

# Taking the moisture out of moisturizers to reduce their carbon footprint and packaging waste

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Credit: University of East Anglia

Researchers at the University of East Anglia have developed a new technology that turns beauty products like moisturizer into a dry piece of confetti-like "paper."

The breakthrough means that 98% of the water in products like moisturizer, sun-cream, shampoo and conditioner can be removed. Users simply need to add a drop of water to the paper-like disk to rehydrate it instantly. It could revolutionize the beauty industry by dramatically reducing both its carbon footprint and packaging waste.

The new technology also removes the need for preservatives in these products and improves their [shelf life](#).

Lead researcher Prof Sheng Qi, from UEA's School of Pharmacy, said, "Most [cosmetics](#) and toiletries contain up to 95% water, leading to heavy units by volume and bulky packaging. Every year, 120 billion units of cosmetics and toiletries are packaged and shipped globally, so the industry has a huge carbon footprint.

"The technology that we have developed uses a no-heat process to transform a range of water and oil-based based beauty and skincare products into small disks of paper-like material."

The innovative process allows up to 98% of water to be removed, while preserving the stability of delicate active ingredients. Just add a single drop of water, and the dry sheets rapidly reconstitute to a cream or lotion, which can be applied in the same way as conventional products.

Prof Qi said, "We originally developed this technology for the [pharmaceutical industry](#), but it quickly became clear that it could really help reduce the carbon footprint of the beauty and skincare industries.

"Removing the water and oil from toiletries like moisturizer, sun cream, and other hair and [beauty products](#) means that we can not only improve their shelf life but hugely reduce product and packaging weight, [transportation costs](#), plastic waste and the need for preservatives.

"Above all, it dramatically reduces their [carbon footprint](#), which is better for the environment. We hope it will help the beauty industry achieve Net Zero carbon targets and sustainability goals, without compromising product quality and performance."

Provided by University of East Anglia

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