

## Smart structures using ultrasound guided waves

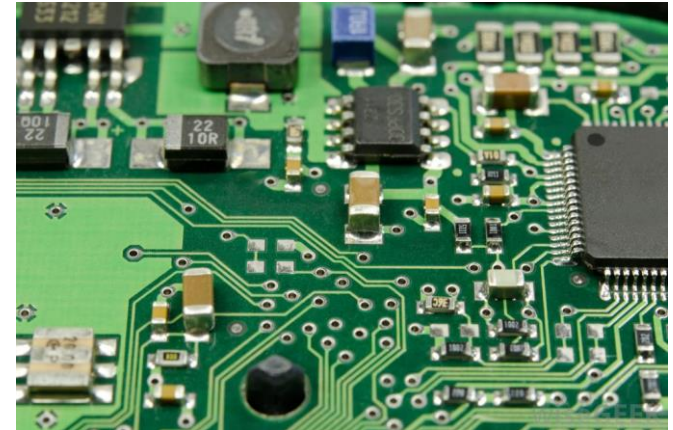
Ultrasound guided waves (GW) interact sensitively with different kinds of defects such as a crack or a delamination. This property makes them attractive for the realization of a smart structure that can autonomously decide whether a defect occurred or not. The goal of this Master thesis is the development of a control board for the data acquisition of ultrasound GWs with sensor self-sensing capabilities of the piezoelectric transducers.

### Tasks:

- Printed Circuit Board(PCB) design for GW-based nondestructive inspection
- Implementation of a software interface, e.g. TCP/IP
- Experimental studies on sensor self-diagnosis

### Prerequisites:

- Basic knowledge in electronics and circuit design
- Basic programming skills



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