Minnesota State University, Mankato

Automotive Engineering Technology

SENIOR DESIGN PROJECT

Flex Fuel Plug-In Hybrid

Modify a stock Toyota Prius Hybrid with the goals of demonstrating increased fuel economy coupled with flexible fuel capability without increasing tailpipe emissions.

OBJECTIVES

- Average fuel economy of 100 MPG
- Operation on E-85 fuel
- No negative impacts to drivability
- No increases in stock vehicle emissions level (as measured based on drive cycle test measurements)

DESIGN OUTCOMES

- Electric vehicle only switch installed
- Battery capacity raised from 6.4 Ah to 32 Ah
- Battery pack placed where it will not affect stability of vehicle
- Fullflex module used to run E-85

TEAM FLEX FUEL PLUG-IN HYBRID
L to R, Row 1, Row 2 etc. Jon Liu, Tony Reichel, Nate Starkson, Chris Bahn, Jacob Kriesel, Luke Markham, Eric Esselman, Jacob Wilson
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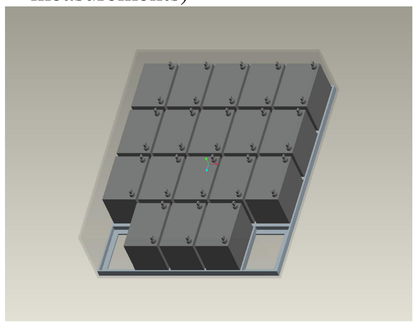
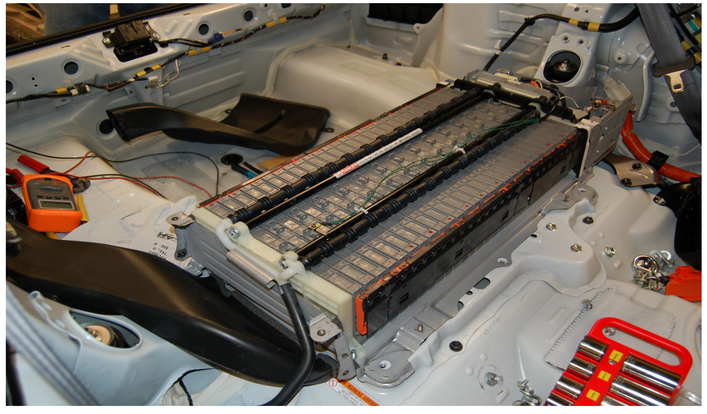


Drawing of New Battery Pack



Stock Toyota Lithium Ion Battery Pack

2006 Toyota Prius running on Emissions Dynamometer

FullFlex Gold E85/Gasoline Flexible Fuel Kit

MnCAR
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At Minnesota State University, Mankato

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