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Electronics for a Sustainable Future

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DESCRIPTION

By switching from conventional industrial methods to printed electronics and from fossil-based materials to bio-based materials, the electronics sector may significantly reduce its environmental impact. Up to 90% of fossil materials can be replaced in some applications by employing printing technologies. Eco design, on the other hand, encourages the recycling, and recovery of priceless materials. VTT has broad expertise in all of these fields and can provide extensive information on both the development of electronics and sustainable materials. Electronics, from smartphones to laptops to wearable technology, have become a necessary component of our daily life. Due to the boom of devices, the worldwide consumer electronics sector is now projected to be worth $1 trillion (and rapidly growing). Despite the fact that these gadgets are frequently composed of sturdy materials like metal and plastic, they are frequently viewed as disposables and thrown away after usage, creating enormous volumes of trash.

Preparing silicon wafers, optically reducing and transferring masks to the wafer, doping, adding consecutive layers, and generating individual integrated circuits are the first steps in the manufacturing of integrated circuits. Acetic acid, acetone, ammonium fluoride, hydrochloric acid, methyl alcohol, hydrogen peroxide, nitric acid, phosphoric acid, sulfuric acid, xylene, and other substances are used in these procedures. These and other chemicals and gases are used in processing processes that create toxic and hazardous byproducts that call for unique cleanup, management, and disposal techniques. Just as my perspective was altered by that attempt to construct a realistic paper aero plane, new sustainable technologies have the potential to change the electronics sector. The electronics sector would confront difficulties without the influence of sustainability. The need for electronic gadgets in the consumer, industrial, military, and aerospace sectors is undoubtedly here to stay. Yet, the resources needed to make those devices have diminished and might someday vanish.

Every product's distribution, usage, reuse, recycling, and disposal are all included in a life cycle analysis. In the final stages, Design for Sustainability takes electromagnetic fields, vibration, noise, pollutants, and energy use into account. These elements all have the potential to have an impact on both humans and the environment. These elements working together can have greater and more enduring effects on various levels. Through various applications, their effects become clear. A typical smartphone container, for instance, has cardboard packing, paper instructions, bubble wrap to shield the phone, and plastic wrappers for separate parts like earphones and a power supply. A portion of the packing materials may come from various businesses based in various countries or areas. The Smartphone has a particular glass screen that responds to human touches, as well as fasteners, adhesives, and a plastic cover. Within the phone are a printed circuit, parts, and batteries made of anything from aluminum and cobalt to copper, silicon, and nickel.

Green electronics are those made using ecologically friendly procedures; they consider the amount of energy and carbon created. Green electronics use less natural resources because they are made from recycled materials. The need for the most recent electronics has been on the rise for many years and will continue to do so. Market Monitor predicts that during the next five years, the electronic component market will expand by about 5.6 percent.