

Group Project: Garmin - Energy Harvesting in Fitness Electronics

Website: http://home.engineering.iastate.edu/~redejmal/senior_design/index.html

Project Number: May14-17

Client: Adam Rasmussen

Advisor: Dr. Degang Chen

Group Members:

Tyler Chenhall – Project Leader
Rebekah Dejmal – Communications
Catherine Homan
Allison Sapienza
Omer Vejsovic
Jeramie Vens

Accomplishments in the Past Week

- Met with our advisor (Dr. Chen) for the first time
- Continued researching possible energy harvesting strategies
 - Focusing on Piezoelectric, Peltier effect, and some solar
 - Considering power output, size, solution constraints, and which products might benefit
 - We have decided to rule out RF energy harvesting due in large part to the limited energy available
- Made substantial progress writing the Project Plan document
- Developed questions to consider when defining our project requirements.

Plan for the Upcoming Week

- Continue researching energy harvesting & look for specific parts to use for initial testing
- Perform accelerometer tests using a Wiimote in order to characterize typical acceleration magnitudes & frequencies experienced by devices on the human body. (for piezoelectric energy harvesting)
- Meet with Dr. Chen (& Adam Rasmussen via conference call) on Monday (09/23)
- Refine the project description, scope, and requirements

Pending Issues

- We need to establish a clear list of requirements for the final solution in this project.

Individual Contributions

- Tyler
 - Took meeting notes & created the weekly report
 - Researched piezoelectric energy harvesting
 - Looked at potential power outputs from solar solutions
- Rebekah
 - Researched piezoelectric energy harvesting
 - Managed communications with Adam and others
- Catherine
 - Continuing energy harvesting research
- Allison
 - Researched Peltier effect energy harvesting
 - Began writing the project plan
 - Acquired code for Wiimote-based testing
- Omer
 - Researched piezoelectric energy harvesting
- Jeramie
 - Researched Peltier effect energy harvesting
 - Began writing the project plan

Individual Hourly Contributions

- Tyler – 6.2 hours
- Rebekah – 4 hours
- Catherine – 3 hours
- Allison – 7 hours
- Omer – 3 hours
- Jeramie – 9 hours