



LASER GUIDED INJECTION SYSTEM

Getting a shot isn't a fun event for anyone, but a new laser-based system could end the pain of injections forever. The system uses a laser to guide the incredibly precise jet of medicine that is only a little thicker than a human hair. A bit of water acts as a "driving" fluid to get the stream of medicine to its target. The pressure of the jet is higher than the tensile pressure of the skin, forcing the jet smoothly into the skin. There is no damage to the tissue, and the stream only penetrates a few millimetres beneath the skin's surface, where there are no nerve endings to feel any pain. Besides eliminating pain, this system would eliminate vast amounts of medical waste.

ANTI-SUICIDE NASAL SPRAY

The US Army reports that an average of one soldier per day takes his or her own life. Now a nasal spray has been developed to prevent suicides. The spray will release a neurochemical thyrotropin-releasing hormone (TRH), which causes a calm and euphoric feeling that could stave off suicidal thoughts. Pills and intramuscular injections don't allow the chemical to reach the brain where it is needed, so until now spinal cord injections have been the only way to deliver it to the body. The spray is not a substitute for antidepressants and other depression treatment.



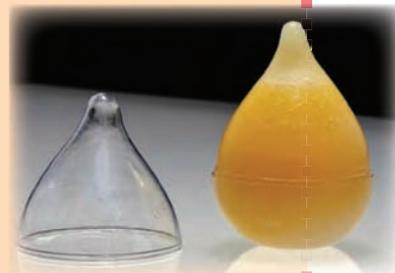
MUSICAL PEN: HAND-HELD SCANNER

Composing music is something that is beyond most of us, but for the talented few who can write music a small hand-held scanner is being developed to read sheet music in real time and play it back. As the scanner is held above each individual note, it reads the staff and notes, as well as the position and size of the notes. Using the OpenCV library, the scanner analyzes and reads the notes, creating an accurate computer-generated playback.



EDIBLE BOTTLES

Food and beverage packaging is one of the largest categories of solid waste in landfills today. Ever since we started packing everything in plastic, our garbage dumps have quickly filled up with the stuff. A product called WikiCells consists of edible and/or biodegradable packaging that can be peeled right off of food items and either eaten or composted. In this concept a very thin natural food membrane is put around liquid or solid food items. The membrane is held on by electrostatic forces and can be easily peeled off. Inside the membrane there could be another, slightly more robust edible shell to protect the edible item within. The concept sounds great from an environmental standpoint.



SOLAR ENERGY COLLECTOR

Capturing and using the power of the sun is one of the most promising ways we have to supply the world with clean power. This spherical solar collector is able to concentrate sunlight up to 10,000 times. It can also create power from moonlight, something that other solar power systems have not been able to promise. It is fully rotational and can be integrated into building walls. Because the spheres are made of glass, they can function as windows as well as solar collectors. It is 35% more efficient than other solar options, making it an outstanding future option for green energy production.

