the general science journal

Relation P-N and S-N junctions

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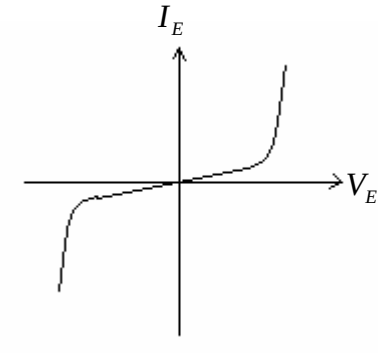
See the Unified Absolute Relativity Theory at:

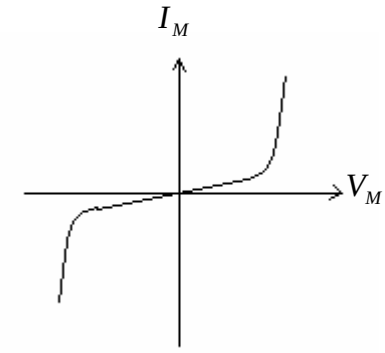
www.wbabin.net/saraiva/saraiva305.pdf
www.wbabin.net/saraiva/saraiva306.pdf
www.wbabin.net/saraiva/saraiva307.pdf
www.wbabin.net/saraiva/saraiva328.pdf
www.wbabin.net/stham/saraiva347.pdf
www.wbabin.net/stham/saraiva366.pdf

Semiconductor p-n junctions and superconductor normal metal s-n junctions are equivalent.

Led – photodiode:

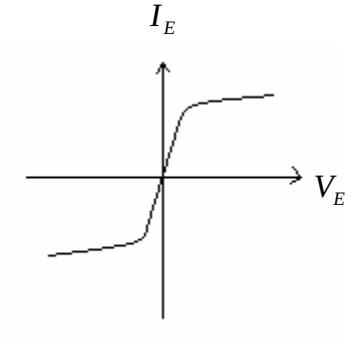


S – N junction:



$$I_M = V_E$$

$$V_M = I_E$$



I_E -- Electric current; V_E -- Electric voltage; I_M -- Magnetic current;
V_M -- Magnetic voltage.

S – N junction oscillation frequency:

$$f = \frac{V_E}{q_m} = 4.836 \times 10^{14}\, Hz \qquad (V_E = 1V)$$

LED oscillation frequency:

$$f = \frac{I_E}{q_e}\frac{\alpha}{2}\ ; \qquad \alpha \text{ -- Fine structure constant.}$$

$$I_E = 20mA \qquad \Leftrightarrow \qquad f = 4.836 \times 10^{14}\, Hz$$

q_m -- Magnetic charge quantum; q_e -- Electric charge quantum.

Photodiode voltage:

$$V_E = \frac{k_B T}{q_e} = 25.84mV\ ; \qquad \text{T = 300 K}$$

S-N junction current:

$$I_E = \frac{k_B T}{q_m} = 2\mu A$$

Semiconductor junctions and Josephson single junctions all oscillate and all generate electricity.

Semiconductor junctions detect photons and superconductor normal metal junctions detect neutrinos.

k_B -- Boltzmann constant; T – Temperature.

S-N junctions also generate light.

The nature explores all the possibilities.
We are the nature doing that.
All that man do is natural, not artificial.