



Challenge X 2006 Team Technologies and Configurations

TEAM	HEV ARCHITECTURE	ENGINE	FUEL	TRANSMISSION	ENERGY STORAGE	MOTOR
Michigan Technological University	Through-the-road Parallel Hybrid	2.0-L Ford Spark Ignited	Reformulated Gasoline	Ford Getrag MMT6 6 Speed Manual	COBASYS Nickel Metal Hydride - 336V	50 kW Solectria AC Induction
Mississippi State University	Through-the-road Parallel Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	GM F40 6 Speed Manual	Johnson Controls Nickel Metal Hydride - 330V	67 kW Ballard AC Induction
Ohio State University	Through-the-road Parallel Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	AISIN 6 Speed Automatic	Panasonic Nickel Metal Hydride - 345V	67 kW Ballard AC Induction
Pennsylvania State University	Continuously Variable Power Split Hybrid	1.3-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	GM Continuously Variable Power Split	Lithium Tech Lithium Ion - 316V	21 kW Solectria AC Induction
Rose-Hulman Institute of Technology	Power Split Hybrid	2.5-L VM Motori Direct Injection Turbodiesel	Bio Diesel (B20)	Power Split Gearbox	COBASYS Nickel Metal Hydride - 336V	(2) Azure 78 kW AC Induction
San Diego State University	Through-the-road Parallel Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	GM F40 6 Speed Manual	Hawker Lead Acid - 336V	150 kW AC Propulsion AC Induction
Texas Tech University	Through-the-road Parallel Hybrid	2.2-L GM 100 kW Spark Ignited/10 kW Fuel Cell	E85/ Hydrogen	GM 4 Speed Automatic	COBASYS Nickel Metal Hydride - 336V	45 kW Ballard Integrated Power Transaxle
University of Akron	Through-the-road Parallel Hybrid	1.9-L VW Direct Injection Turbodiesel	Bio Diesel (B20)	VW 6 Speed Direct Shift Gearbox	Johnson Controls Nickel Metal Hydride - 165V/ Maxwell Ultracaps	21 kW Siemens AC Induction
University of California, Davis	Through-the-road Parallel Plug In Hybrid	1.5-L Toyota Atkinson Cycle Spark Ignited/ 10 kW Fuel Cell	E85/Hydrogen	Nissan Continuously Variable	Lithium Tech Lithium Ion Nickel Metal Hydride - 350V	30 kW Unique Mobility AC Permanent Magnet
University of Michigan	Series Hydraulic Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	Hydraulic Pump	15 gal. Hydraulic Accumulators	Hydraulic Motor
University of Tennessee	Through-the-road Parallel Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	GM F40 6 Speed Manual	COBASYS Nickel Metal Hydride - 336V	67 kW Ballard AC Induction
University of Texas at Austin	Belt-driven Alternator/Starter	1.9-L GM Direct Injection Turbodiesel	Reformulated Gasoline/Bio Diesel (B20)	GM F40 6 Speed Manual	Johnson Controls Lead Acid - 42V	5 kW Hitachi AC Induction BAS
University of Tulsa	Through-the-road Parallel Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel/ Hydrogen	GM F40 6 Speed Manual	COBASYS Nickel Metal Hydride - 288V	67 kW Ballard AC Induction
University of Waterloo	Series Fuel Cell Hybrid	65 kW Hydrogenics PEM Fuel Cell	Hydrogen	Fixed Gear Reduction	COBASYS Nickel Metal Hydride - 336V	67 kW (2) Ballard AC Induction
University of Wisconsin - Madison	Through-the-road Parallel Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	GM F40 6 Speed Manual	Johnson Controls Nickel Metal Hydride - 330V	45 kW Ballard Integrated Power Transaxle
Virginia Tech	Split Parallel	2.0-L GM Saab Turbo Spark Ignited	E85/Hydrogen	GM 5 Speed Manual	COBASYS Nickel Metal Hydride - 336V	67 kW Ballard AC Induction
West Virginia University	Through-the-road Parallel Hybrid	1.9-L GM Direct Injection Turbodiesel	Bio Diesel (B20)	AISIN 6 Speed Automatic	Maxwell Ultracap 750 kJ	(2) 13 kW AC Induction Wheel Hub Motors

