

## Bachelorarbeit

### Development of a Test Setup for an Energy Harvesting Circuit

Energy harvesting enables the use of ambient energy sources such as temperature gradients, light, or vibration, by means of energy transducers. In the field of micro energy harvesting, small scaled transducers/harvesters with limited power generation capabilities are used. Thus, energy conditioning circuits are required in order to maximize the energy extraction and to store the extracted energy.

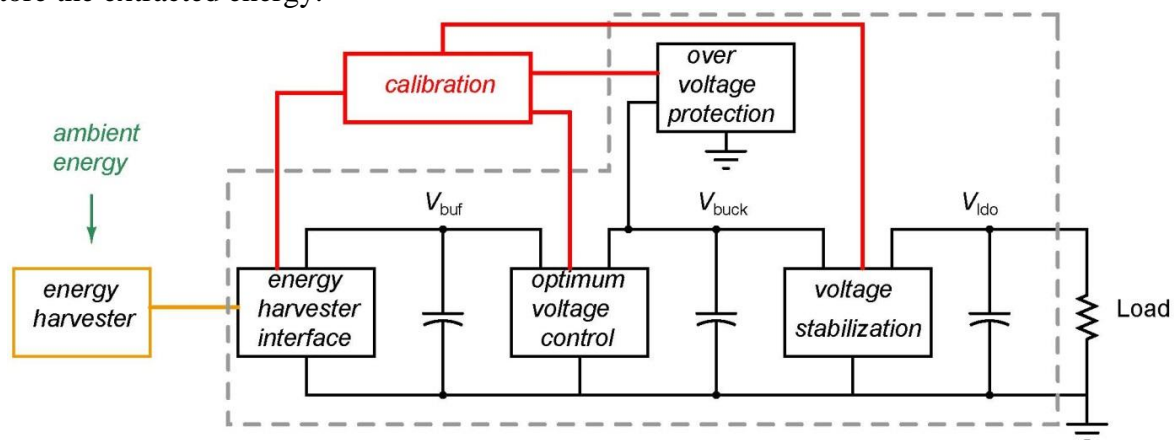


Figure 1: Overview of an energy harvester interface with power management.

This bachelor thesis focuses on the design and the implementation of a printed circuit board (PCB) that will be used for the evaluation of the performance of an energy harvesting interface. The PCB is to be designed using commercially available off-the-shelf electronic components and must provide configuration signals for the device under test. Once the implementation is completed, the PCB is to be put into operation and measurements on a fully autonomous energy harvesting interface are to be performed. The energy harvesting interface is exclusively powered by a kinetic energy harvester and is able to perform self start-up. Finally, the work has to be documented by preparing the bachelor thesis in either German or English.

#### What we expect:

Interests in the design of electronic circuits, willingness to familiarize with the topic and the needed design tools, well documented work, and teamwork.

#### What we offer:

Intensive supervision of the thesis, nice work environment in a teamwork, latest simulation software tools, electronic design automation tools, excellent lab equipment, and free space for own ideas.

**Starting Date:** As soon as possible

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