



130 billion masks have been used every month during the COVID-19 pandemic | Photo source Anton on Unsplash

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## BATTERIES MADE FROM RECYCLED FACE MASKS

 SUSTAINABILITY

### The low-cost, disposable batteries can be used for household appliances such as clocks and lamps

**Spotted:** The global population has been using more than 130 billion masks every month during the COVID-19 pandemic. And when these masks are thrown away, they create hundreds of tonnes of polymer waste. This waste is difficult to recycle and emits toxic chemicals if burnt.

To tackle the issue, a team of researchers from Russia's National University of Science and Technology 'MISIS' (NUST MISIS) have developed new technology for converting discarded masks into batteries for use in household devices. Waste drug blister packs are also used as a shell for the battery, and graphene is the only new material that needs to be procured for the process. The batteries store energy well and are cheaper to produce than their metal-coated conventional counterparts.

Masks are not the only surprising material researchers have used to create recycled batteries. Others include coconut shells, rice husks, newspaper waste, and tyre waste. However, these materials all must undergo high-temperature charring in specially designed furnaces. By contrast, the batteries in the NUST MISIS study did not need to go through this process – reducing costs.

The research team's next ambition is to use the technology to create larger-scale batteries for applications such as electric cars and solar power stations.

Battery technology is an important area of development, and Springwise has previously spotted [wood-based batteries](#) and an [electric vehicle battery recycling process](#).

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## Takeaway:

Face masks may help to protect people from COVID-19, but they are not good for the health of the planet. Masks are typically made mostly from plastic material that is highly liquid-resistant and non-degradable, and many scientists have become concerned about the environmental impact of the growth in mask production during the pandemic. Researchers from the University of Portsmouth observed a **9,000 per cent** increase in mask litter in the seven months to December 2021. Another **study**, published in June 2021, concludes that 'neglecting the seriousness of this issue may lead to the release of large tonnes of micro-plastics to landfill as well as to the marine environment'. Solutions, such as the one developed by the NUST MISIS team, are therefore essential if we are to avoid following the current human health crisis with an environmental one.