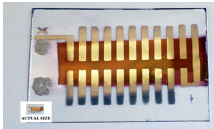


8 November 2008

By: Dan Talpalariu, Science Editor



Tiny solar cell could reshape technology and logistics of the military wired

[Tiny Solar Cells for Future Soldiers](#)

Lightweight power sources would reshape technology and logistics of the military

A recently-developed tiny solar array is sparking a very vivid interest in [Army](#) officials. The array is comprised of 20 small solar cells, each a little over a millimeter long. This early version of the solar device built from organic polymers is able to generate only 7 volts of electric power for the time being, but its developers promise that this rate will improve soon, leading to a change in the field of electronics. As the lead author, Xioamei Jiang, says, as cited by [Wired](#), "The world's next generation of microelectronics may be dominated by 'plastic electronics' and organic solar cells are expected to play an important role in these future technologies." Of course, the most interested in the mass production of such small scale, lightweight power storage devices is the Army, since their only option for now is to rely on heavy and expensive batteries on the field. The new technology of alternative power sounds very appealing, since it is cheaper, renewable and lighter, thus non-hindering for the soldiers that normally have to carry out physically-challenging missions anyway. Judging by the estimates of the founder of an alternative energy company, today's soldiers have to carry 30 pounds (13.5 kilograms) of batteries in their backpack each day, in order for them to be able to perform the needed operations, which translates in a yearly cost of \$57,000 per soldier. The Army is positively ecstatic about the prospect of the next generation of low-energy sensors in the making, which could allow for instant monitoring of a soldier's body functions, his immediate surroundings or, with the help of other technologies, perform even more complicated tasks, like a quick scan of the battlefield. As Barry Perlman, associate director for technology at the Army's Communications Electronics Research and Development Center at Fort Monmouth in New Jersey, also shared, "You can start to imagine how power becomes a very, very important parameter to the soldier. Every sensor needs power [...] so we have quite a few people concerned with how to generate [it]."