

Economic evaluation and environmental impact of surgical masks

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This work addressed the problem linked to the COVID-19 emergency which is leading to a significant increase in disposable textile waste. The study takes into consideration the manufacturing and disposal processes after the use of disposable masks.

The LCA analysis has shown that the mechanical recycling method can give a benefit to the environmental performance of the mask.

The study, carried out to recycle face masks used to hinder the spread of the virus, also demonstrates an economic opportunity for Europe. Currently, the primary products to produce the masks and the technologies to make the non-woven material are located outside the European Community, with the majority in Asia. In fact, the study shows that the introduction of mask recycling processes would lead to a potential reduction of environmental impacts, following mechanical recycling, and would have an economic impact on the costs related to production and end-of-life management: new secondary raw material would be created, which can be used to produce new masks or other materials with a foreseen interesting potential market.