REPORT INCI

INSTITUTO NACIONAL DE LA CASA INTELIGENTES AC

Air-Ink: The Production of New Age Materials Using Waste

Introduction

In today's modern and high-speed society, we have become wired to be as fast and productive as possible in order to make money and improve ourselves overall. We have been able to push our limits of productivity to extraordinary heights, especially with the use of modern technology. With the use of transportation such as cars and trucks, we have been able to transport ourselves to our destinations faster than ever. With the introduction of consumer electronics, we have the ability to easily purchase cutting edge technology with access to virtually unlimited resources all while being able to fit the devices in our pockets. This has allowed humans to be not only incredibly productive, but also smarter than ever before. However, these advances in technology also has some serious side effects, especially those involving waste management and pollution. Waste and pollution are produced from just about everything, from cars, to construction machines, to manufacturing. While we have new and cutting-edge technology every year, the amount of energy and resources required to keep up production is substantial and is producing obscene amounts of greenhouse gases, which harm the environment. For example, an astonishing 97.2% of cars sold in 2016 are powered by gasoline, and that's the second lowest number ever (96.2% in 2013). With about a billion total cars ever produced in the world, the amount of tailpipe emissions is incredible. Surprisingly, vehicle emissions are not even the biggest cause of GHG production. Manufacturing and energy production are the biggest contributors in the pollution of the earth and global warning. There are thousands of ideas to mitigate this issue, and conserve energy, but the fact remains that with current technology, we must burn fossil fuels in order to stay afloat in society. Most solutions proposed usually try to conserve resources, but the ideas discussed in this essay are those which attempt to recycle byproducts of pollution such as soot, trash/ waste, gas, etc. A topic discussed include the conversion of diesel soot into a form of ink that can be used in printers, markers, and spray guns. This is relatively similar idea to that of collecting the pollution floating in the air, condensing it into a tangible material, and using it to construct things. The third idea is that of using recycled water bottles to make pens.

With ideas like these, we can effectively reduce overall pollution by making use of byproducts that would otherwise be released into the ecosystem and the atmosphere.A.I. is increasingly asked to assist with decisions that shape real lives. For those with experience in paralegal work and criminal justice, this raises an unsettling question: can systems built on probability and pattern potentially serve a justice system rooted in fairness and accountability? Can the A.I be truly fair and unbiased? Does the A.I. consider all potential aspects of a situation such as the ethics vs the legality of certain matters?

The first idea discussed is that in which the soot from diesel engines is condensed and converted into a form of ink that can be used in printers, markers, and spray guns. An Indian man based out of Bombay, India, developed an idea and a system in which he would collect the byproducts of combustion from candles and engines, condense the soot, and use it as ink. On his TED talk, he mentioned that his inspiration came from witnessing a diesel engine's exhaust staining a nearby wall.

He began his first experiments of this idea in his own home by making a small device out of a candle, fan, some tubing, and a syringe plunger. This system was designed to collect the by products of the candle for the ink. He later expanded his company and shared his ideas with an investor. In this way, he was able to implement his system in several locations across the world which all produced soot for the ink. At one time, he even had about 30 large sacks filled with soot from one location destined to become ink. Once there was a substantial amount of waste stockpiled in the manufacturing location of the ink, the company then produced pens and markers and sold them to various artists around the world. Soon, murals and portraits began appearing in public and private venues with the words "This art was made with air pollution." The product is called "Air-ink" and even gained enough fame to be featured in "Contagious Magazine" and in art made by Christian Furr. Air-Ink even produced clothing with designs printed with pollution-ink. This special ink was also a hit in popular culture, considering that a large amount of focus and efforts are directed towards the conservation of the Earth. While making markers out of small-scale pollution is not very effective, the message it sends is incredibly important. It shows that even though there may be waste produced in the world, it does not mean that it is useless. If smaller, efficient, and more refined versions of Air-Ink's pollution conversion system were implemented into cars, coal plants, and factories, it is possible to supply the entire world with ink so there would no longer be a need to produce new ink.

The idea of Air-Ink could very well be applied to the solutions proposed by the group in the other report that I had participated in. This report was based around the decrease of overall air pollution on the Earth. The solutions proposed included the promotion of electric cars, development of solar panels, and focused roadcrews, as these were the solutions to the biggest causes of air pollution (Traffic, Transportation, and Energy Production). All of the elements present in these three categories involve the burning of fossil fuels such as gasoline, and more importantly, diesel. If the waste collection systems that Air-Ink relies on could be applied to the problems listed in Group 3's report, it would still mitigate the issue at hand without having to sacrifice the practices discussed in that report. Gasoline and Diesel could still remain as large sources of energy in both construction and transportation while the overall emissions decrease. This is a favorable alternative to other solutions proposed (e.g. only purchasing electric vehicles), as it is possibly the most cost-effective option.

Upon its announcement, Air- Ink was shown to be a new innovation that could make use of wastes that previously were not perceived to be useful. While this is the first-time diesel soot has been reused, it is not the first idea that proves waste could still be useful. For example, recently, the "Pilot" pen company has released a line of pens that make use of waste in a new way. The pens are named "Bottle2Pen". As the title suggests, these pens are made from recycled plastic containers such as water bottles.

While the recycling of water bottles is not a new concept, they are being used in a new, more widely available fashion. In the past, plastic recycling has been useful in the production of miscellaneous materials and plastics. While this is a good idea, it does not really promote more recycling. The consumers rarely take part in the production with recycled materials. The consumer never has a tangible result of recycling, so they are not particularly pushed to recycle more often. However, with the "B2P" pens, consumers can touch and use the products of recycling and they receive a clear message to recycle more often, as it results in quality products such as the pens. Furthermore, the "B2P" pens are particularly appealing to use as they are made of thick, high quality plastic and use gel ink which is typically smoother and longer lasting. The quality of the pens causes the consumer to continue buying the pens and help spread this idea of recycling to more and more places in which others may also learn about the pen and be exposed to the ideas behind the pen.

Another example of waste recycling is that of an artist, named "Brother Nut", located in Beijing, China, who has spent over 100 days roaming the streets of Beijing vacuuming the air and collecting dust and smog over time. With the particles collected from the air, Brother Nut was able to start producing red bricks. While it took him a rather long time to collect enough dust to produce a single brick, it still shows that the pollution in the air can be made useful on a small scale.

There are constantly new ideas being proposed to solve issues of pollution in the world. These ideas are generally praised for their innovation and willingness to help save the ecosystem. However, many of the ideas end up failing or being ineffective because they rarely capture the attention of large companies, governments, and most importantly, the public. Many of the failed attempts are turned down because of lack of funding, especially considering that many solutions are not very cost effective compared to the positive results. Examples of this are electric cars, pollution bricks, and solar panels. Since there is a considerably low amount of benefits and high cost, the common consumer is unable to invest in these solutions, even if they did have an interest in doing so. It appears everyone likes the idea of saving the planet, but nobody is willing to spend neither time, nor money for this to happen. Therefore, the planet is left with an ever-increasing problem of waste management and pollution. However, it seems as though efforts to clean up the planet are becoming more widespread and common than before, so at least there is some appeal. Hopefully society becomes more accustomed to the idea of giving up some commodities to conserve the planet they live on and possibly making it a more beautiful place than ever before for our future generations that will inhabit it.

A sample of the Diesel Soot used in “Air-Ink”

This picture is an example of a *Pilot B2P* Pen

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