

Science: Team UiTM Eco Planet

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The UiTM Eco Planet team's car, Lipas-Motive

TEAM UiTM Eco Planet is taking what they learnt from a previous project building an aircraft, and putting the knowledge to use in the Shell Eco-marathon challenge, in particular their belief in fuel cell technology.

Team leader Mohd Izmir Yamin, 28, says it took them three months to create their car, dubbed Lipas-Motive. "This is something we have always wanted to do.

We have been told that fuel cells are expensive even though they are the most efficient in the market, about one or two times more efficient than petrol or diesel. "The only thing holding fuel cells back is the cost.

So we are taking this challenge to optimise and bring down the cost," says the Universiti Teknologi Mara aerospace and mechanical engineering student. Team supervisor associate professor Dr Thomas A.

Ward adds that the team has built a fuel cell-powered unmanned aircraft before, a large unmanned aerial vehicle (UAV) with a 5m wingspan and GPS, as well as onboard camera. "It was a first in Southeast Asia.

A lot of the lessons and the students from that programme have been brought into this car project,” says Ward. Cost is the team’s biggest challenge, says Izmir and yes, the fuel cell is the most expensive part of the car.

It cost RM36,000. “Fuel cell runs on many parts, the most expensive being platinum as a catalyst to break down hydrogen atoms to produce electricity.

RM140 per gram and in the car we use up to 600g,” he explains. As for the car itself, it experienced an initial aerodynamic drag. “We built it from pieces cut using a CNC (computerised numerical control) machine.

We laid out the fibreglass by hand.

It was a very crude method but it worked for the budget we had.

Others used ovens to bake their fibreglass. “This is our first time fabricating a car body.

It’s difficult to achieve a water droplet shape.

At least we managed a smaller back part for this model but in future, we will make sure we come up with better aerodynamics,” says Izmir. Still, the car manages a speed of between 45 to 50km per hour, which meets the minimum requirement of 20km per hour.

“The acceleration was also good, as was the braking.

As for mileage, we expect to get 600km per tank of hydrogen,” says Izmir.

Read more: [Science: Team UiTM Eco Planet](http://www.nst.com.my/nst/articles/Science_TeamUiTMEcoPlanet/Article/index_html#ixzz1BGV47yaC)

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