Manufacturing electric cables from plastic waste - The great plan for the situation of plastic waste pollution in the world today

Treating plastic waste is one of the most urgent problems worldwide.

The biggest problem that mankind is facing is that although they can survive for a very long time outside the natural environment, most often get thrown away after just one use instead of being collected for processing and recycling. Take a simple example, we only take about 5 seconds to produce a plastic bag and need 1 second to throw away, but to decompose this bag, nature will take from 500 to 1,000 years.

Since the plastics were generally invented in the 1950s until 2015, according to statistics, about 8,300 million tons of plastics were created worldwide, but more than half of them (4,900 million) tons) have been buried in the left-handed regulations or thrown into the natural environment. According to estimates, the world now emits about 300 million tons of plastic waste each year, nearly equal to the weight of the entire global population. In particular, about 8 million tons of plastic waste is dumped into the ocean every year. Vietnam is one of the five countries with the largest amount of plastic waste discharged into the sea in the world. Vietnamese people discharge nearly 18,000 tons of plastic waste every day. Plastic waste floating around the oceans is causing scientists around the world a headache and a direct impact on the survival of marine ecosystems.

1. How are people using plastic to destroy nature?

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Not stopping there, the sad thing is that only a small percentage of the hundreds of different plastics being used worldwide are recyclable with conventional technology. However, there are still some effective ways that we can apply to reuse plastic after extremely effective disposal, such as a recently completed research project, focusing on The recycling of chemicals constitutes plastics, as well as how the plastics used to wrap and pack food will be processed to make many new materials, such as electric cables. .

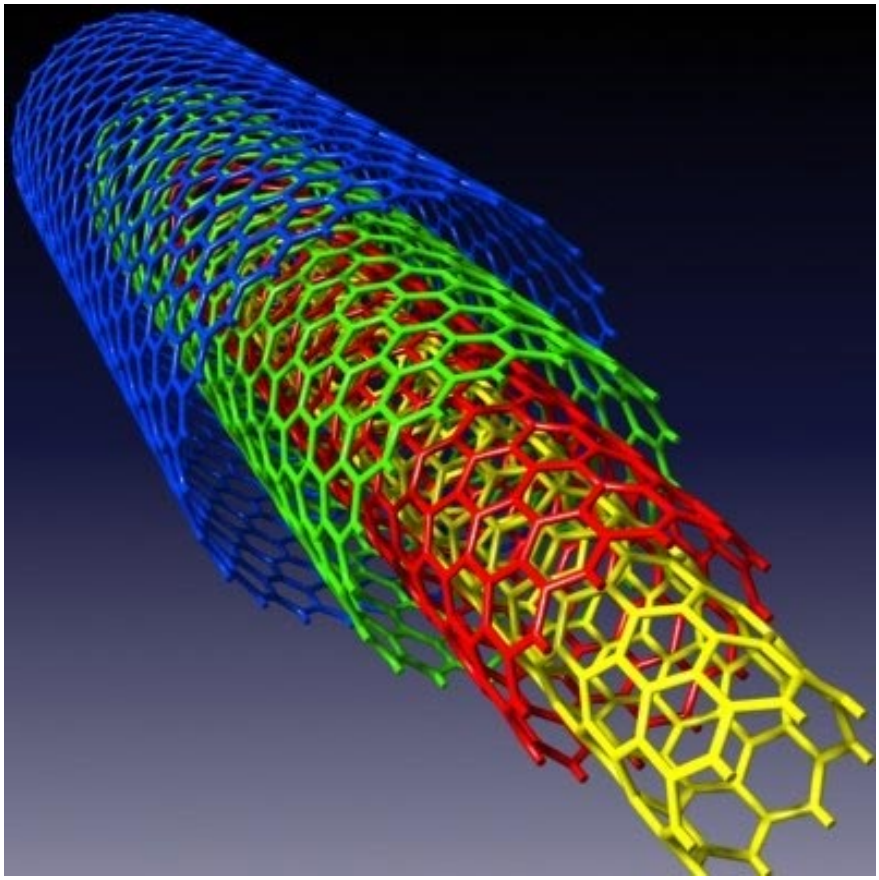
In the chemical recycling process, scientists will use the same elements that make up that waste to create new materials. In this case, all plastics are generally made up of carbon, hydrogen and sometimes oxygen. The number and arrangement of these 3 chemical elements will vary depending on the characteristics and purpose of each plastic.

1. Plastic containers are the latest threat to coral reefs

In addition, plastics are very pure chemicals and possess high refining ability, so they can be decomposed into individual elements and then recombined in different arrangements to create produce higher value materials, like carbon nanotubes. In theory, the only byproducts that do this must have high levels of oxygen and hydrogen.

Carbon nanotubes are small molecules that possess incredible physical properties. To better visualize, think of a piece of wire mesh that is rolled in the shape of a cylindrical tube - that is a simulated image of an extremely sustainable carbon nanotube structure.

1. Self-sustaining plastic can create more environmentally friendly wind turbines



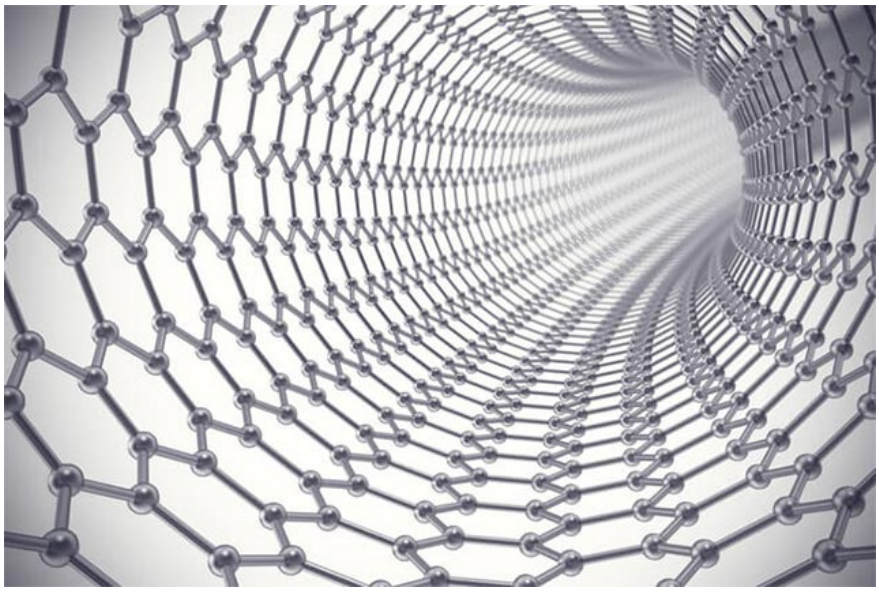
The "carbon nanotube" stacked walls are extremely sustainable

When carbon molecules are arranged like this, it can lead to both heat and electricity. The control and use of these two forms of energy in an appropriate amount are important, depending on the actual use.

In a new scientific study titled: 'Chemical Recycling of Consumer-Grade Black Plastic into Electrically Conductive Carbon Nanotubes' (roughly translated: The process of recycling black plastic chemicals used in living into conductive nanotubes), the the scientist took the plastic - especially the black plastic, often used as a tray for food and supermarket vegetables (this is one of the most commonly used plastics and is extremely difficult to recycle by conventional methods - removing carbon from them, then making nanotubes by using carbon atoms themselves.

In theory, nanotubes are 80,000 times thinner than human hair, and in fact, they are about the same thickness as a typical DNA strand. However, because it is made up of carbon-carbon bond, nanotube possesses a sustainable structure that is not inferior to diamond. They are so powerful that they can be considered the ideal material in making aviation items - the universe, including aircraft shells and spacecraft.

1. The inventions that can change the world of 3 girls less than 12 years old make everyone admire



Banotube looked from inside

In addition, nanotubes have been effectively used to conduct conductive film on touch screens, and the versatility of this material also makes them one of the ideal choices for flexible electronic devices. . Nanotubes have also been used to develop fabric fibers that can produce energy when you move, and NASA has used them to prevent electric shocks on the Juno spacecraft. Not only that, the recent Nanotube has also been used to make antennas for the 5G network, providing high practical use.

1. Ignoring the hype about environmental protection, electric cars still bring a lot of practical benefits

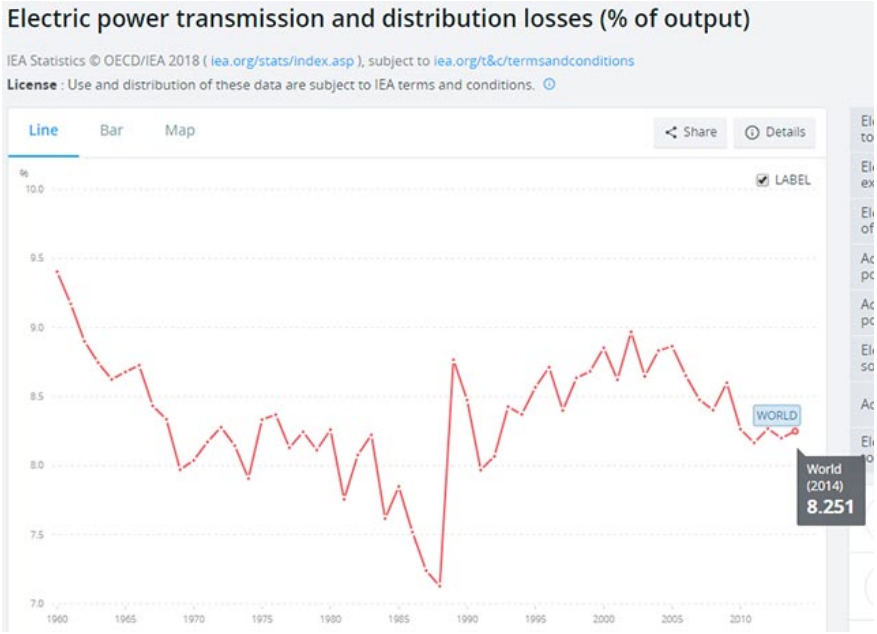
New usage direction for nanotube

During the fabrication of carbon nanotubes, scientists realized that this material could be used to make electric cables. Based on extremely durable molecular structure and good thermal conductivity, carbon nanotubes can

solve the problem of power cables damaged by overheating or harsh environments.

According to statistics, up to 8% of electricity worldwide is wasted in transmission and distribution. This new number may not sound like much, but on a global scale and the need to use energy in developing countries is a huge waste. In fact, the current power plants are forced to be located as close to the location as possible to use electricity to limit the amount of wasted electricity in the transmission distance.

1. The Bluetooth chip works without batteries, taking energy from the waves in the surrounding environment



8% of electricity worldwide is wasted in transmission and distribution

Many types of long-range (made of metal) power cables currently in use cannot be fully exploited because they will overheat and melt when they have to transmit too much power. This is a real challenge for a future shifting to renewable energy from the wind or the sun, because simply wind farms or solar battery fields are forced to be located away from residential areas, people come to work. The more power dissipated in transmission, the greater.

Scientists have spent many years studying the options needed to achieve the best electrical performance from carbon types. To do this, they first create the highest quality nanotubes by using the appropriate methods, thereby giving optimal conductivity, and the alternative is to make nanotubes from black plastic.

The initial prospect was relatively positive when scientists were able to use nanotubes to transmit electricity to light bulbs in a small demonstration model. In the long run, the team plans to produce carbon fiber cables with high purity from 100% plastic waste, along with finding ways to further improve the electrical transmission performance of the object. whether nanotube as well as increase output. According to calculations, this project is completely ready to be deployed on a large scale in about 3 years.

1. The 11th-grade student made his own solar-powered electric car

Metal power cables are easy to melt if operating at maximum capacity

Before the fact that the amount of plastic waste worldwide is constantly increasing day by day, scientists are also developing new options to quickly and economically save the amount of plastic waste through recycling. learn this. Any inefficient carbon molecule will be a waste, and can even turn back into a contaminant. Therefore, the team aims to keep this level at a minimum by capturing carbon after each treatment step, namely through chemical filtration systems to capture carbon molecules from emissions. , thereby can be recycled many times.

At the same time, scientists are also considering using other forms of carbon waste to make nanomaterials. Plastic is a well-known problem, but in fact there are still many other types of carbon waste that have the potential to be recycled by chemical methods such as tires, papers, paints, solvents and agents. cold.

1. Vehicles run by the air of Egyptian student groups, run and drop the station without wasting fuel

Treating plastic waste is one of the most urgent problems worldwide. Despite the ongoing propaganda campaigns, the amount of plastic waste that people emit has not only increased steadily over the years. The research as we have just learned is very important meaning, it shows that humanity can completely turn the 'thorny' problem facing today into a useful solution for a tomorrow. brighter!