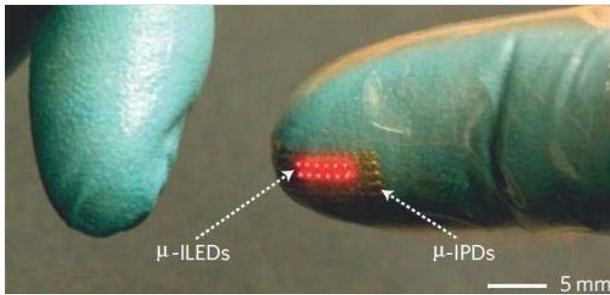


SAP HELPS BUSINESSES DO WHAT THEY DO BEST, EVEN BETTER. ROLL OVER TO WATCH 

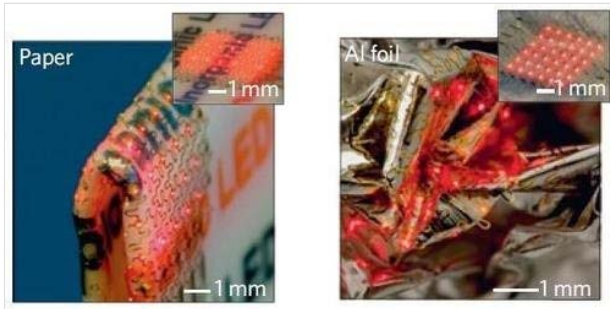
Bored By Non-Glowing Skin? Ultra-Flexible, Waterproof LED Implants Are What You Seek

By Alasdair Wilkins/iO9 Posted 10.19.2010 at 12:15 pm



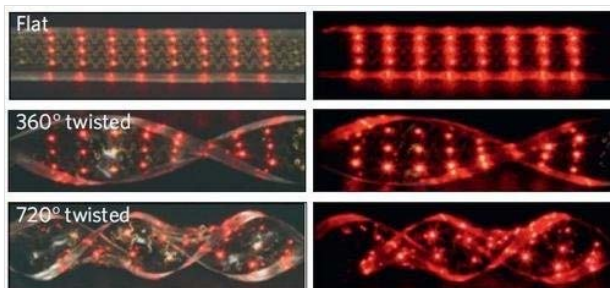
LED Lights Could Be Implanted Under Skin Photo courtesy of iO9

LEDs are, on small scales, the cheapest, most reliable, and most technologically powerful light sources out there. But their true potential is finally being unleashed. A [new generation of LEDs](#) can go anywhere - even into your body.



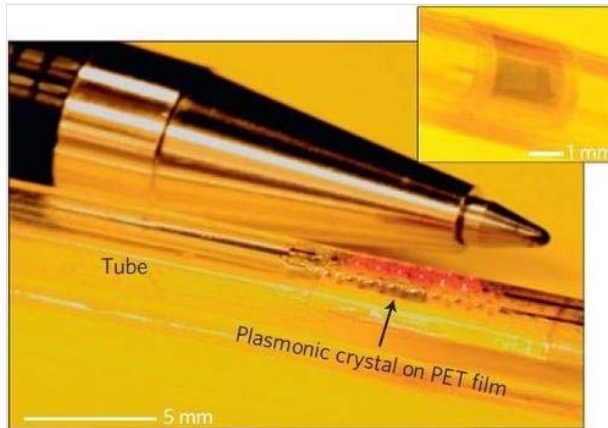
LED Lights Can Be Extraordinarily Small: Photo courtesy of iO9

LEDs, or light-emitting diodes, are often used for text and video displays, and their infrared counterparts are everywhere in remote control technology. You can't take a trip without running into an LED - traffic signals are all LEDs, as are most of the lights on a car dashboard. And anyone who has been to a rock concert has probably run into a few people going crazy with LED-powered glowsticks.



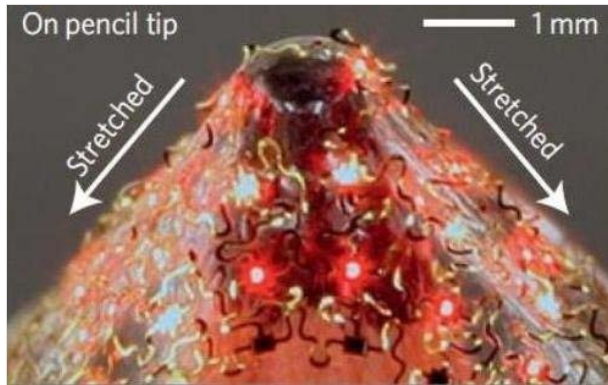
Flexible Electronic Sheets Make LEDs Pliable: Photo courtesy of iO9

Still, as researcher John Rogers of the University of Illinois points out, LEDs are brittle, meaning they can't be bent into different shapes. Well, no more, thanks to his new invention. He and his team have put tiny LEDs, each one smaller than the tip of a pen, on flexible electronic sheets. These sheets can be stretched and twisted up to 720 degrees without any loss in LED function, and they can hold up under soapy water or even underneath the skin, which they demonstrated by implant one sheet under the skin of mice.



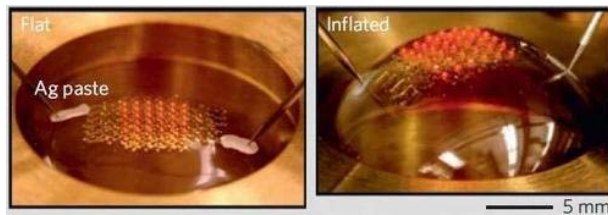
Each LED Used Is Smaller Than The Tip of a Pen: Photo courtesy of iO9

As scientist's tend to do, Rogers looks at this from the perspective of how it might benefit humanity. He sees great potential applications in using implanted LEDs for diagnostic purposes, and putting his LEDs on surgical gloves could allow doctors an even better view at what they're operating on.



New LED Material Could Be Malleable: Photo courtesy of iO9

But let's be real here - the crazy awesome applications of this invention way outstrip the humanity-benefiting ones. Implanted LEDs can be the new tattoo - put red ones down your spine for the sexy Cylon look!) Take your boring old household pets and stick some LEDs in them - instant excitement with glowing kitties and puppies! New glowsticks could be twisted 720 degrees to look like double helixes of DNA and handed out to biologists, giving scientific conferences a refreshingly heavy metal feel. And you just know somebody is figuring out how to put these things on a condom.



Pliable LED Fabric Could Change Shape: Photo courtesy of iO9

What crazy ideas do you have for these ultra-flexible LEDs? Here are some more awesome pictures of Rogers's LEDs in action to get your creative juices going.

[Nature Materials]



iO9 is a website about the future, exploring the science and science fiction that will take us there.

[Previous Article: A Prototype Greenhouse Demonstrates the Future of Farming on the Moon](#)

[Next Article: Attention, Supervillains and Climate Engineers: The U.N. May Soon Forbid You To Block Out the Sun](#)

13 COMMENTS

[mcrong](#)
from Austin, Texas

10/19/10 at 12:52 pm
One small step towards augmented reality contact lenses. Awesome!

[Link to this comment](#)

[boka](#)

10/19/10 at 1:10 pm
I think I would rather have magnets implanted under my skin. So I could sense magnetic fields. Like a sixth sense. I like that.

[Link to this comment](#)

[Speek-r](#)

10/19/10 at 2:03 pm
I would like to have a neat glowing tatoo all over me and then turn it off when I'm at work. Business in the front! Party in the back!

[Link to this comment](#)

[omaracoustic](#)

10/19/10 at 2:12 pm
I would like to have some on my shaft to impress the ladies. ;D

[Link to this comment](#)

[caradoc01](#)

10/19/10 at 3:33 pm
@omaracoustic: do you mean something like "eat at Joe's" or "Welcome aboard"

This article said nothing as to program-ability or power source for these...I am curios how that is/was done.

I like the idea of implanting them into rescue equipment in mines and caves...portable flexible light sources that are virtually no weight

[Link to this comment](#)

[4L3X](#)

10/19/10 at 3:55 pm
Implanted watch face on my wrist

[Link to this comment](#)



[calebscape808](#)

10/19/10 at 4:28 pm
some how i see this could cause some issues in the future....

[Link to this comment](#)

[TheFourth](#)

10/19/10 at 5:06 pm
How bright would these LEDs be? Are they small and can be used in place of a flashlight bright? If so that would be pretty cool, and I'd probably try and get an implant.

[Link to this comment](#)

[shutterpod](#)

10/19/10 at 5:54 pm
Powering subdural LEDs could be done through induction.

[Link to this comment](#)

[RogueSquirrel](#)

10/19/10 at 6:10 pm
So THAT'S how ET made his finger glow....

[Link to this comment](#)



[awjanua](#)
from houston, texas

10/19/10 at 6:34 pm
LED's in the skin could be powered by clucose, and yeah very nice tech here :D

[Link to this comment](#)



[Battlesfield](#)

10/20/10 at 2:17 pm
I call dibs on renting out peoples foreheads as mobile billboards !!!

[Link to this comment](#)

10/21/10 at 12:17 am



PenguinMan

www.LEDthings.com

I have some ideas, but I can't tell you.
I am sure I will come up with more.

[Link to this comment](#)

To comment, please [Login](#).

2010 **DREAM COME TRUE** SWEEPSTAKES
YOU COULD WIN A GRAND PRIZE OF **\$25,000!** [CLICK HERE](#) 

Copyright © 2009 Popular Science

A Bonnier Corporation Company. All rights reserved. Reproduction in whole or in part without permission is prohibited.