

IPRO 313 - Refuelable Electric Vehicle

Objective

The goal of IPRO 313 was to design a system which utilizes a Zinc-Air battery for vehicle applications.

Basic Organization and Tasks

The group was divided into three main sub-teams: the battery team, the car team, and the promotional and funding team. The battery team was mainly involved in understanding the zinc-air design. The car team was tasked with the vehicle selection, acquisition, and ultimately its conversion. Finally, the promotional and funding team was responsible for creating awareness and securing grants to fund the project.

Accomplishments

Since this IPRO is in its infant stage, our work throughout this semester was centered on building a solid groundwork for successful continuation of the project. This includes the acquisition of a suitable vehicle for our project, the design of the refueling system for future applications, the procurement of battery parts for experimental prototyping, and created awareness concerning the project.

Critical barriers and obstacles

The major barriers encountered were:-

Battery Team: Limited technical information about the zinc-air battery design as well as time constraints with respect to obtaining the necessary materials for testing.

Car Team: Choices of vehicles were limited by available space for conversion.

Promotional and Funding Team: Limited and slow responses from potential funding contacts.

Conclusion

IPRO 313 has successfully built a base upon which the project can be launched. Publicity is key to this technology gaining momentum and with sufficient support, a working prototype can be made.

Next steps

Future students of this IRPO should perform extensive testing on the lab-scale battery, retrofit the optimized design into the car for road testing, further promote the project with media releases, and devise a commercialization strategy upon successful testing.

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