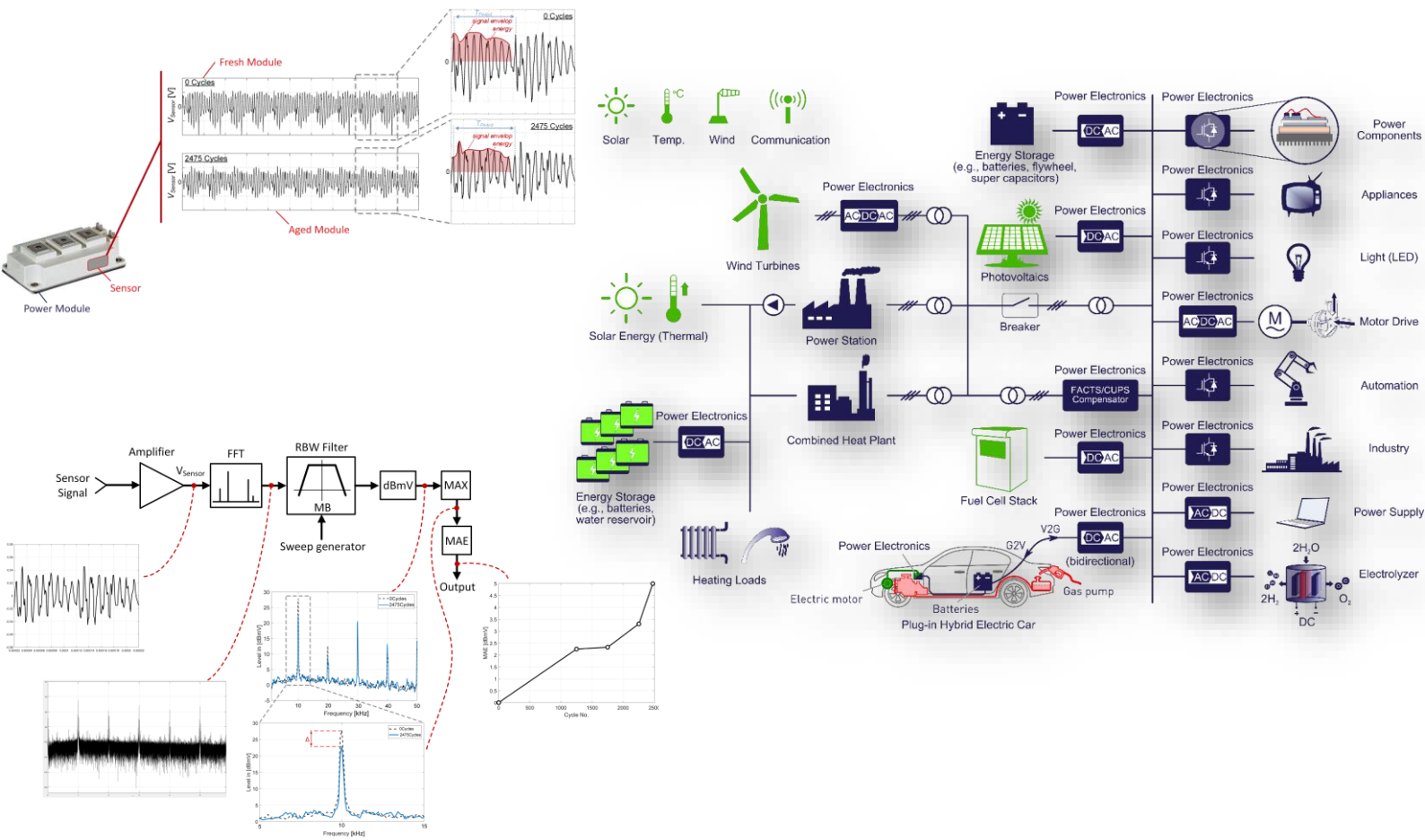


Acoustic based condition monitoring of power semiconductors



Value Proposition
 Power semiconductors are one of the most fragile components in power electronic converters and counts for 21% of failures, therefore it is of significant importance that we get more and more awareness of state of health of the power semiconductors, so we can prevent from possible failures. A novel frequency-domain based method to detect aging through acoustic emission differences during real operation of a power is proposed .

Business Opportunity
 Our solution is reliable, cost-effective, contact-less, it avoids from costly downtime and it is plug and play which can be setup very fast. The presented method is very simple and particularly attractive because of non-invasiveness and potential low-cost features, which can enable straight forward adoption in condition monitoring of power electronic devices. The proposed method is able to detect variation in the state of health without any contact with the active parts of the module.

Technology Summary
 We have proved that because of mechanical changes in the power semiconductor device we can detect the lifetime status through the acoustic emission measurement of power modules. Our solution monitors power module health parameters online and through analyzing algorithms it can accurately identifies the power semiconductor health condition and prevent from system downtime and possible failures.

Current State of Development
 Repeatability tests have been performed, showing excellent correlation correlation between the results obtained on two two different samples of the same part number.

The Inventors
 Pooya Davari pda@et.aau.dk
 Francesco Iannuzzo fia@et.aau.dk

Contact Information
 Lars Halkjær
 Technology Transfer Manager
 +45 99 40 73 43
lah@adm.aau.dk

Seeking

- Licensee
- Partner/Research Collaboration
- IPR Sale