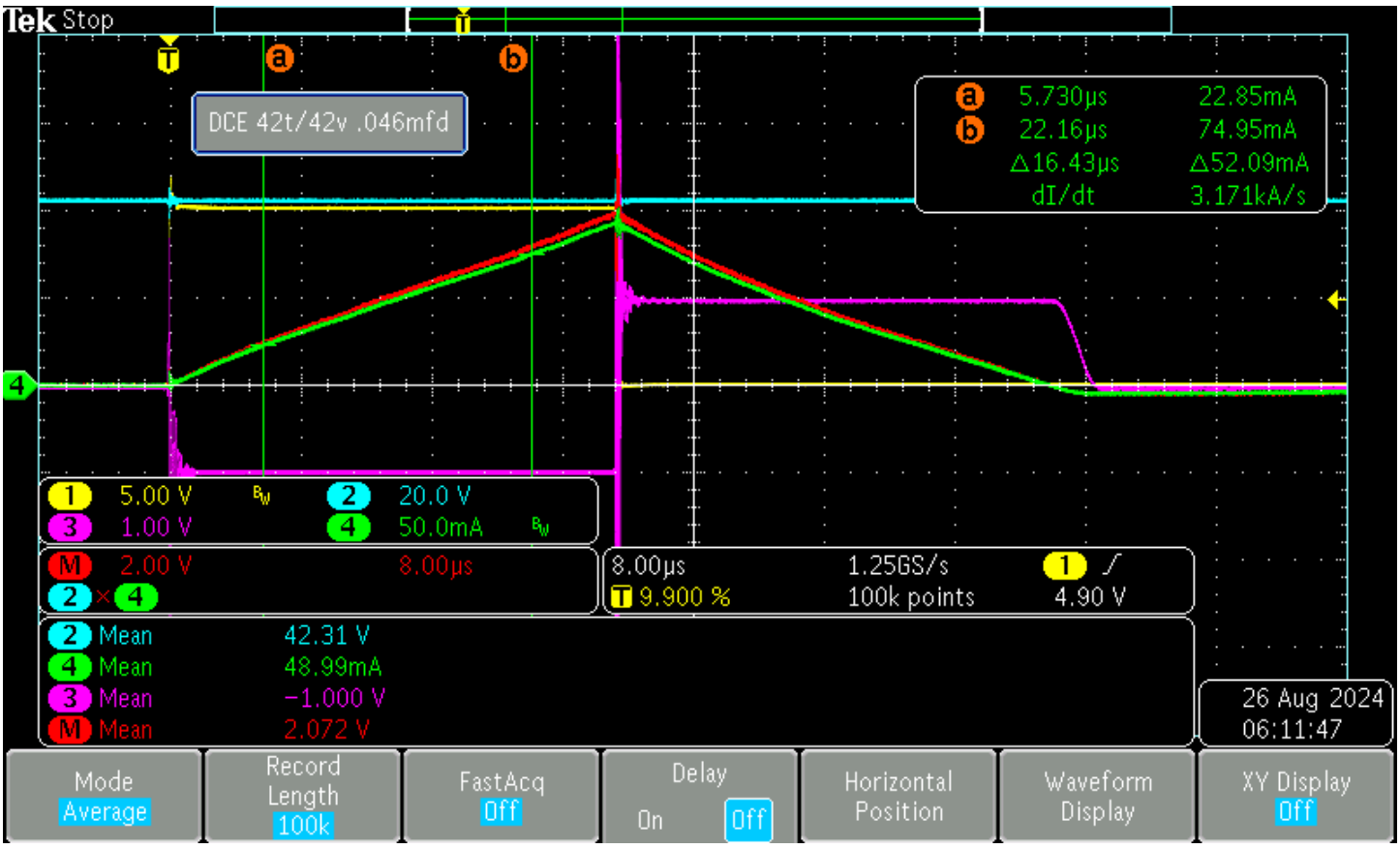

Figure 1

Figure 2 shows the same test setup but with three .047uf caps connected is series.

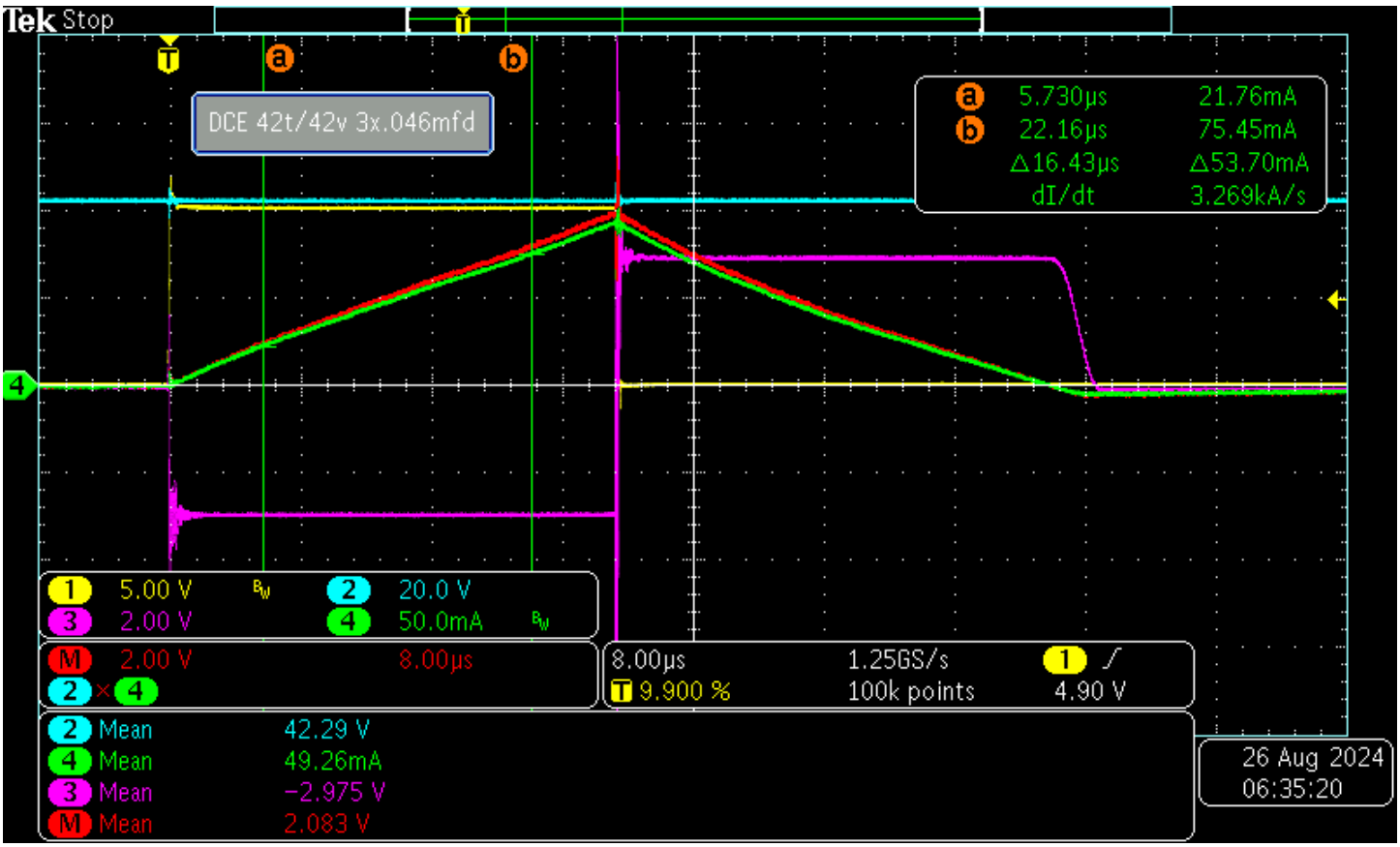

Figure 2

Figure 3 below shows a cross section of the toroid core with the film capacitor inserted and the E-Field.

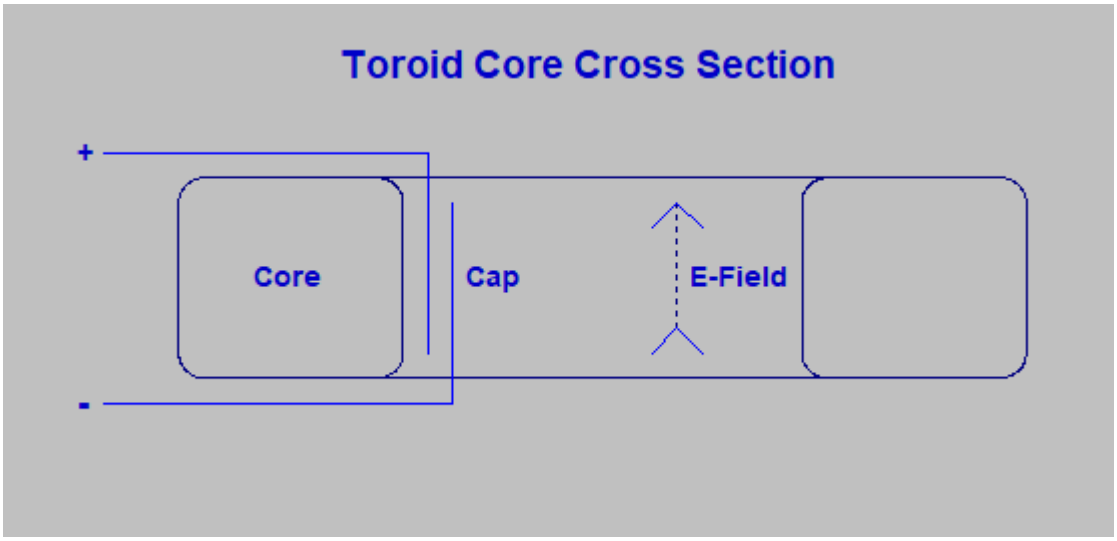

Figure 3

To the best of my knowledge, these results have not been demonstrated anywhere previously!

At this point, I questioned if the capacitors really were charging to the voltage shown in the bench tests. In the 3x.047uf test, the net total capacitance is .047uf/3 = .0156uf due to their series connection. So, a 5mh inductor was added across the capacitor chain to resonate at~18kHz. Figure 4 below shows the results of this bench test.

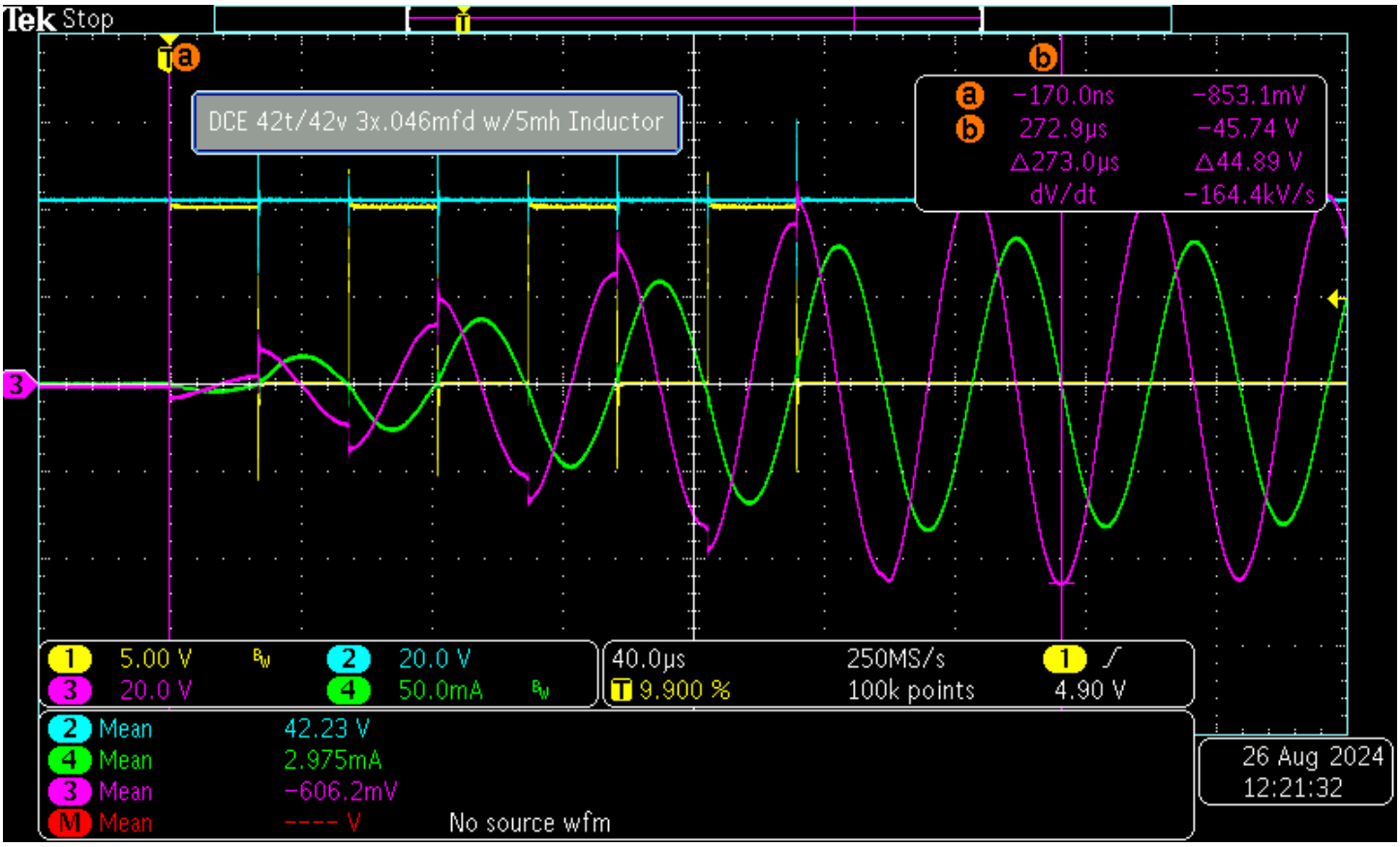

Figure 4

Note the increasing voltage steps at each rising/falling edge of the input square wave on CH1(yel) and the increasing 5mh inductor current on CH4(grn). Also note that most of the voltage step increases are greater than 3v! So, the evidence is clear that the .o47uf caps are charging to a real voltage potential during the rising and falling edges of the primary input pulses. The resonant frequency here is 18.2kHz. Also not shown is the mean input power which is unaffected by this output.

Ideally, the core material should have as high permeability as possible to reduce the input energy for any given V/t plus, the B/H curve should yield as linear an inductance as possible. Here we see that the linearity is not as good as it should be which contributes to a larger input energy differential between the charging and discharging cycles.

Overall, this discovery appears to offer an opportunity to build an FE device. We shall see with more to come!

Regards,

Jon Flickinger