

Executive Summary

Super Conducting Super Capacitor

[Link to U.S. Patent No. 9,179,531](#)

[Colombia Patent Resolucion 974](#)

[Rwanda Patent No. RW 126/ARK](#)

[S. African Patent No. 2011/09109](#)

Lightning Farms

Imagine trains, airplanes or barges containing water proof Super Capacitors the size of large railroad cars, barges, ships, airplanes, etc. being geographical proximate thunderstorms for receiving the electric charge from lightning emanating therefrom. The tops of wind mills are perfect places for positioning electrodes for accepting lightning strikes, (note that currently existing Lightning Rods (LRs) on tops of buildings worldwide can be used as electrodes to a Super Capacitor by simply running the LR to a power line instead of into the ground); and if the Super Capacitor completes a circuit through a step down transformer to a battery system, a constant positive charge on the electrode some 300 feet in the air is possible, which will attract negatively charged lightning; and if the polarity is switched, a negative charge on the electrode will attract positively charged lightning from the upper atmosphere, which is ten times as powerful as lower atmospheric lightning. Note that atmospheric ionization can be accomplished in a number of ways to cause lightning: 1) lasers can be used to heat the water vapor in clouds causing ionization to occur which is a catalyst for lightning. High intensity lasers powered by a super capacitor using the lightning generated by the storm and/or lightning created in the process of ionizing the bottom or middle portions of funnel clouds of tornadoes by the laser(s), can be used to kill or weaken/disseminate those funnel clouds of tornadoes before they can do any damage or after they reach the ground due to the vaporization of the funnel clouds in the ionization process...the laser acting kind of like an eraser of funnel cloud super cells. This process could actually enable a steady current to flow from cloud generated lightning to the super capacitor by continuous laser ionization movement through cloud formations in general (i.e. tornadoes not required); 2) battery plasma, silver iodide, iron iodide and the like can be deposited in clouds to cause cloud ionization (called cloud seeding); 3) plasma from nuclear reactors can be filtered through a magnetic field the strength of our magnetosphere to produce non-radioactive plasma to deposit in the atmosphere to cause lightning (clouds not required) which may be more efficient than boiling water to turn a turbine; and 4) a drone type shuttle can go back and forth from the lower atmosphere to the upper atmosphere to collect natural plasma near the ionosphere to be released into the lower atmosphere to cause lightning.

A recent documentary, titled: "Raging Planet", can be downloaded from Netflix. It shows that naturally occurring lightning happens daily in places like Colombia, Rwanda and DR Congo. This documentary explains that each negatively charged lightning strike is approximately one trillion volts, whereas, positively charged lightning is ten times that. The Christ statue in Rio de Janeiro gets hit by lightning an

average of 6 times per year. Although one would not want to damage the statue, a simple way to understand the invention, is to imagine a metallic probe electrode connected to the anode (positively charged end) of a huge capacitor, and the pre-charging of the capacitor creates a bias voltage on the anode that will attract ALL the negatively charged lightning of a certain radius of say 50-100 miles, depending on the amount of the bias voltage. We have all seen lightning go from cloud to cloud travelling over 100 miles in a sub second. One can imagine 100s or 1000s of statue strikes instead of 6.

When we see lightning, all we see from the naturally occurring phenomena is that level of voltage that accompanies a lightning strike when a critical mass of potential energy between the clouds and the ground occurs in nature. Imagine depositing a HUGE amount of ionized gas (plasma) in the atmosphere (not necessarily in the clouds), thus creating a HUGE potential difference over a windmill farm having at least one windmill tip electrode having a charge to attract continuous lightning strikes, trickle charging the battery system or the Super Capacitor (or both), and getting a surge of a trillion or so volts whenever it rains... and even when it doesn't rain, etc.

So far, patents have already issued in Australia, Canada, Colombia, France, Germany, Italy, Japan, Monaco, Rwanda, South Africa, Switzerland, Taiwan, The Netherlands, The UK, and the United States. Patent applications are also currently pending in the following countries: Argentina, Brazil, China, DR Congo, Hong Kong, India, Israel, S. Korea and Pakistan.

Environmental Benefits:

Lightning of itself emits Nitrogen into the atmosphere, and Nitrogen is good for trees and plants. So generating lightning by seeding the atmosphere with ionized gas (plasma) actually helps the environment by helping rain forests thrive. As the equator swells due to hyper melting of the ice caps due to global warming, there is more rain now, and we can expect more rain in the future, and hence more naturally occurring lightning near the equator. If we can capture this unlimited energy from the atmosphere and feed it into the electrical grids worldwide and for use by electric vehicles so as to replace or supplement fossil fuels, we can reverse the phenomena known as global warming.

The reason the capacity of the Super Capacitor varies exponentially with its radius is due to its shape, which is essentially spherical, circular or rectangular, and the area of any such shape involves πR^2 or just R^2 or simply $X * Y$, if rectangular. Unlike an induction coil which has the shape reflected by $2\pi R$, the reason the Super Capacitor has practically no resistance, is that the lightning current goes around the conductor and not through it. This phenomenon is best understood by considering the operation of the Faraday Cage or Shield. The bigger the area, the better to instantaneously accept and distribute the charge. In this way, mere increase in scale reduces resistance exponentially as it increases Super Capacitor capacity exponentially! This is an unexpected result, and partially explains why it is not obvious and therefore undergirds the inventive step.

Mars has an atmosphere that is almost 100% CO₂ and has a trench around its equator that is wider than the Grand Canyon (Valles Marineris). From these facts, can one hypothesize how Mars died, given that it also no longer has a magnetic field, yet the trench is thousands of miles long at its equator? Was the trench caused by coronal mass ejections from the sun or a gamma ray burst from another star many

years ago? Is the South Atlantic Anomaly on the Earth's equator (weakening of Earth's magnetic field which protects Earth from coronal mass ejections) the same phenomena? Mars does have evidence of Electrical Erosion (i.e. electrical discharge machining (EDM)).

Is this is mere coincidence? Will a coronal mass ejection or gamma ray burst do the same damage to the Earth's crust as Earth's magnetic field weakens? Can we do anything about it? Is a blackout proof electrical grid possible?

Another primary inventive step of the Super Capacitor stands in the ability to capture ALL lightning from the center of say a 100 mile/161 kilometers radius (and scalable to larger or smaller radii) using a macroelectronic circuit having an electrode connected to a water proof super capacitor connected to a battery system. The super capacitor electrode 100-300 ft/meters in the air (perhaps a windmill tip which is already a lightning rod going to ground that can be re-routed instead to charge the super capacitor and battery system) can be biased with charge (positive or negative depending on whether we are trying to attract upper or lower atmospheric lightning, respectively) from the charged battery when the windmill blade stops during thunderstorms so as to attract and accept ALL lightning for a 100 mile/161 km radius (ever see cloud to cloud lighting?) by scaling the size of the super capacitor to suit the amount of lightning desired. The Faraday effect (and exponential decrease in resistance as R increases) are, as you say, just "macroscopic effects", but they ARE an essential part of the inventive step. Think about it. If we can attract ALL the lighting around the center of every 100 square miles/161 square km radius or so, then we could potentially prevent ALL forest fires that are started by lightning not to mention reducing the number of annual deaths due to lightning!

Deflecting radiation: Electric fields and Artificial Atmospheres

Alpha particles are positively charged, beta particles are negatively charged and gamma radiation is electrically neutral. This means that alpha radiation and beta radiation can be deflected by electric fields, but gamma radiation is not deflected. Magnetic fields: Because they consist of charged particles, alpha radiation and beta radiation can also be deflected by magnetic fields. Just as with electric fields, gamma radiation is not deflected by magnetic fields. Remember that opposite charges attract. Beta particles are negatively charged so they will be attracted towards a positively charged plate. And positive alpha particles will be attracted towards a negatively charged plate.

It should not be overlooked that the Super Capacitor probe electrodes can be so biased by pre-charging the circuit (by windmill turbine, charging the battery, hydro-electric turbine or otherwise), that the Super Capacitor can function as a veritable atmospheric vacuum cleaner of nuclear fallout by exposing both positively biased and negatively biased probe electrodes at various locations in the atmosphere where harmful radiation has contaminated the atmosphere. Used with a nuclear powered Tesla coil, one can imagine the creation of nuclear powered artificial atmospheres.

Other benefits:

Super Capacitors are labor intensive to build, which can help reduce the unemployment rate worldwide.