WSU engineering student to debut solar car on Earth Day

By Rex Parry / The Sunflower

When engineering student Richard S. Akinin purchased a 1996 Secura 512 for $800 off Craigslist, he wanted to prove cars that run on electricity do not have to be prohibitive expensive or complex.

One year after starting the project, St. Akinin is set to showcase his work at an Earth Day event on 9 a.m. to 4 p.m. Wednesday at the University Methodist Church on 21st and Yale, across the street from the Wichita State campus.

St. Akinin and his team at the Computer Architecture and Parallel Programming Laboratory developed a system, which involves solar panels on the hood, roof and trunk of the car that stores electrical energy from the sun. The energy is then used to power the car's electrical needs to save money on gasoline.

"When we do have a sunny day, you're sitting out in the parking lot, then your tank is being refilled while you're sitting in the car," St. Akinin said. "So you're collecting energy all day long." While the car cannot run entirely on electrical energy, data from CALF Lab suggests the solar panels could generate approximately 21 percent of the energy used by an average car.

According to their numbers (which use a hypothetical gas price of $5.46 per gallon), that would save around $62 per year.

The total cost of the equipment required to generate this energy is just under $1,000, according to CALF Lab. St. Akinin said the main goal is to reduce the price of electricity and ease people into the idea of purchasing a fully electric car.

"We do that, so we get people actively into buying electric cars, because that's what we really want," St. Akinin said. "We want more electric cars on the road, not those weird gas hybrids with solar panels on them."

Electrical engineering professor Abu Asaduzzaman is the advisor on this project. After having St. Akinin as a student, Asaduzzaman said he has engineering skills made him the right man for the job.

"I had no doubt about it," Asaduzzaman said.

Asaduzzaman also said that in his native Bangladesh, solar power is a widely used alternative to traditional sources of electricity because it is affordable and dependable. For him, cars that are powered this way are ideal.

"For me, an electric car is the best solution I can think of," Asaduzzaman said. "As soon as it becomes available, I think there will be no problem finding customers."

Retired WSU professor William Wozie taught about renewable energy for 30 years, and his passion for it continues today. He sees St. Akinin's project as an example of how the rapid process of making an electric car.

"It's really momentous here that just wasn't here even five years ago," Wozie said.

Wozie said the ease of installation and lack of maintenance required will make solar power an appealing prospect in years to come.

"They're just taking that energy right out of the sunlight and turning it into electricity on the spot, no moving parts," Wozie said. "It's exciting, I think we're going to see some really, really dramatic changes."
Engineering student powers car with solar panels

Solar car

While the car can run on fuel, the amount of electrical energy obtained from the solar panels means the car can run approximately 3/4 to 1 mile per solar panel hour.

According to the website of the university (which is a hypothetical gas price of $2.45 per gallon), that would save approximately $0.75 per gallon.

While this student is only able to get a small fraction of their energy from solar power, the potential for this type of alternative energy is enormous. In fact, according to the EPA, solar panels can cost less than $20 per dollar.

"As we drive around, we can see how much electricity we're getting from the panels," the student said. "It's exciting to see how much we're getting, and it's amazing to see how much we're getting.

Electrical engineer professor who is leading the design of the car: "The project is a great opportunity for students to learn about renewable energy and the potential it has to change the way we think about electricity."

The design of the car is still in the early stages. However, the student is confident that it will be able to travel 100 miles on a single charge.

"We're learning about the solar panels and how they work," the student said. "We're also learning about the electrical systems and how they work together."