Practical Cloaking Devices On The Horizon?

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(PhysOrg.com) -- Invisibility cloaks get a step closer to realization, with the demonstration of a new material that can bend (visible) light the 'wrong' way for the first time in three dimensions.

In *Nature* this week, researchers report a metamaterial that produces negative refraction of visible light, and show that it can be can be easily probed from free space, paving the way for practical optical device applications.

Metamaterials are artificially engineered structures that have properties, such as negative refractive index, not attainable with naturally occurring materials. Only thin, effectively two-dimensional materials have been demonstrated until now, limiting practical applications.

Jason Valentine, Xiang Zhang and colleagues at the University of California, Berkeley create a multilayered, 'fishnet' structure which unambiguously exhibits negative refractive index. This straightforward and elegant demonstration enhances our ability to mould and harness light at will.

Read a follow-up story: Invisibility cloak now within sight: scientists

This paper will be published electronically on *Nature's* website soon. It will not appear in print on 14 August, but at a later date. (DOI: 10.1038/nature07247)

Provided by Nature

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