

## **CFD analysis for merdeka 2 solar vehicle**

### **Abstract**

Vehicle's low drag force is critical to achieve higher speed and for efficient energy usage. Most solar vehicles that participated in the World Solar Challenge event adopted the 'cockroach' shape which has been considered as the best shape to achieve optimum speed and aerodynamics characteristics. However, the team from University of Malaya decided to design their entry vehicle based on the profile of a box fish, said to possess an even lower drag coefficient value. This paper describes the aerodynamics characteristics numerical study of the solar vehicle using a computational fluid dynamics (CFD) code called FLUENT. The numerical computation is based on the frontal area of the vehicle and the obtained results have shown reasonable values of drag and lift coefficients when compared to ordinary road vehicles.

**Keywords;** Box fish shape; CFD; Solar vehicle; World solar challenge