Mirror technology propels 2007 U-M Solar Car team

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Mirrors hold the hopes of the 2007 University of Michigan Solar Car Team. The storied student organization with more than 100 members has a potentially game-changing car design for the upcoming Panasonic World Solar Challenge, an 1,800-mile race across Australia that begins Oct. 21.

Continuum, the name they've given to this car, is outfitted with U-shaped mirrors that intensify the sunlight, squeezing more energy out of every ray.

"We're using the best solar technology on the face of the planet," said Brian Ignaut, race manager and a senior engineering major.

The team's faculty adviser concurs.

"This is the first time this technology has been applied to a vehicle and it's truly a breakthrough. It has the potential to revolutionize solar car technology," said Robert Culver, faculty advisor and industry co-director of the U-M Tauber Institute for Global Operations.

The "solar concentrator system" was designed and built by students. It's the team's answer to new rules by race officials seeking to slow the event by limiting the size of the solar array. The cars usually average between 50 and 60 mph during the race, Ignaut said, but they're capable of closing in on 90 mph.

Most of Continuum is covered with regular solar cells that look like rows of photograph negatives. But the section behind the driver's seat is lined with ½-inch-wide solar panel strips that hover over scalloping mirrors.

It's a calculated risk. But one the students deemed necessary.

The team, which has won the North American Solar Challenge four times, has finished third in the World Solar Challenge three times.

"We came out for 2007 to improve that performance," Ignaut said. "We knew that we had to really push the envelope to be able to compete at the highest level."

Twenty five students are in Australia now for the race that's expected to last five to seven days. Many of them have already been there for weeks, driving the route, looking for potential problem spots and practicing. During the race, drivers take turns in six-hour shifts. For the first time this year, drivers will sit, instead of recline in the vehicle.

The solar car team is one of the largest student organizations on campus, including students from the College of Engineering, the College of Literature, Science, and the Arts, the Ross School of Business, the School of Art & Design, and the School of Education.

No matter when they cross the finish line in Australia, the students say being part of the team teaches them things a class cannot.

"Solar Car is something that encompasses your whole life. It's a student project, but it's a whole lot more. The hours, the time, the dedication required are so much greater than anything else I've ever experienced. It's like working in a mini-corporation," said Steve Hechtman, a junior electrical engineering major and solar car driver.

QuickTime Movie: ummedia04.rs.itd.umich.edu/~nis/continuum.mov

Source: University of Michigan