

Research Article

Innovation in Electronic Gadget

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Abstract: In this era full of electronic technology, many electronic products such as laptop, tablets, televisions and other are abandoned or discarded every day for various reasons. As a result, every country produces tens of thousands of e-waste products every year. If electronic products are not cleaned or disposed of in time, they will lead to adverse human health effects and country environmental pollution because electronic products do not decompose easily. If these electronics are thrown away in landfills, for example, not only will the soil quality deteriorate, but it will take thousands of years to decompose. Therefore, it is necessary to recycle e-waste or make new products. Reusing the precious metals and plastics in old cell phones instead of mining for brand new materials can save the energy equivalent to power up to 24,000 U.S. homes for a year, according to estimates by the Environmental Protection Agency. This will not only help the country solve the problem of e-waste accumulation, but also help protect the environment from pollution or damage. Therefore, making sure that e-waste does not accumulate and turning it into various environment-friendly products is one of the ways to solve the problem of e-waste accumulation. Therefore, this article will talk about how to use electronic waste to make some handmade artworks, movie setting and even practical objects.

Keywords: electronic; e-waste; gadget.



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1. INTRODUCTION

Electronic waste or e-waste refers to waste electrical or Electronic equipment. Used electronics used for refurbishment, reuse, resale, recovery through material recovery or disposal are also considered e-waste. Technology has improved so rapidly in the past few decades that today it's hard to imagine what the world would be like without smartphones, GPS maps, laptops and other electronic devices.

Before invention of the reusable batteries, batteries are the most common of the electronic gadget that can just be used once to the power appliances before they finished their life in a recycling facility. Michel de Broin, a Canadian sculptor, created many public artworks in Canada and Europe. One of his artwork is called "Dead Star", using hundreds of batteries, urethane and polystyrene to form it. According to Michel, instead of putting them in the recycle centre, they also can be assembled again and be a unique decoration that can have it in the house and office.

Besides that, following more invention about the electronic gadget and more latest edition have been released, there is more and more wasted electronic gadgets produced and these kind of waste may

cause a huge disaster to the environment and human health. Benjamin Von Wong, a Canadian artist and photographer, is well known of his environmental art installations and hyper-realist art style. He used the wasted electronic gadget that ignore by people, turned them into hyper-realist artwork that people amazed. To raise the awareness of the society about the important of recycling wasted electronic gadgets instead of just throwing them away, he and his team get 1860 kilograms of these waste from Dell and design the amazing artwork. They used mainframe board of the computer, wood, the paint and others thing to design the arches.

They also used the laptop and keyboard, designed the movie scene that the character used his power to control the device. May be us as the common people cannot really effort to create these kind of huge artwork by ourselves. However, there is also some creation on the wasted electronic gadgets that we can do such as handmade beautiful butterfly crafts from discarded circuit boards. Instead of just throwing away the not function circuit board and the electronic component, we can combine them in an exquisite butterfly model. This not only reduce the amount of waste but also can be a delicate gift to the person that loved and also as a motivation to deeply love the life.

2. MOVIE SETS AND MOVIE PROPS

As we all know, filming requires the use of a large number of various props or scenes to attract the audience's attention. But movies and reality are two different things. For example, the outer space and spacecraft in science fiction movies cannot be realized in reality. This is needed to complete the setup and make the items, although it can also be synthesized by computer. But setting scene and making the props still needs to be done. If need to create the same scene as the script and the props needed to use must spend a lot of money and time to complete. Now, there are better ways to solve this problem. This method not only saves money, but also helps the country solve environmental problems and the cost of disposing of these things. The idea is to use all kinds of electronic gadget waste to create or decorate movie sets and props.

In those science fiction movies, the main character or supporting characters walk through arcs filled channel with starlight. Those tunnels could actually be made out of parts from electronic gadget waste. This is because some parts in e-waste are reflective and can be used to make items after processing. Hence, when the lights are turned off, the props made of these parts are illuminated in different locations. Those lights reflect off the parts will create a light effect much like a starlight channel. In addition, electronic parts can also be made into jewellery worn by some movie characters. This is because the reflective parts are processed and then lit up like diamonds, eliminating the need to rent expensive jewellery. Not only would it be perfect for movie scenes, but it could also help the country get rid of its accumulated electronic gadget waste.

Scenes and props in movie that made of electronic gadget waste can achieve the shock brought to the audience. Not only does e-waste make the movie look like science fiction, but it also lets the audience know that e-waste can be used again, and instead of throwing away the electronics gadget just because they break down, especially use imagination to create something new and useful. This will not only protect the environment from being polluted, but also help the country solve the problem of massive accumulation of e-waste. However, the downside of the e-waste is that it is not widely used in all movies, only in science fiction movies or those that require electronic devices to create fantasy scenes. As a result, e-waste is limited in the film industry. But totally the e-waste helps the production of the movies.

3. CIRCUIT BOARD CLOCKS

As we all know, with the progress of technology, people's lives have become inseparable from electronic products, which also led to the emergence of many electronic scraps. So in order to reuse these electronic scraps, this article will introduce the circuit board wall clock made of electronic scraps.

This clock has used discarded computer materials to come up with attractive and stylish circuit board clocks. These unique clocks have been built using rejected CPU fans, hard drives of laptops and circuit boards of computer. First the old circuit board, superglue, wall clock kit is prepared. Next a hole in the center of the board is drilled. Should be sure that no drilling into any electronic device such as capacitor and resistor. After drilling, the board might be a little rough, if necessary, take some rough sand paper and smooth it out. After that, inset the clock device on the circuit board. Lastly, the hand and nuts are attached as directed by your kit and insert battery. The procedure for doing circuit board wall clock done. The advantage of this product is that the electronic waste can be recycled without causing pollution. In addition, it can reduce the disposal of e-waste, reducing the cost of disposing of waste. The downside of this product is that it takes time to make and there is a risk of failure. The circuit board clocks can also be added with discs to display from 1 o'clock to 12 o'clock to solve the problem that the chip cannot display the time.

4. CONCLUSION

In conclusion, if the right measures are not taken to recycle electronic waste, pollution will get out of control and affect the environment adversely. The electronic waste is more harmful to the environment than other types of waste. Recycling is one of the ways every responsible individual can take to keep this type of pollution in check. When you look at a new and glossy smartphone or an elite looking laptop you do not give a single thought to the environment. The truth is that for producing every single new electronic product valuable, non-renewable materials are being used. You may upgrade from one smartphone to another and throw the old phone away but this can deeply affect your surrounding environment. Recycling and optimal use of electronic products are the only solutions to reduce electronic waste.

E-waste holds many possibilities in the field of film. As long as people know how to use their imagination to innovate and design the scenes and props in the film. This can make the film more realistic, not just through computer synthesis. Scenes or props made from e-waste not only save money, they also save resources, allowing the country to use those resources elsewhere so that the country can prosper.

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References

- Lifetime possible use! Nearly 2000 kilograms of DIY e-waste art. Retrieve from <https://www.shouyihuo.com/view/12476.html>, Reference Date on 19/5/2022
- Waste Batteries Handmade Low-Carbon Environmental Protection Decorative Art. Retrieve from <https://m.rouding.com/bianfeiweibao/41300.html>, Reference date on 19/5/2022