

REPURPOSING CIGARETTE BUTTS INTO USABLE TEXTILE

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ABSTRACT

The history of smoking can be traced back to 5000 BC in America, and the trade of tobacco spread swiftly. Mass production quickly broadened the scope of its recreational usage. When we look around us now, we can see that the most visible pollutant is cigarette butts, which can be seen in each location where humans have colonized. People of all ages are smoking and cluttering their environment with photodegradable cigarette filters. This means that, as a result of sunlight, these filters would degrade into microscopic particles over time, and their toxins would dilute in water/soil and remain on Earth indefinitely. We cannot prevent people from smoking, but we can recycle trash cigarette filters into useable textiles. Cellulose Acetate is a natural plastic made from pure cellulose. Natural cellulose with the desired characteristics is generated principally from two sources: cotton linters and wood pulp. Because cigarette butts contain such a high concentration of cellulose, they are perfect candidates for recycling. As a result, if the toxicity of the used butts is lowered and the unpleasant odor is removed, they can undoubtedly be utilized to make useable textiles. This research aims to repurpose toxic cigarette butts into usable textiles with the help of chemical treatment. Treated cigarette butts have two components: Cigarette butt Filaments (found inside cigarette butts) and Tipping paper (the outer covering). This paper focuses on repurposing both of these components into Repurposed Cigarette Butt Filament Shoes and Recycled Dyed Cigarette Butt Paper, respectively. In order to repurpose cigarette butt filaments into shoes, purified filaments were spun into yarns that carry properties of both cotton linters and wood pulp. Yarns were then woven into fabric. Shoes were chosen as the end product from the repurposed fabric because smokers usually put out cigarettes by throwing them on the ground and stepping on them. Hence, this research completes a full circle by repurposing cigarette butts into a product used to put them out.