Cloaking device makes colour red invisible

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A new theoretical device is the first-ever to shield objects from parts of the light spectrum visible to the human eye, according to a study from Purdue University.

Cloaking devices have long been the stuff of science fiction and fantasy - helping Klingons elude the Enterprise in Star Trek and Harry Potter hide underneath an invisibility cloak. But now scientists say that device is one step closer to becoming the real deal.

It's not perfect yet - the computer-modeled device can only hide the red wavelength. So an object inside the device would only be hidden if you were wearing polarized red-tinted glasses.

"But this is a first design step toward creating an optical cloaking device that might work for all wavelengths of visible light," says lead researcher Vladmimir Shalaev in a press release.

The device uses nanoscale needles - objects so small they're measured in billionths of a meter - and layers them in a cylindrical shape around a central spoke, like a winding staircase.

The design is able to guide light around an object, important to complete a realistic cloak. (If light were only repelled from the object, you'd still notice a hole or shadow where the object was located. With the wrapping around the object, you'd see behind the object, as if it weren't there.)

Despite being limited to one wavelength of light, researchers say the cloak could be made any size and used for military applications.

A soldier could be cloaked from those wearing night vision goggles, for example.

The study appears in this month's issue of Nature Photonics.