New Discoveries to the Collision Electro-Magnetic Theory From 0-1 Series

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Can you imagine that two small stones can collide to generate electricity and light up a small lamp[1]? Can you imagine that knocking on the door with your hand can power the LED board and illuminate the book[2]? Can you imagine that the 28-watt fluorescent tube lamp can be lit up when you walk with it in your hand[3]? It turns out that generating electricity is simple. The energy generated by gently rubbing the plastic plate can light up at least a one-watt bulb, and even charge the mobile phone. The simple generator is made into a cylindrical type, which can efficiently collect wind energy under low wind speeds and easily light up ten one-watt bulbs[4]. Can you imagine stepping on tiles or floors can also generate electricity? Four 28-watt fluorescent tube lamps can be lit up by a car model sliding on the self-energy power road. Therefore, the world's first self-energy power road has been developed in the actual road and can efficiently collect the energy generated by friction between passing vehicles and the ground. Can you imagine that waving silk with your hand can wirelessly light up the LED board below? Can you imagine that the field current

generated by friction can penetrate the 5 cm thick streaky pork and light up the LED board above? It can be applied to the wireless power supply of implanted electronic devices such as cardiac pacemakers. Can you imagine the high-voltage electric field generated by friction or collision can be used for sterilization and disinfection? It has a remarkable effect on eliminating H1N1 and COVID-19. Our latest research found that the changing energy field generated by beating or rubbing the plastic plate with hands can not only wirelessly light up the LED board above, but also be collected by the nearby closed coil and generate induced current in the coils. The changing energy field generated by constantly waving a plastic rod with a static field can wirelessly light up a fluorescent tube lamp, and produce an induced current in a nearby closed coil at the same time. All original discoveries were initially coming from a red dress that Professor Xia CAO purchased from Taobao in 2016. Because the dress was prone to generate static electricity, she immediately had the bright idea to test it. When she shook the dress in the air, she found that the light board under the dress was lit up. Since then, the prologue of innovations, discoveries, and inventions has begun. At that time, the dress had been cut into pieces. But it is still preserved in her laboratory now.

Any scientific theory and discoveries are the product of human-stage cognition. No scientific theory is absolutely correct and immutable, and it will be constantly developed and improved with new discoveries. Through the above experiments, Professor Xia CAO proposed the Collision Electro-Magnetic Theory, that is, the electromagnetic energy can be generated by the collision[5]. She has re-examined and improved several traditional theories based on the latest findings. There's a loss of energy because electromagnetic energy is generated during each collision between the two balls when Newton's pendulum experiment is used to simulate elastic collisions. Further, we simulated inelastic collisions by colliding various non-rigid objects with the ball on Newton's pendulum, and we can see that there is an electrical signal, which means there is also a loss of energy. Therefore, we can infer that the conservation of momentum and mechanical energy are both approximate by considering the loss of

electromagnetic energy. Professor Xia CAO also found that when a wood block slid over a wood board, the electromagnetic energy generated by friction could easily light up the LED lights under the board. There must be an electromagnetic attraction with the generation of electromagnetic energy, so the electromagnetic attraction term may be added to the traditional formula for calculating friction and the formula for calculating work done by friction. It was found that the electromagnetic energy generated by an object moving at a low speed increases with its speed. Besides, the instantaneous power generated by an object in a high-speed collision also increases rapidly with its speed. It can be inferred that the electromagnetic energy generated by a high-speed collision will far exceed the traditionally recognized work done by the external force. The electromagnetic energy produced by the collision may be the excitation of the energy of the matter itself. We can boldly speculate that the collision of certain substances under certain conditions can also produce the energy of the atomic bomb explosion. The search for the best material and the best collision state has important implications for the development of new energy and nuclear energy.

We know that the motion of objects in the universe is eternal. As long as there is motion, there will be interactions. The collision of two small stones can produce electricity, and the atomic bomb explosion can be triggered by a high-speed collision of microscopic neutron streams. Let's venture to imagine that the collision between two celestial bodies can generate gravitational waves. According to the Collision Electro-Magnetic Theory proposed by Professor Xia CAO, electromagnetic energy will be generated when matter collides with each other, including macroscopic objects collisions and microscopic particles collisions. There will be electromagnetic fields generated when all kinds of objects are blown by the wind. The stronger the wind blows, the stronger the electromagnetic field generated. Does the constant friction between the rapidly rotating earth and the tiny particles of the surrounding atmosphere also generate electromagnetic fields and radiate electromagnetic energy into space? Are these findings related to the formation of the geomagnetic field? It can be

speculated that the relative movement between the surface of galaxies and the interstellar matter (energetic particle) also generates electromagnetic fields, and that the hypervelocity rotation and revolution of galaxies generate super-strong energy fields and hence super-strong gravity. Is this related to the formation of gravity? By refining the traditional model of gravity, the position and speed of motion of each planet can be determined more accurately. How much electromagnetic energy can be generated during the high-speed rotation and revolution of the planet? Is this energy the dark matter and dark energy that fills the entire universe? Just like the unified theory of electric and magnetic fields, electric field and magnetic field are essentially energy fields. An energized plasma sphere can produce a changing electric or electrostatic field. Rotating a closed circuit coil next to a working plasma sphere, she found that the induced current inside the coil can reach several milliamps, which is several times or even tens of times more than the current collected by the stationary coil. The induced output can light up one Walt bulb. Here we call this Electra-electric induction. In addition, she found that the induced current can be generated in the closed circuit coil without an external magnet. Moreover, when light energy, heat energy, wind energy and nuclear energy are applied, the induced current generated in the coil will increase. This research result further proves the Collision Electro–Magnetic Theory (CEMT) that she put forward earlier. Air movement will be accelerated by light, heating or wind blowing, and the increase of collision strength and collision frequency will lead to an increase in the electromagnetic field. In this way, the extremely strong electrostatic field near the high-voltage wire, as well as the electromagnetic field generated by the radiation of nuclear reactor or nuclear waste dumping， can be collected by the rotated coil driven by the wind, therefore achieving energy recovery and effective utilization. Without an external magnet, the closed circuit coil cuts the electromagnetic field line continuously, leading to the generation of induced currents. The changing energy field can be generated by the interaction of objects. If the changing energy field is collected by the conductor, it will generate an

induced current in the conductor, which is what we usually call the conduction current. There is also a part of the changing energy field that is not being collected, corresponding to the displacement current predicted by Maxwell, which can wirelessly drive the light panel and small appliances nearby. It can be seen that the induced currents generated by the changing magnetic field corresponding to Faraday's law and the induced currents generated by the changing electric field corresponding to Professor Xia CAO's theory of electromagnetic energy by collision are essentially the same. It's all about changing energy fields generated by relative motion, which can be collected by the coil to generate an inductively conductive current.

The electromagnetic field is generated by the interaction of a high-speed train with the surrounding air. Could this be used to explain the signal interference of mobile phone on high-speed trains? The missile flying at high speed will generate electromagnetic energy loss during the flight. Is this conducive to the development of precision guidance technology? The interaction of submarines with water in the deep ocean also generates electromagnetic fields. Could this be used in new targeting technology? Where there is a changing electric field, there is an induced current generated in the rotating coil near the field. No magnets are needed, so we can avoid the use of rare earth as much as possible. The constant collision movement on the surface or inside the Earth can generate changing electromagnetic fields. By collecting these electrical signals, is it possible to take the pulse of the Earth? Is it possible to monitor and predict earthquakes, tsunamis, volcanic eruptions, landslides, and other natural disasters in advance? Professor Xia CAO has made a series of discoveries that have gone entirely from 0 to 1, overturning traditional perceptions. Just like opening a door, it will have an immeasurable impact on physics, astronomy, new energy, nuclear energy, military and other fields. It will drive revolutionary and disruptive progress in related industries and the global economy.

Reference

1. Cao, X., et al., *Wherever there is a dynamic touch, there is electromagnetic field——a discovery for power generation.* Nano Energy, 2020. **78**.

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3. Cao, X., Y. Jie, and P. Ma, *Power generation by contact and the potential applications in new energy.* Nano Energy, 2021. **87**.
4. Cao, X., et al., *An easy and efficient power generator with ultrahigh voltage for lighting, charging and self-powered systems.* Nano Energy, 2022. **100**.
5. Cao, X., *New insights into Maxwell's equations based on new experimental discoveries.* Composites Communications, 2023. **39**.

International and domestic patents have been filed to protect the reported inventions.

The detail information about the series discoveries and inventions to see: https://youtu.be/SRkp0gjOL9g