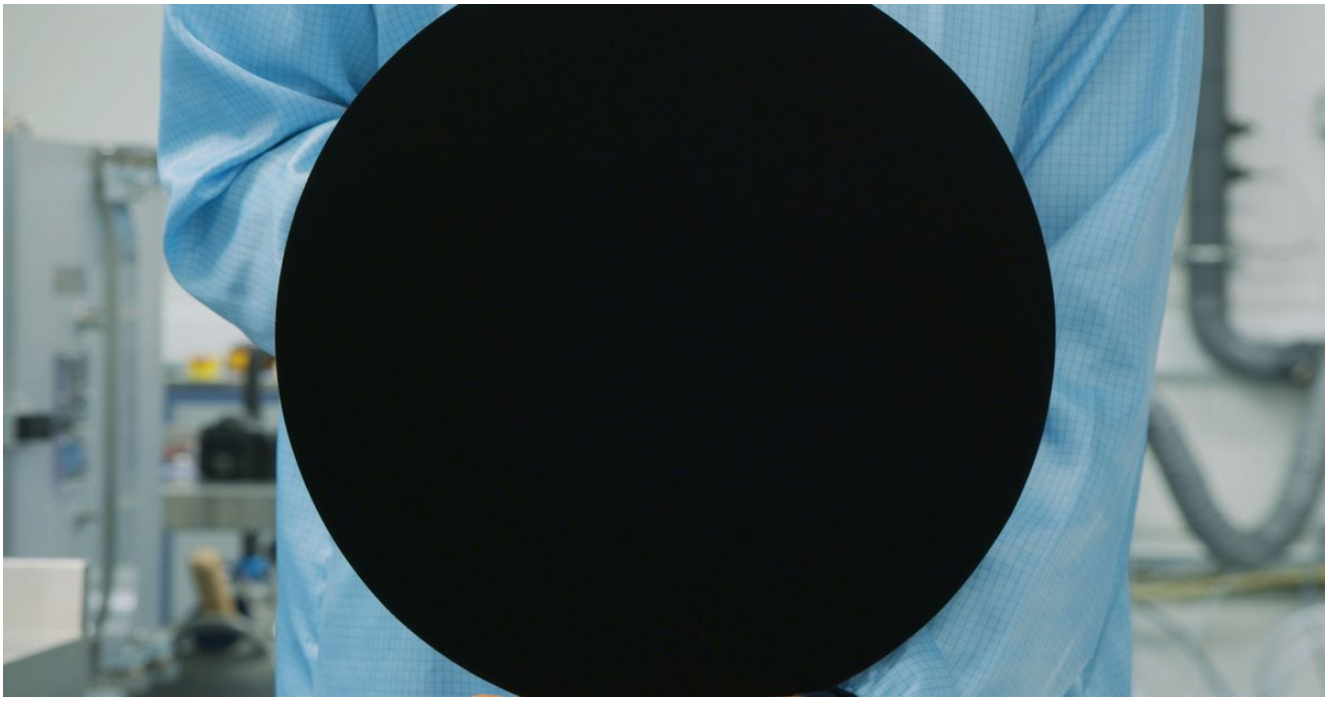
How carbon nanotubes built this bizarre ultrablack material



Imagine shining a flashlight on a black surface and seeing… nothing. This happened to me back in June outside a small coastal town in the UK. I was at Surrey NanoSystems, the company that makes the black material I was marveling at. It’s called Vantablack, and it’s one of the darkest substances on Earth.

Vantablack is made from carbon nanotubes, which are tiny carbon cylinders with walls as thin as one atom. These structures absorb any light that touches the surface by trapping the photons until they are almost completely absorbed. This makes it confusing to look at, flattening 3D objects as flat, empty black blobs. With no reflection to guide us, it just looks like a hole in space.

It’s not just a parlor trick. Carbon nanotubes have real-world applications beyond Vantablack. They can also help us fortify sports equipment and track stars. Nanotubing has been touted

as a wonder material since its discovery, thanks to high thermal and electrical conductivity combined with great mechanical strength. But much of that world-shifting potential still hasn’t been realized. In the meantime, producing nanotubes has led to happy accidents like discovering one of the blackest materials on Earth.

So while we are waiting for the broader promise of carbon nanotubes to change the world, check out the video above to explore the mind-bending illusions of Vantablack.

https://www.theverge.com/2019/8/20/20813054/vantablack-ultrablack-black-material-surrey-nanosystems-carbon-nanotubes-science-materials