

DESIGN A NEW TEST BED FOR COOLING SOLUTIONS OF HIGH POWER ELECTRONICS USED IN SUSTAINABLE ENERGY APPLICATIONS

Status:	Available
Group Members:	TBD
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Project Description:

Green technology is a rapidly developing market segment that introduces new design challenges to manufacturers of high power electronics. The resources used in harnessing renewable energy sources are traditionally very intermittent. Wind turbines, solar power and other sustainable energy applications result in large fluctuations in the power supplied to the high power electronics used to convert the raw sustainable energy into usable electrical energy. These fluctuations result in a transient behaviour that the power electronics industry has never had to design for in the past.

The project goal is to design a test bed for evaluating the thermal performance of power electronic systems under fluctuating loads. The test bed will need a programmable power source, sensor selection/installation, and a data acquisition system that are fully integrated to provide the required data. After the project completion the test bed will be used by researchers in the Lab for Alternative Energy Conversion (LAEC) to evaluate the current power electronics cooling systems and develop new and more efficient power electronics cooling designs. This testbed will be used in several ongoing projects with industrial partners such as Analytic Systems and Alpha Technologies.

Estimated Project Timelines

Project begins -January 2011

Development of design concepts-January-February

Concept evaluation and component selection and procurement – April-August

System assembly and testing – June-Project completion