

# NUS eco-car ranks 5<sup>th</sup> at Shell Eco-marathon

**KRUCE** – short for Kent Ridge Urban Concept Ecocar – represented NUS at the world-renowned Shell Eco-marathon competition in EuroSpeedway Lausitz, Germany in May this year. KRUCE is the first eco-friendly urban concept car with zero carbon emission in Singapore that was designed and built by a team of Engineering students, in collaboration with the School of Design and Environment.

Powered by hydrogen fuel cell and with an excellent noise damping feature, KRUCE was first unveiled by NUS President Prof Tan Chorh Chuan and Dean of the Faculty of Engineering Prof Chan Eng Soon at NUS University Hall on 20 April 2009.

At the Shell Eco-marathon competition on 9 May 2009, NUS competed against 66 teams from over 30 different countries in the Urban Concept category. The team was ranked 5<sup>th</sup> overall in the category, moving up more than 10 places from their overall 18<sup>th</sup> ranking achieved in France in 2008. They were also ranked 4<sup>th</sup> internationally in the Fuel Cell Vehicle category. The NUS team managed to achieve the high rankings despite having only the time to compete in the last official run. They missed the two earlier official runs due to the University's overseas travel suspension owing to the global Influenza A (H1N1) situation.

Team leader Zhang Weisheng said: "We raced against time to assemble the car back to optimum working condition for the technical inspection, working late into the night until access to the paddock area is no longer allowed. Some of the team members had to struggle with their jetlag as they had no rest following arrival at the airport. We passed the technical inspection in the morning of 9 May, the last day of the race, and managed to take part in the last official run in the afternoon."

The aerodynamic structure and power source of this year's entry was built from scratch by 10 students from the Departments of Mechanical Engineering, and Electrical and Computer Engineering. The body of the car was designed and fabricated by the School of Design and Environment's Design Incubation Centre team, working in close collaboration with the Engineering students.

With a customised hydrogen fuel cell power plant that drives an electric wheel hub motor, the team was able to ensure that the single-seater KRUCE achieves twice the energy efficiency of conventional internal combustion engines. The



**GOING GREEN WITH KRUCE:** (From left) NUS Eco-car project supervisor Assoc Prof Lu Wen Fen; Dean of the Faculty of Engineering Prof Chan Eng Soon and NUS President Prof Tan Chorh Chuan with the Eco-car team.

cell-like design of the car, which gives it a lower aerodynamic drag, allows for easy access to the mechanical components for trouble-shooting.

The team behind KRUCE began designing the concept car last August, working closely with Gashub Technologies.

The urban concept eco-car is a model project for the Faculty of Engineering's new NUS Design-Centric Engineering Curriculum (DCC), an alternative learning pathway offered for the first time by a university in Asia. This will be available to freshmen at the Faculty of Engineering in this coming academic year. **KE**