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THERMAL SENSITIVE MATERIAL APPLIED ON LIGHT GUIDE TO REDUCE VISIBILITY WHEN LED'S ARE NOT IN USE

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Thermal sensitive material applied on light guide to reduce visibility when LED's are not in use

Abstract:

Customers using an electronic with a light guide today usually see the light guide is recessed in order to hide it with other structural designs. Since the light guides are typically white in appearance the color choice is limited for light transmissivity, visibility of light guide structure is not ideal for ID design. This proposed solution would apply a thermal sensitive material that would change with the low emitted heat from LED lights to become transparent. In this way, when lighting is switched off the light guide would blend into the industrial design allowing for more flexibility of the product design and light guide color selection.

Advantages:

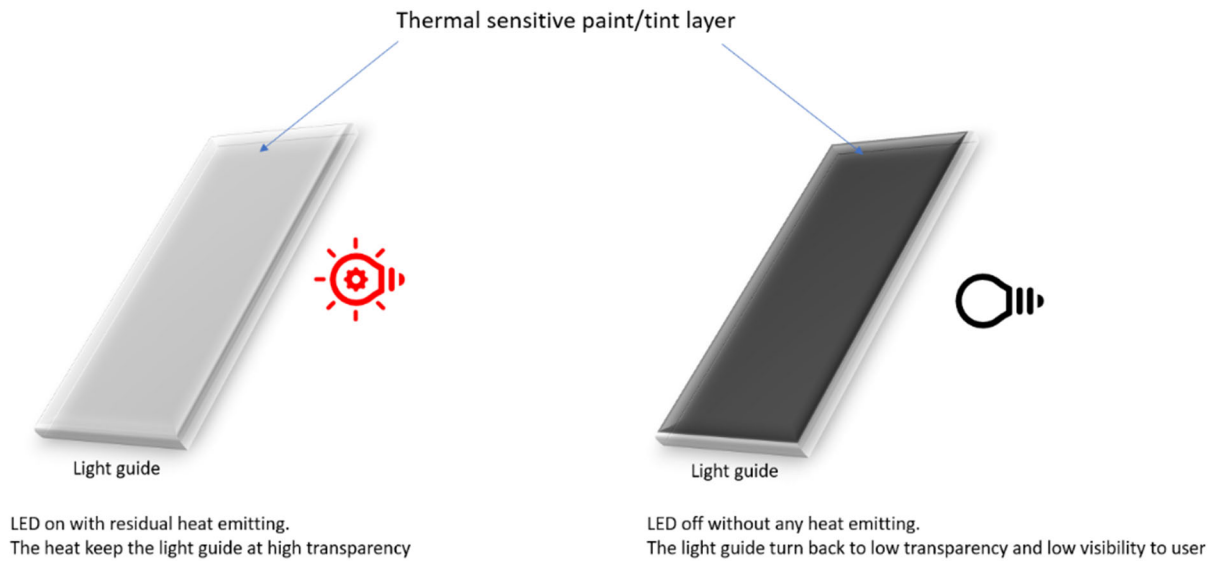
In electronic devices implementing LED light guides, LED visibility can be reduced when not in use. This solution not only provides a variant for light guide appearance but has the potential to reduce cost by reducing ID design complexity involved in implementing a recessed light guide. Especially when in a dark room, the light guide will not be as visible and can blend into the mouse color surrounding the light guide. This solution can also give the flexibility of light guide transmissivity using heat variance.

Solution:

In our proposal, the solution would:

- Coat a light guide exterior with a thermal sensitive material
 - Implementation must be with known properties such that it becomes transparent when exposed to heat for the LED lighting.
 - When the material becomes transparent the light will be allowed to diffuse through the light guide
- Allow the light guide surface to cool and the material coating to become less transparent, blending the light guide in with the mouse surface when the LED lighting is turned off

An illustration of the light guide is proposed with an LED light guide structure is shown below:



Disclosed by Zody Lin, Alexander Williams, Ligy Kurian, HP Inc.