

A touch of gold makes glass more see through

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The research has the potential to change the way we watch TV

(PhysOrg.com) -- Physicists at the King's College London have discovered a means of making glass more transparent - by coating it in a thin layer of gold.

Researchers have found that by covering [glass](#) with a film of gold more light can be transmitted through more angles, reducing the amount that is reflected back. This could change the way we watch flat-screen TVs or view light-emitting diodes (LEDs) in watches and alarm clocks, which currently must be seen head-on for a clear perspective.

In these examples the light is generated from within a layer of active material inside glass. This light is then trapped within the emitting layer, which means it cannot be viewed at other angles other than almost face on.

Instead we see a reflection rather than seeing through the glass to the

image behind it. This is due to light being completely reflected back at larger angles from the glass rather than passing through it.

The research, published in *Applied Physics Letters*, shows that by applying a very [thin layer](#) of gold over the glass and controlling the thickness of the thinnest part of the [layer](#), the interaction of the light and electrons can be engineered on the nanoscale to increase the transmission of light through the glass. This results in light passing through the glass even when not viewed straight on, and at a greater intensity.

Ryan McCarron, a PhD student from the Department of Physics who is leading the project, said: ‘This research could greatly increase output in [LEDs](#), allowing new heights of efficiency to be reached.

‘It may also allow nanoscale [light](#) sources for many other applications, such as bio and chemical sensing and integrated photonics.’

More information: The full paper can be viewed at apl.aip.org/resource/1/applab/v99/i8/p081106_s1

Provided by King's College London

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