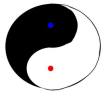


## Growing Electric Power by Tesla Tornado Circuit.



**WARNING:** Tesla coil experiment could be **haazardous to your health !!!**.  
[http://arizonaenergy.org/News\\_13/News\\_Apr13/TeslaCoilsforDummies.html](http://arizonaenergy.org/News_13/News_Apr13/TeslaCoilsforDummies.html)

### Review on Electromagnetic (=EM) Circuit Theory.

(1) Current distribution  $\mathbf{j}(\mathbf{x},t)$  determine all the EM field intensity.

$\mathbf{A}(\mathbf{x};t) = \mu \iiint d\mathbf{r}^3 \cdot \mathbf{j}(\mathbf{r},t-R/c) / 4\pi R \dots <R=|\mathbf{x}-\mathbf{r}|>, \nabla \cdot \mathbf{A}(\mathbf{x};t) = -\mu \mathbf{j}(\mathbf{x},t) \dots$  wave equation of vector potential.

$\{\mathbf{B} = \text{curl} \mathbf{A}, \mathbf{E} = -\nabla \phi - \dot{\mathbf{A}}; \mathbf{H} = \mu^{-1} \nabla \times \mathbf{B}, \mathbf{D} = \epsilon \mathbf{E}\}$ , ← current  $\mathbf{j}(\mathbf{x},t)$  determines whole field intensity.

(2) Current Decision by Current Distribution Equation.

$\mathbf{j}(\mathbf{x};t) = -\mu^{-1} \nabla \times \mathbf{A}(\mathbf{x};t) = -\mu^{-1} \nabla \times \iiint d\mathbf{r}^3 <\mathbf{j}(\mathbf{r};t-R(\mathbf{x}-\mathbf{r})/c) / 4\pi R(\mathbf{x}-\mathbf{r})>$ .

Now it is calculated by linear multi dimensional simultaneous equation by EM field simulator.

(3) Energy of whole EM Field  $<U = \text{energy of \{EM field(photon)+charge particle in potential\}}>$ .

$U(t) = \iiint d\mathbf{x}^3 (\mathbf{E} \cdot \mathbf{D} + \mathbf{H} \cdot \mathbf{B}) / 2 + \iiint d\mathbf{x}^3 (\rho \phi - \mathbf{j} \cdot \mathbf{A})$   
 $= \iiint d\mathbf{x}^3 (\mathbf{E} \cdot \mathbf{D} + \mathbf{H} \cdot \mathbf{B}) / 2 - \mu \iiint d\mathbf{x}^3 \iiint d\mathbf{r}^3 <\mathbf{j}(\mathbf{x},t) \cdot \mathbf{j}(\mathbf{r},t-R/c)> / 4\pi R$ .

### THE EXPERIMENT.

Also author **once** accomplished more power generating than inputting one by FlyBack Circuit with flat **Tesla Spiral Coils**(=SPC).  $\eta = (\text{output power}/\text{input one})$  is about 105~110% (light bulb 19,38Watt), however, at now he can not by something unknown. Thereby it becomes you who can accomplish the re-observation.

### Part I : THE PHYSICS BASIS (THEORY with some observed important phenomena).

#### ① ENERGY CONSERVATION LAW in this whole UNIVERSE:

**0 = Positive Matter Energy — Negative “Attraction Force” (Gravity) Field Energy.**

<http://www.777true.net/Energy-Creation-Process-from-QED-to-QGD.pdf>

+plus energy is gotten by **Growing Attraction Force** by **parallel** running currents in SPC.

#### ② Power Equation: “How much we can get growned power ?!”

$U(t) = 0 = P - N = \iiint d\mathbf{x}^3 (\mathbf{E} \cdot \mathbf{D} + \mathbf{H} \cdot \mathbf{B}) / 2 - \iiint d\mathbf{x}^3 (\mathbf{j} \cdot \mathbf{A})$   
 $= P_0 + \Delta P - \mu \iiint d\mathbf{x}^3 \iiint d\mathbf{r}^3 <[\mathbf{j}(\mathbf{x},t) + \Delta \mathbf{j}] \cdot [\mathbf{j}(\mathbf{r},t-R/c) + \Delta \mathbf{j}]> / 4\pi R$ .

\*A realized whole field energy at time=t by current distribution= $\mathbf{j}(\mathbf{x},t)$ .

$\Delta P$  caused by growned  $\Delta \mathbf{j}$  is available positive energy.

#### ③ “Growing” Electric Power by Tesla bi-filer Spiral Circuit (with 2 $\lambda$ Resonance?).

In actual weak intensity observation, the **strongest resonance** in Spiral Circuit have automatically realized **“growned” parallel running currents** of negative energy with generating positive one.

Thus our task is how to “grow sufficient current” without suppressing elements !!!

It may be strong one shot pulse excitation, or sinusoidal resonance excitation ??

(1) **polarity of SPC and the Non-Linearity !!:**

Clockwise current(CW) and counter CW(=CC)one in SPC has different response intensity (observation).Note any natural LC(not chemi-con)R two port circuit elements has no polarity. Thus SPC can not be linear response element,but non-linear one.

☞ : It is well known that ordinal EM field(Quantum Electromagnetic Dynamics=QED)is linear,but not non-linear. Thereby we can not help,but employ **QGD**(of ± energy separation reaction by **Quantum Gravity Dynamics** the non linear gauge field dynamics).

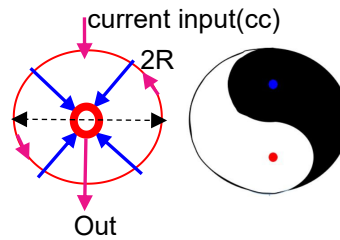
(2) **Amplitude(current intensity)dependence of SPC circuit response.**

We need **larger current**,then we would encounter **sudden non linear transition ???!**.

(3)General telling,a "**Spiral Structure**" has mysterious power to growing,or evolving something,*galaxy,tornado,crystal,plants,DNA(?)*.

$$\text{curl} \mathbf{H} = \mathbf{j}(\mathbf{x}, t) + \partial_t \mathbf{D} \rightarrow \text{curl}(k\mathbf{H}) = k\mathbf{j}(\mathbf{x}, t) + \partial_t(k\mathbf{D}).$$

Gathering **H** at "tornado center" grows current !!.



**Tesla Spiral Coil(=Tornado Effect Circuit)**

Below is **clock wise bi filar winding** from center to outer circle,while the original picture is counter clock wise, which is inconvenient in **actual right hand winding**.

N. TESLA  
COIL FOR ELECTRO MAGNETS.  
Patented Jan. 9, 1894.

No. 512,340.  
(No Model.)

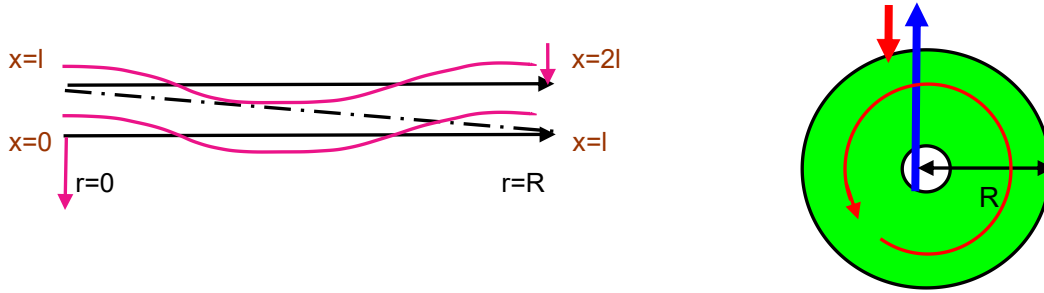
Fig. 2

L2 is essential coil,while L1 is triggering current one located in outer circle

The aim of **bi-filar winding** is making **paralell current** generating attraction force(of negative energy)between **A**(inner circle)and **B**(outer circle)lines.

[http://arizonaenergy.org/News\\_13/News\\_Apr13/TeslaCoilsforDummies.html](http://arizonaenergy.org/News_13/News_Apr13/TeslaCoilsforDummies.html)

(4) 2λ resonance in "Tesla bi-filer Spiral Circuit of 1dimensional model" <x=coil length coordinate>

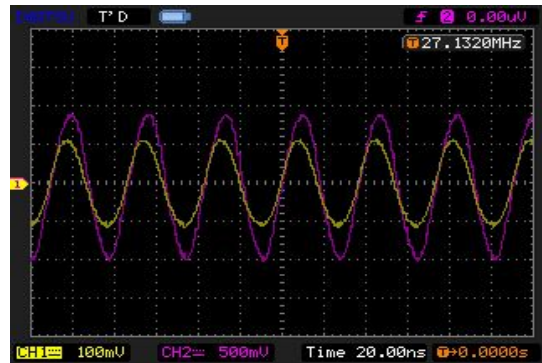
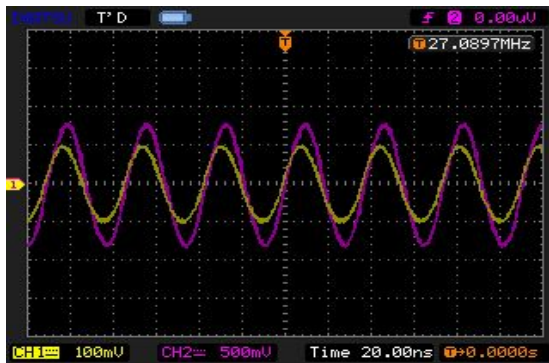


Above current distribution is a realizing **parallel running current**(with input-output port at  $r=0, r=2l$ ) generating negative energy.

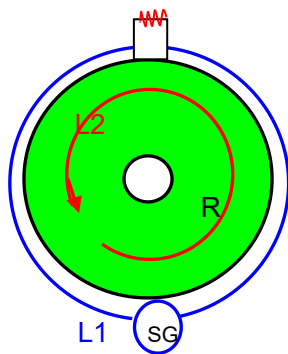
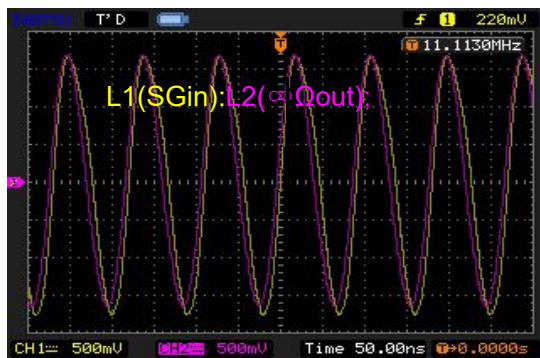
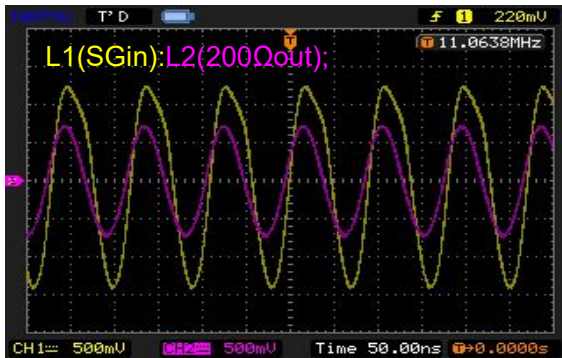
$l = \lambda = 12.5m, (25m) \rightarrow c/\lambda = f_0 = (3 \times 10^8 m/s) / 11m(25m) = 27.3MHz, (12MHz).$

These are the strongest resonance in actual observation !!.

$2l=22m: \eta = 27.1/27.27MHz = 0.99.$  <wave length contraction rate>.



$2l=50m: \eta = 11.1/12.5MHz = 0.89$



④ Almost Wild Estimation on Possibel Output Power by Power Equation.

Our most concern is how much power we can get !!.Following is not exact calculation, but mere almost wild estimation in order to simply see how much about degee. Current are simply assumed grwoned one,

② Power Equation: "How much we can get power ?!"

$$U(t)=0=P-N=\int dx^3(ED+HB)/2-\int dx^3(j \cdot A)=P-\mu \int dx^3 \int dr^3 \langle j(x,t) \cdot j(r,t-R/c) \rangle /4\pi R.$$

\*A realized whole field energy at time=t by currents distribution=j(x,t). P is available one.

(1) A simple calculation example of an inductor

L=400μH with max current I=1A in a cycle(f<sub>R</sub>=10kHz)

$$U=\int dx^3(H \cdot B)/2=\mu \int dx^3 \int dr^3 \langle j(x,t) \cdot j(r,t-R/c) \rangle /4\pi R=LI^2/2=400\mu H(1A)^2/2=0.2mJ,$$

$$\rightarrow P=f_R U=2W.$$

(2) Averaged Value Thorem in Integration.

$$U=\int dx^3 G(x)=G(x^*) \int dx^3=G(x^*)V \dots U=(\text{integral volume}) \times \langle \text{somewhere value of } G(x) \rangle$$

$$G(x^*)=(\int dx^3 G(x))/\int dx^3.$$

$$U=\int dx^3 j(x,t) A(x,t)=(\mu_0/2) \int dx^3 \int dr^3 \langle j(x,t) \cdot j(r,t-R(x-r)/c) \rangle /R(x-r).$$

$$=(\mu_0/2) \langle \underbrace{j(x,t)}_{\text{unkown}} \cdot \underbrace{j(r,t-R(x-r)/c)}_{\text{unkown}} \rangle /R(x-r) \times \int dx^3 \int dr^3.$$

unkown × unkown × known

By anyhow,author put some possible value to unkowns to see U value.

(3){coil wire length=25m bifiler winding,weire φ=2.3mm,→∫ dx<sup>3</sup>∫ dr<sup>3</sup>.

SPC diameter=0,4m,inductanceL(100Hz)=400μH}

$$(4) A \equiv (\mu_0/2)=2\pi \times 10^{-5} H/m.$$

$$(5) B \equiv \int dx^3 \int dr^3 = \{\text{SPC conductor wire volume}\}^2 = [25m \times \pi(0.002.3/2)^2]^2.$$

(6) C ≡ almost wild esimation of the function = <j(x,t)·j(r,t-R(x-r)/c)>/R(x-r)

$$=(1/2)[(1A/\pi(0.002.3/2)^2)(1A/\pi(0.002.3/2)^2)/\langle R(x-r) \rangle \dots \dots \text{paralell current component}$$

$$- (1A/\pi(0.002.3/2)^2)(1A/\pi(0.002.3/2)^2)/\langle R(x-r) \rangle] \dots \dots \text{anti-paralell current component}$$

$$*1/R(x^*-r^*)=(1/2)[1/\langle R(x-r) \rangle - 1/\langle R(x-r) \rangle]$$

(7) EM Field Energy(current interaction potential)<U>=ABC

$$=(1/2)[2\pi \times 10^{-5} H/m \times [25m \times \pi(0.002.3/2)^2]^2 \times (1A/\pi(0.002.3/2)^2)(1A/\pi(0.002.3/2)^2)/\langle R(x-r) \rangle]$$

$$=(1/2)[2\pi \times 10^{-5} H/m \times [25m \times \pi]^2 \times (1A)(1A)/\langle R(x-r) \rangle]=0.04/\langle R(x-r) \rangle]$$

$$=0.02/\langle R(x-r) \rangle=0.2m \rangle - 0.02/\langle R(x-r) \rangle=0.25m \rangle =20mJ \dots ? ? ! !$$

If we take repeating frequency f<sub>R</sub>=10kHz,P=10kHz×20mJ=200W... ? ? ! !

鈴木基司 2022/2/11.

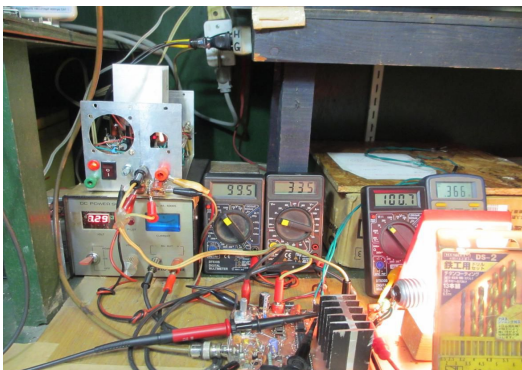
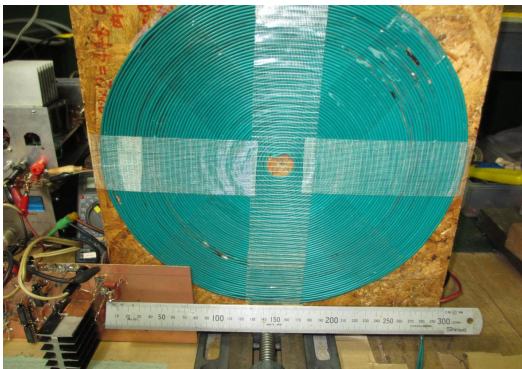
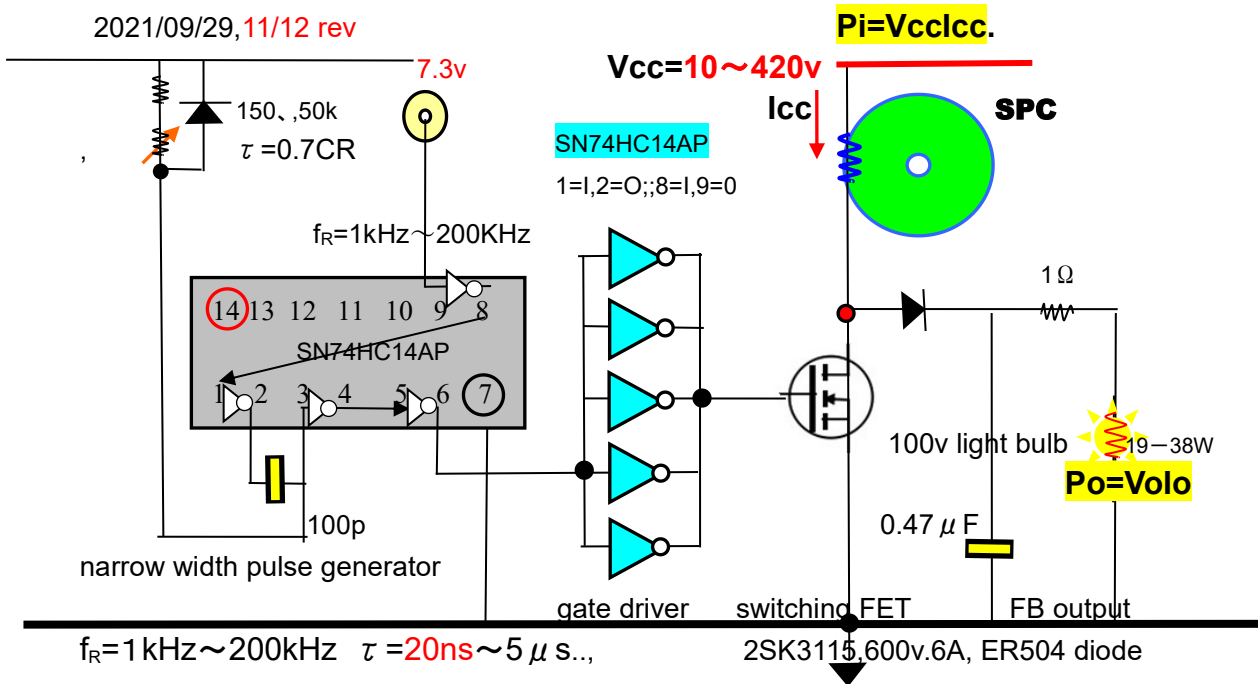


**Part II :An Actual Implementation by author.:**

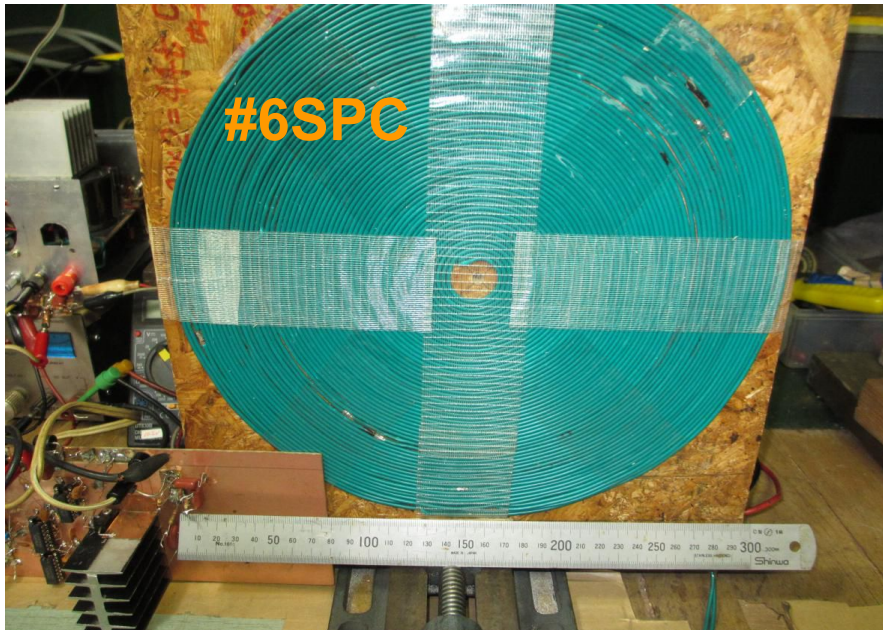
For an example, author generated output about=19W by input=18W,etc by simple Switching Flyback Circuit with Spiral Coil(=SPC).

→By mere 1W gain,you can tell that it can be miss-observation by noisy environment.

In fact switching noise can cause miss measurement. Thereby,author tried to reduce miss measurement.



①#6SPC example:



**100m**  
**¥2390**  
**1790¥**

Center hole D=2cm( ¥ 5 coin) L2 diameter 2R=27cm(54t) L1diameter 2R=29cm(4t) $\Delta R=(27-2)/2 \times 54=0.23\text{cm/t}$ *winding method→Part I ㊟(3)	Conductor wire data: Color Green Thickness (sq) 0.75 Length (m) 100 Number of cores 30 , Allowable current (A) 15; Voltage DC12V / 24V; Wire diameter ( Φ mm) 0.18;Coating PVC; Allowable temperature (°C) 80 <b>(coating+wire )outer diameter ( Φ mm) 2.3</b>
--	--

**L2 coil wire length=L and the DCR(L)<DC current resistance>.**

**#7SPC:**  $L2DCR=1.54\Omega / 50m=0.0308\Omega / m$

**#6SPC:**  $L2DCR=0.66\Omega / 0.0308\Omega / m=22m$

**#6SPC:**L2 impedance.  
(100Hz=404μH,100KHz=413.5μH<L1 open>),,100KHz=325.5μH<L1 short>)  
DCR=0.66Ω.  
L1 impedance(100Hz=8μH,100KHz=8.249μH<L2 open>,100KHz=6.464μH<L2 short>)  
DCR=0.06Ω.....LCR meter **DE-5000**

**#7SPC:**L2 impedance.  
(100Hz= 1459μH,100KHz=1549μH<L1 open>),,100KHz=1529.5μH<L1 short>)  
DCR=1.53Ω.  
L1 impedance(100Hz=6μH,100KHz=2.020μH<L2 open>,=1.991μH<L2 short>)  
DCR=0.08Ω.....LCR meter **DE-5000**



**WARNING:** Tesla coil experiment could be **hazardous to your health !!!**.

[http://arizonaenergy.org/News\\_13/News\\_Apr13/TeslaCoilsforDummies.html](http://arizonaenergy.org/News_13/News_Apr13/TeslaCoilsforDummies.html)

If you try the experiment, you must recognize possible hazard is your responsibility  
Also author can not accept any responsibility or liability.

### **A Very Coarse Conclusion at now:**

- (1) At least in laboratory experiment scale of machine, **the cost is clearly cheaper !!!**.  
Can modified this method really be poor's clean and cheap electric power generator ?
- (2) SPC is clearly simple topology, while circuit response is extra ordinary **non-linear**, which would cause confusion and difficulty in the design.  
Or it might has outrageous ability to grow current with energy ?!
- (3) Current intensity at this time experiment was very weak  $< 1A$ .  
It should be larger to find stronger current growing..
- (4) SPC is clearly simple topology, while the characteristic is extra ordinaly mysterious and complicated enough in **math-physics analysis** (**the non-linearity**).  
Challenge toward this top pragmatcal problem !!!

### **REFERENCE:**

- (1) ***The Quest For Overunity***

<http://jnaudin.free.fr/>

Author express strong thanks to Jean-Louis Naudin(France). Without their wide range dedication, also this **Overunity** work could not be.

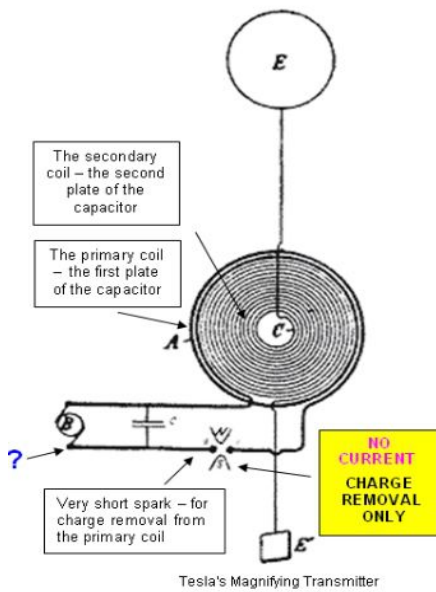
- (2) Private communication.

About 20 years ago, I met Dr Shuichi Inomata(N machine developper) and his colleague, without which, author did not concern with so called "free energy development".

- (3) Without low cost and stable electronic parts venders with home delively traders, this **Overunity** work could not be. Thank them very much.

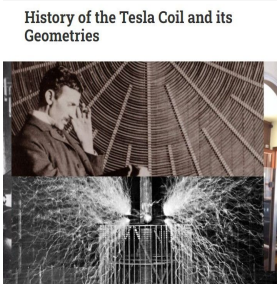


**APPENDIX1:On the Tesla Original Work(=Power Magnifying Transmitter).**



- (1) **Radiating Power from E**(capacitive antenna)  
 $\square \phi(\mathbf{x};t) = -\rho(\mathbf{x};t) / \epsilon$   
 ... <Longitudinal Electric Wave Radiation from **E**>  
 $\rho_B = \text{div} \mathbf{D} = -\epsilon \text{divgrad } \phi$  ,,rapid change of  $\phi$  is better.  
 $U = \rho_B \phi$  . . . . . energy density of charge  $\rho_B$  in  $\phi$ .  
 It is so to say a **flying AC battery** to receiver antenna.  
 \* $\phi$  is also called **charge density wave**.
- (2) **E** must be charged to realize higher{ $\rho \rightarrow \phi$ }.  
 (3)  $\rho$  charging must be **large and high speed pulsive current** for higher  $\rho_B$ .  
 (4) L1=instantaneous sparking high voltage current  
 (5) L2=**High Speed Current Growing** by Tesla coil tonade effect.  
 \*Stopping the growing may be E's highest voltage?.

Maybe,it had really realized **large current growing !!**



Both are strictly established "*Maxwell EM field equation*".

$\square A(\mathbf{x};t) = -\mu \mathbf{j}(\mathbf{x};t)$  . . . . . Ordinal transversal EM wave.  
 portable phone,etc.

$\square \phi(\mathbf{x};t) = -\rho(\mathbf{x};t) / \epsilon$  . . . Longitudinal Electric Wave  
[In general,no use in engineering](#)

<https://waveguide.blog/history-tesla-coil-geometries/>