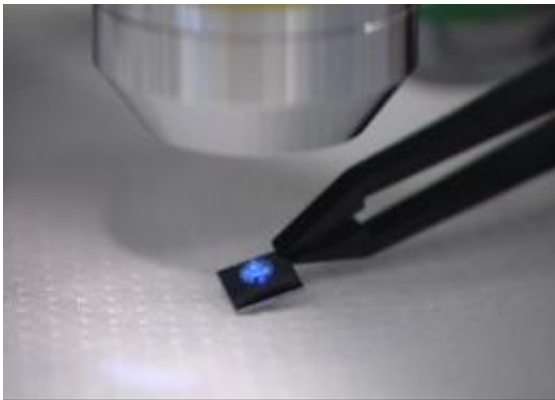


A nanotech solution controlling the path of light can brighten up our lives

July 18 2011, By Annette Ostrand



We want our electrical devices to have bright screens with low energy needs, so they can be used for a long time before recharge is required. Scientists are increasing the intensity of light by making nanometer scale patterns on surfaces. The nanoimprinting method will change devices' optical properties, without making them demand more energy. Except for brighter mobile phone and computer screens, we may soon have the possibility to benefit from this nanotech solution while driving.

Researchers have modified [surface](#) structures by making nanometer scale patterns, with the help from a technology called nanoimprinting. Nanoimprinting is a high through-put and low cost method that produces these patterns through the use of a stamp. In the European Commission-

funded project NaPANIL (Nanopatterning, Production and Applications based on Nanoimprinting Lithography) 18 partners are working on 3D nano-manufacturing based on NIL (nanoimprinting lithography), materials, stamps, tools and software required for new applications, and industrial suitable modeling and metrology tools.

Nanoimprinting has made it possible for the NaPANIL researchers to significantly increase emitted light's intensity by controlling the light path through glass or diffusing a single ray into homogenous illumination. The results from their research have several application areas. The industrial partners are focusing on making mobile phone displays that are brighter than displays on the market, but use less energy, and head-up displays (HUDs) for vehicles' windscreens that are easy to read in all light conditions. Car manufacturers are developing different head-up displays to make it easier for drivers to concentrate on the road, while at the same time clearly see and process all the information they can be flooded with from different systems. For example, General Motors in collaboration with researchers at several universities is testing a system with infrared cameras that can identify the road's edge, when it is almost invisible in fog, and make it visible with the help of laser which highlights it onto the windscreen. However, the system will not be introduced to the market in the near future. The NaPANIL project's Emissive Head-Up Display (eHUD) from Fiat may be closer and has a integrated light emitting layer that is offering this feature of easy-reading all day, compared to conventional HUDs which project images.

The project partners also hope to introduce eco-friendly windows that can reduce the need for artificial lights during the day, by redirecting sunlight to parts of our buildings unreachable with regular windows. The process of structuring surfaces through nanoimprinting is an innovative approach that has the potential to brighten up our lives in several ways, in our homes, while travelling and at work.

Source: Youris.com

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