

Senior Design Project Description for FALL 2016

Project Title: Fuel Cell Powered Vehicle (HY_FUELCEL)

Supporter: HyMobility

Supporter Technical Representative: ASSIGNED

Faculty Mentor: _____ ASSIGNED TBD (check one)

Single Team Dual Team _____ (check one)

Personnel (EN/ET): 2 E, _____ Cp, _____ Cv, 3 M, _____ SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

Description of Project:

This project will consist of two parts. Only Part 1 will be done in this project.

Part 1

HyMobility has developed a bicycle powered by a hydrogen fuel cell. The detailed design and fabrication of the fuel cell were performed by Infintium for HyMobility. However HyMobility was not provided with any drawings or manuals for the fuel cell. There is also no speed controller for the system.

This project will review the existing design of the fuel cell and modify the design to improve its performance.

Part 2

After the successful completion of the project a second project will develop a street legal, four wheel urban vehicle using this technology.

Initial Project Requirements (e.g. weight, size, etc.):

The project requirements include development of drawings of the existing fuel cell. The fuel cell is to be modified so that it will continuously charge the Lithium ion battery and operate in parallel with the battery to increase power production (similar to the method of operation of the Prius). Speed control is required when operating on just the battery or with the battery and fuel cell in tandem. The existing fuel cell will be provided prior to the start of the project.

The prototype is to be tested on a bike provided by HyMobility.

Expected Deliverables/Results:

A functional prototype of the modified fuel cell is required. (The existing fuel cell is being provided for the project.) Mechanical and electrical drawings of the fuel cell are to be produced and included in an operating manual that will be given to HyMobility.

List here any specific skills or knowledge needed or suggested (If none please state none):

None