



Nano-enoki material | Photo source [University of Pittsburgh's Swanson School of Engineering](#)

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MUSHROOM-INSPIRED, WATERPROOF COATING OPENS UP POSSIBILITIES

 SCIENCE

Researchers have developed a flexible waterproof substance made of nanostructures shaped like mushrooms

Spotted: The ability to use some types of technology, such as solar panels, can be limited by the need to coat them in a material that can repel dirt and water, while also letting light through. However, these water-proofing materials tend to be rigid, which limits the ability to incorporate the technology into flexible applications like clothing or furnishings.

Now, researchers from the University of Pittsburgh's [Swanson School of Engineering](#) have developed a flexible coating material, inspired by the Enoki mushroom.

The researchers created a coating out of polyethylene terephthalate (PET). The coating contains nanostructures shaped like Enoki mushrooms, with long, thin stalks and larger caps. The shape keeps liquid on top of the nanostructure, and also makes the coating highly transparent. The research was published in the [Journal of Materials Chemistry A](#).

In addition to the high transparency, the coating also has a high haze factor, which means that light is scattered as it penetrates the coating. This makes the coating ideal for use in creating flexible solar cells or LEDs. In tests, the coating had no trouble completely shedding substances that usually stain and leave residue behind, such as mustard and coffee.

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Takeaway:

Researchers named the new coating Nano-enoki PET. Uses for the coating could include improving previous innovations involving [flexible lighting](#) and [wearables](#), to add a greater degree of waterproofing. It could also be used to develop new ways to incorporate lighting into materials like paper and curtains. Because the nanostructures allow materials to repel a wide range of liquids, they also have the potential to be adapted for medical applications which resist bacteria or blood clotting.