

Plastic Recycling

Innovations in Recycling

Plastic waste is increasingly problematic globally, contributing to water pollution, unsightly litter, and health issues in both animals and humans. The discussion around recycling is hindered by it being considered a confusing and unglamorous topic. As Oke states, "...what constitutes waste, recycling, and how recycling information should be designed and presented to make recycling more attractive" is often a source of befuddlement. As a result, hardly any waste is successfully recycled. The following innovations hope to curb this issue by reutilizing waste or streamlining the recycling process.

PureCycle Technology

A fascinating solution is that proposed by the company PureCycle Technology: "[Look] for new ways to recycle plastics in an endless loop, so it never becomes waste." (National Geographic) For them, plastic is a renewable resource instead of garbage after it has fulfilled its intended purpose. The scientists of PureCycle Technology, led by chief technologist and founding inventor John Layman, "developed a revolutionary process to remove color, odor, and contaminants from polypropylene plastic waste and transform it into a "virgin-like" resin, which is the basis for plastic products." (National Geographic) Polypropylene is the second-most used plastic in the world, yet only one percent is recycled. While scaling their operations to put a dent in the world's polypropylene waste will take many years, PureCycle Technology presents a promising path for recycling going forward.

AI Sorting

Another potential aid to plastic recycling is the implementation of AI in recycling facilities for sorting. Sorting recyclables is a huge deterrent for consumers and a source of headaches for engineers and recycling facilities. Currently, only humans have the ability to tell the difference between various materials with accuracy. (Honrubia) However, while people are capable, they are often unwilling to spend the time meticulously combing through their garbage for recyclables and sorting them. For this predicament, "AI is the perfect solution...due to the highly irregular and unpredictable nature of garbage." (Honrubia) AI is capable of utilizing deep-learning algorithms to identify an object's composition and then direct robotic arms to properly sort them into corresponding categories.

Converting Waste Into Electricity

The incineration of waste to generate electricity has been around for a few years now, but the breadth of implementation has been narrow. This method works because, "plastics...contain mainly carbon and hydrogen, with similar energy content to conventional fuels such as diesel." (Livia) In Sweden, this is so profitable that they have begun importing other countries' trash. (Livia) Unfortunately, this method has several drawbacks, including water and air pollution. It may also discourage less environmentally impactful forms of recycling.

Produced by the

**Utility Arborist Association Environmental Stewardship
Committee**

and Davey Resource Group:

Work Cited

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