Engineering Update #6: Spidey's new suit, robotic cheetahs and stretchable power supplies

ECN's (www.ecnmag.com) Engineering Update, brought to you by Mouser Electronics (www.mouser.com), takes a look at:

• Wireless, stretchable lithium-ion batteries
Scientists at Northwestern University have created the batteries using 100 tiny, rigid electrodes embedded within a sheet of stretchy silicone elastomer. The battery is also wirelessly chargeable and each electrode disk is interconnected in a parallel fashion using metal wires. This new type of battery could help to power medical implants or, even better, a supped-up Snuggie!

• Wearable pain patches
Thimble Bioelectronics is developing a portable pain relief patch based on Transcutaneous Electrical Nerve Stimulation. Using low voltage electrical stimulation to alleviate pain, the patch will also include Bluetooth connectivity via a smartphone app for pain tracking and management.

• A Spidey Sense suit
Researchers at the University of Illinois in Chicago have found a way to replicate Spider-Man's superhuman powers of perception with a Spider Sense suit. Modeled after the Marvel comic book hero, the suit can detect objects through the use of sensors that are placed around the body and capable of warning its wearer of impending danger. Blindfolded volunteers apparently had little trouble detecting obstacles while walking, but the web-slinging did take some practice.

• The world's first electric tilt rotor aircraft
Engineers at Agusta Westland in the UK recently developed the world's first electric tilt rotor airplane - the AW609, or Project Zero. The plane's two rotors can be tilted up to 90 degrees, which allow it to hover like a helicopter as well as take off and land vertically. Think Osprey, but smaller, and so far, fewer crashes.

•Robot cheetahs
Researchers at MIT are developing a running robot Cheetah. It's about the size and weight of an actual cheetah, but it's capable of running continuously for up to 1.5 hours at 5 mph, and of course, isn't sidetracked by Cheetos.

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