

We claim:

1. A circuit for generating electrical energy, comprising:
a pulse generator for generating a continuous stream of pulses;
a negative resistance device coupled to the pulse generator;
a tube having a cavity therein coupled to the negative resistance device; and
an output for receiving an electrical output emitted from the tube.
2. The circuit of claim 1, wherein the tube is filled with material having a predetermined permittivity or permeability larger than a vacuum.
3. The circuit of claim 1, further including a pump for pumping fluid through the tube.
4. The circuit of claim 3, wherein the fluid exchanges heat with the tube.
5. The circuit of claim 1, wherein the tube cavity has a semiconductor or metal at least partially filling the cavity.
6. The circuit of claim 1, wherein the tube has a cross-section that is one of the following: round, square, rectangular, elliptical or oval.
7. The circuit of claim 1, wherein the tube is conductive.
8. The circuit of claim 1, further including at least one oscillator component coupled to the tube.
9. The circuit of claim 8, wherein the oscillator component includes an inductor coupled to one end of the tube and a capacitor coupled to an opposite end of the tube.
10. A method for generating electrical energy, comprising:
generating a continuous input stream of pulses;
applying the input stream of pulses to a tube having a cavity therein;
pumping fluid through the cavity; and
outputting an electrical signal from the tube.

11. The method of claim 10, further including applying thermal energy to the fluid.
12. The method of claim 10, further including passing the continuous input stream of pulses through a negative resistance.
13. The method of claim 10, wherein the tube has a cross-section that is one of the following: an N-sided polygon, round, elliptical or oval.
14. The method of claim 10, wherein the continuous stream of pulses is at a first frequency and further including generating a signal at a second frequency greater than the first frequency using an oscillator circuit coupled to the tube.
15. The method of claim 1, wherein the tube is an elongated cylinder.
16. The method of claim 1, wherein the tube forms an etalon.
17. An apparatus for generating electrical energy, comprising:
a pulse generator to generate a stream of electrical pulses having a first power;
a negative resistance coupled in series with the pulse generator; and a load coupled to the negative resistance; and
a tube having a cavity therein coupled in series with the negative resistance and the load, the tube for providing electrical energy to the load.
18. The apparatus of claim 17, wherein the tube is configured to receive heat that is converted into electrical energy having a second power, greater than the first power, to the load.
19. The apparatus of claim 17, further including an oscillator coupled in series with the tube, wherein the electrical pulses are at a first frequency and the oscillator generates pulses at a second frequency, greater than the first frequency.
20. The apparatus of claim 17, wherein the cavity is filled with material having a permittivity or permeability greater than a vacuum or air.