

Missouri S&T Hydrogen Fuel Cell EcoCAR

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Today, the automotive industry is at a crossroads during the worst economic downturn in 75 years. Particularly frustrating is that this crisis struck just at a time when these companies were successfully restructuring themselves and creating a new generation of cleaner, more efficient vehicles. This progress, and the very viability of the U.S.-based auto industry, is threatened. In response to that threat, the U.S. Department of Energy (DOE) and General Motors (GM), as well as by Natural Resources Canada and other industry leaders, established a new collegiate advanced vehicle technology competition (AVTC), the “EcoCAR: The NeXt Challenge.” EcoCAR challenges engineering students from universities across North America to re-engineer a light-duty vehicle, minimizing energy consumption, emissions, and greenhouse gases while maintaining the vehicle’s utility, safety, and performance.

The Missouri S&T was selected in May 2008 as one of only 17 in North America. And in November 2008 Missouri S&T was selected as the only team in U.S.A. to receive hydrogen fuel cells, the cutting-edge powertrain technology for the EcoCAR Challenge. The new Missouri S&T hydrogen testbed used by the EcoCAR project includes the EcoCAR Garage, Hydrogen Fueling Station and the Renewable Energy Transit Depot. The station uses an on-site steam methane reformer and electrolyzer, steel and carbon composite storage tanks, a 350 bar hydrogen dispenser, and a stationary Polymer Electrolyte Membrane (PEM) fuel cell. These new facilities collectively have been named the E3 Commons in response to Chancellor Carney “E3=C” challenge, i.e. Energy, Environment and Education equals Civilization.