

## FIU, military team up to build solar-powered clinic

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MIAMI - Imagine a team of doctors, soldiers or humanitarians airlifted into a remote jungle many miles from the nearest road or power grid. Within 24 rises from the jungle floor.

Researchers from Florida International University are working with U.S. military planners to develop a makeshift mobile hospital that runs completely gallons of water per day and can treat dozens of people who consider electricity a luxury.

The project began a test run recently in the Honduran jungle.

If successful, the self-sustaining tentlike structure could become a model for the U.S. military and American emergency response teams to set up field

FIU, already nationally recognized for its creative use of solar power technology, is receiving a \$2.4 million grant to pursue the project with the Army.

The idea of 'mobile medical readiness' was born at FIU's Applied Research Center as part of the school's role in the Western Hemisphere Information

That program, known as WHIX, is a joint effort between the U.S. military and the militaries of other Latin American countries 'to develop a sustainable environment and renewable energy,' according to an FIU brochure.

FIU and the military want to send mobile medical centers to remote villages in Central America to test their ruggedness and effectiveness.

If the tests go smoothly, the military may adopt the system for use worldwide in remote locations where liquid fuel supplies are difficult to transport.

The transportable hospitals can also be powered using wind and micro-hydro turbines from running water, or even biofuels harvested from surroundi

'The research really is about looking at those things that are available, and doing a military assesment in the field to see how they stand up under pre programs for the Applied Research Center. 'What the local communities get out of this is access to advanced medical treatment.'

From a distance, the hospital resembles the tents used by the Korean War-era doctors in the 1970s movie and television show MASH, which stands

A simple rectangular tent set up outdoors, it covers an area about the size of a volleyball court but can grow.

But unlike the hospitals in the popular TV series, which ran on liquid fossil fuels, the plastic roof in FIU's circa-2008 MASH unit is covered with thin-film

They are the thickness of two credit cards and can be rolled up and curved over almost any surface to produce electricity from sunlight, Miller said.

The energy from the cells feeds a battery system that keeps the power running day and night.

'This is the most cost competitive way to go for this application,' said Bob Reedy, director of the Solar Energy Division for the Florida Solar Energy Ce

'Thin films can be flexible, so they can be put on a canopy. They are also very light, and they are very rugged, unlike glass, or rigid modules. They ca bullet hole. They can take a licking and keep on ticking.'

Each thin-film strip produces 1.5 kilowatts of electricity, or about the amount required to power a radio, a computer and some lights.

The canopy, set up at FIU's Engineering campus at Flagler Street and Northwest 107th Avenue, recently had three strips, producing 4.5 kilowatts.

To compare, a four-kilowatt system is enough to power the average American home; South Florida homes, because of energy-intensive air condition a spokesman for the National Renewable Energy Laboratory.

The military typically burns diesel fuel to power generators for electricity, Miller said, although some renewable energy technology is being used in Ira

The solar panels produce no sound or other emissions and can be rolled up and shipped anywhere.

The price of the thin-film panels is still high because the technology is so new, but

their potential is vast.

The cost of manufacturing them can be lower than regular panels, because they use only a fraction of the natural resources, such as silicon. But so f: panels.

Not everyone is a fan of thin film technology.

'Some people call them unbreakable; we call them already broken,' said John Kimble, owner of Sun Electronics in Miami, which does not carry thin fil