

# Using the Coler Effect in a Transformer

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## 1. Introduction

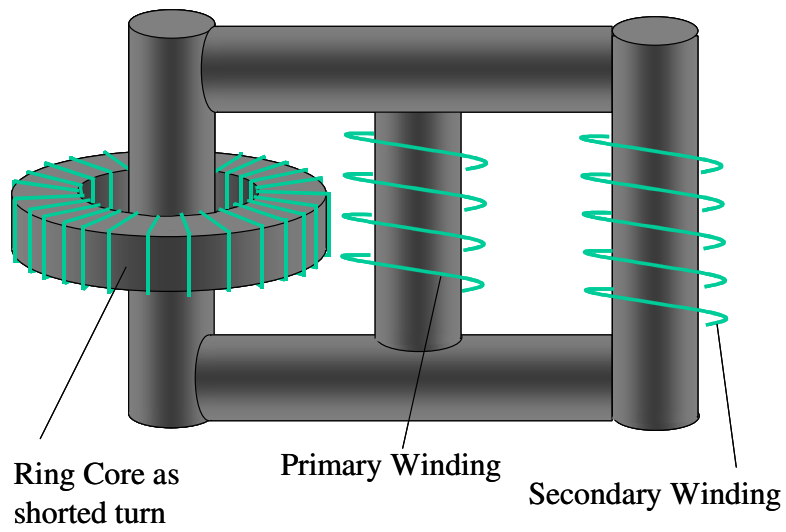
I have previously argued that Coler's Stromerzeuger obtained its excess energy by tapping into the perpetual Larmor precessions of the magnetic dipoles within his iron rods. Using recent findings that an electron gas subjected to a magnetic field can rectify microwave energy to create a DC output, I argued that the Drude gas of the conduction electrons in the iron did just that, with the microwaves supplied locally by the atomic dipole precessions at their Larmor frequencies. For this to occur it was likely that the precessions needed to be phase cohered over the mean free path of the conduction electrons, and this coherence could be provided by the conduction electrons themselves since they also precess and would carry phase. Again recent work in spintronics has indicated this possibility. However that phase locking would only occur if the lattice precessions were very close in frequency, which in bulk material requires a very uniform magnetization. For rods, which have a demagnetising factor, this is not easily achievable and requires special attention to the size and positions of the coils which create the magnetization. FEMM simulations have shown that the Coler Stromerzeuger geometry lends itself to the creation of a uniform field over a significant length of the rod. However for the experimentalist achieving this uniformity is very much a hit and miss exercise, no doubt Coler spent much time on this trial and error process.

Uniform magnetization is much more easily achieved if there is no demagnetisation, such as in a toroidal core. If attention is paid to the core dimensions and shape, and the coil is wound uniformly over the entire ring core, then uniform magnetization within the core is guaranteed. However any current in the core must follow the B field lines, so we cannot make electrical connections to the core. The only possibility is to induce conduction currents into the magnetized core, then there is the possibility that those currents will be enhanced by the microwave energy extracted from the dipole precessions, that energy being replenished to the dipoles by the quantum vacuum. This proposal is for a transformer which uses those enhanced eddy currents.

## 2. Proposed Transformer

The principal of the proposed transformer is shown in the figure. The transformer core is of E I construction having a central leg upon which the primary coil is wound. One of the outer legs has a shorted turn around it, the short being the conducting iron ring core. This short will prevent flux from entering that leg, so all the magnetizing flux will be sent through the other outer leg upon which the secondary is wound. As thus far described, the system will act like a normal transformer save only for the small losses associated with the current induced into the iron ring.

The next step is to magnetize the iron in phase with the induced current. With spatially uniform flux in the iron ring, there is a good chance that the Coler effect will be evident. This produces absolute negative resistance in the iron, which will cause the current in the ring to increase beyond the value needed to back-off the flux. This anomalous current is seen by the transformer as an anomalous source of mmf, which will produce anomalous power in the secondary.



### **Proposed Transformer Schematic**

The toroidal winding on the ring core needs to be fed with current at the appropriate phase, but the power needed for the magnetization will be minimal compared to the OU power available from the transformer output. Toroidal eddy currents induced into the ring core from this toroidal winding could in fact aid the needed helical progression of the circumferential current.