New invisibility cloak hides objects from human view

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For the first time, scientists have devised an invisibility cloak material that hides objects from detection using light that is visible to humans. The new device is a leap forward in cloaking materials, according to a report in the ACS journal *Nano Letters*.

Xiang Zhang and colleagues note that invisibility cloaks, which route electromagnetic waves around an object to make it undetectable, "are still in their infancy." Most cloaks are made of materials that can only hide things using microwave or infrared waves, which are just below the threshold of human vision. To remedy this, the researchers built a reflective "carpet cloak" out of layers of silicon oxide and silicon nitride etched in a special pattern. The carpet cloak works by concealing an object under the layers, and bending light waves away from the bump that the object makes, so that the cloak appears flat and smooth like a normal mirror.

Although the study cloaked a microscopic object roughly the diameter of a red blood cell, the device demonstrates that it may be "capable of cloaking any object underneath a reflective carpet layer. In contrast to the previous demonstrations that were limited to infrared light, this work makes actual invisibility for the light seen by the human eye possible," the scientists write.

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