



IMPRINT

ENERGY

Innovation Collider Project

Guidance provided by Imprint Energy

“Translating the unique battery requirements of new wearable and IoT applications into practical metrics and test methods for battery designers”

Emerging wearable and Internet of Things products are in need of new and enabling energy storage solutions. In particular, the power, integration, manufacturing, and form factor requirements for these novel applications are distinctly different from traditional consumer electronics. Wearable and IoT product designers are beginning to work closely in partnership with battery suppliers, and at a much earlier stage in the design process to develop new high performance and integratable battery solutions. As a result of this product design paradigm shift, as well as recent battery technology innovations, product designers can for the first time consider batteries a designable component, and battery suppliers can truly think of themselves as application battery designers. In these emerging applications, battery metrics have not yet been well established, and as a result, it is currently difficult to directly compare different energy storage technologies, creating confusion for wearable and IoT product designers.

Students working on this project will characterize the power, form factor, and integration requirements of emerging wearable and Internet of Things applications, and will highlight the unique challenges for batteries powering these devices. From these requirements, clear metrics and methods of testing batteries will be established with the ultimate goal of clarifying how to most efficiently compare different batteries that are positioned to address these new applications, and to help guide battery designers to better communicate relevant and useful technology information and data. This project aims to help wearable and IoT product designers speak the same language as novel battery designers, and vice versa.

This project will be an opportunity for Berkeley engineers to understand deep technology and design issues while maintaining an applied and practical focus on the exciting and growing wearables and IoT space.

The problem we are addressing in this project is not exclusive to emerging wearable and IoT applications. The nuances of designing batteries are incredibly complex, and also prevalent in a number of other applications like grid-scale energy storage ([see this article, as an example](#)). Making it easier to understand and communicate about batteries requires smart, innovative, and articulate minds – this is why Imprint Energy is looking to partner and work with UC Berkeley students.

Article link: http://www.greentechmedia.com/articles/read/comparing-energy-storage-its-not-that-simple?utm_source=twitter&utm_medium=social&utm_campaign=gtmsocial

Imprint Energy will be providing guidance for the project along with a cash award. Summer internship opportunities beyond this project may be available.

Imprint Energy, Inc., is a battery technology company pioneering ultrathin, dynamically flexible, safe, printed rechargeable batteries based on its proprietary ZincPoly™ chemistry. The company’s batteries

offer significant performance, safety, and processing advantages that will enhance the design of today's electronic devices and enable the development of new devices, particularly in the wearable electronics, medical device and Internet of things markets. The company was founded in 2010 by Imprint Energy's CEO, Dr. Christine Ho, building on her research conducted at UC Berkeley's Materials Science and Engineering department. The company is based in Alameda, California. For additional information, please visit www.imprintenergy.com and [@imprintenergy](https://twitter.com/imprintenergy) on Twitter.