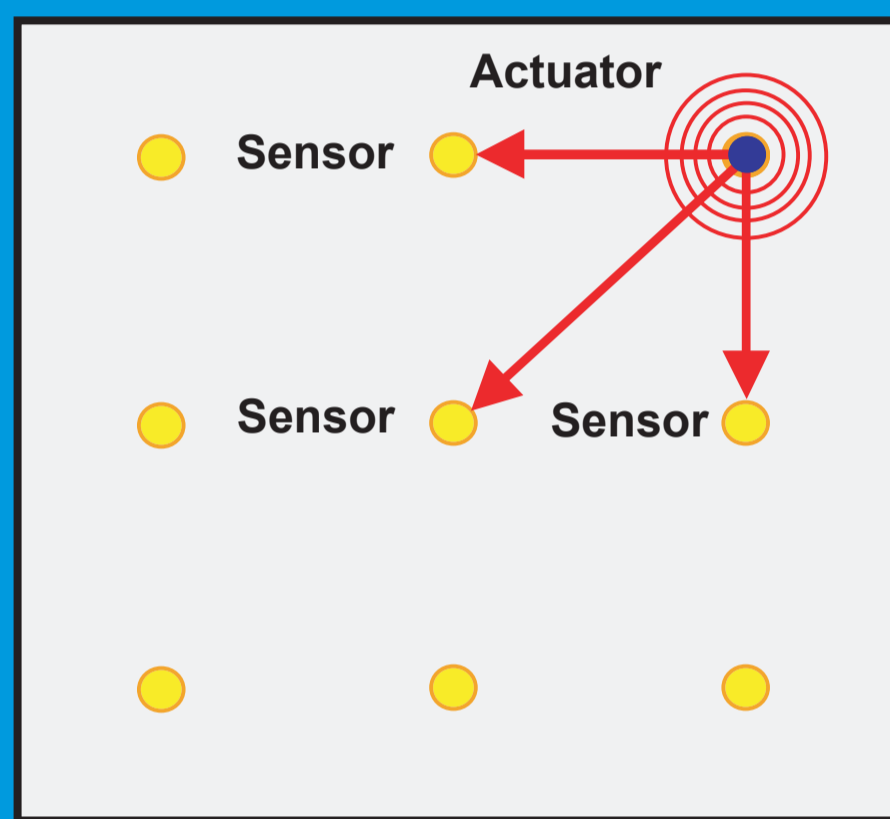
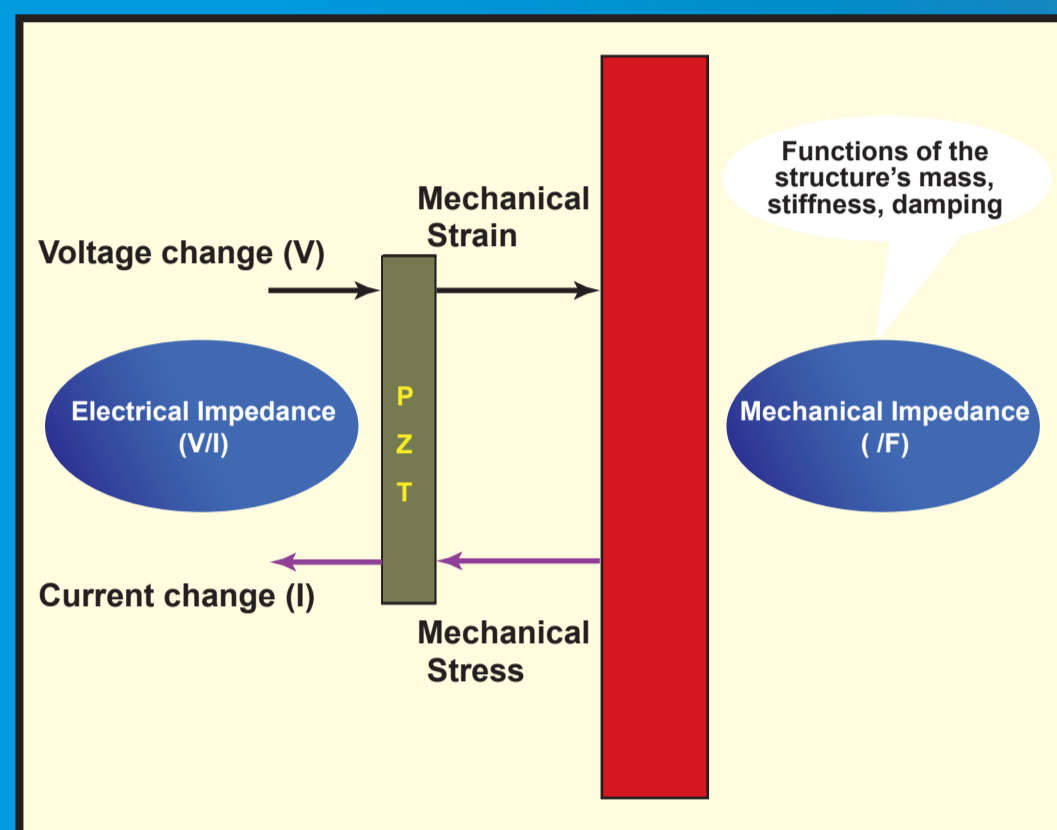




Piezoelectric Active materials provide known and repeatable inputs and measure subsequent responses of structural systems.

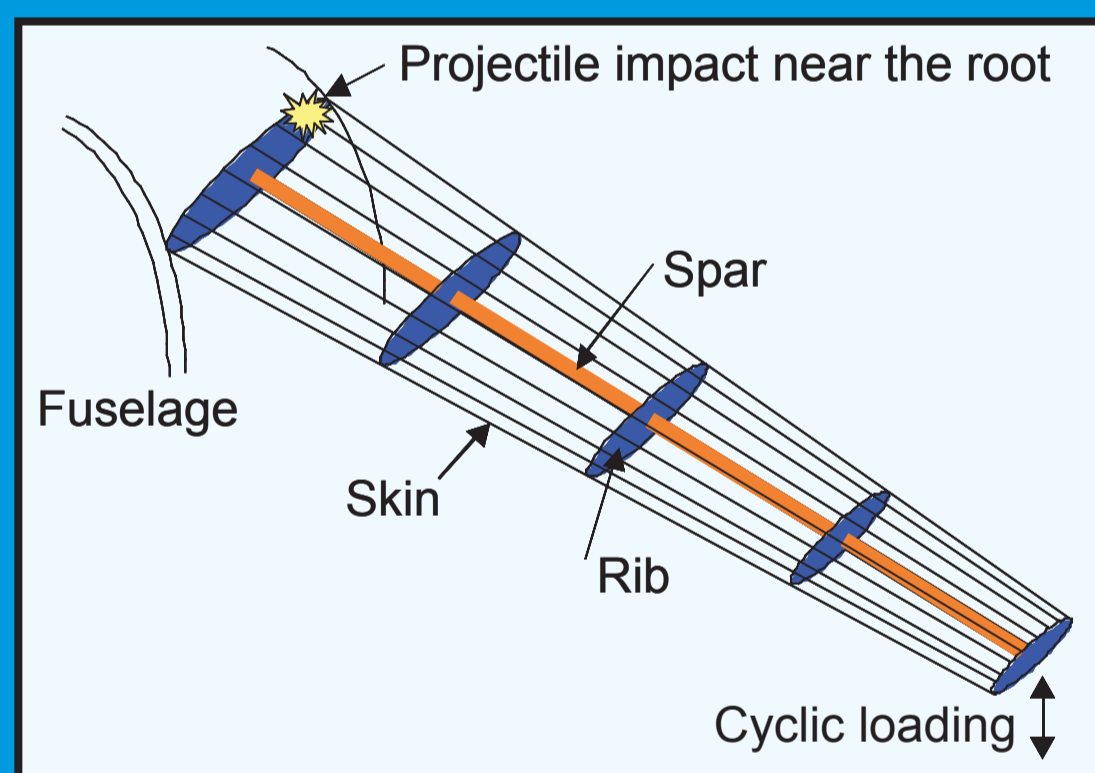
Multi-Scale Sensing

Impedance based damage identification utilizes the electromechanical coupling property of active materials. This self-sensing features allow one to identify incipient local damage.

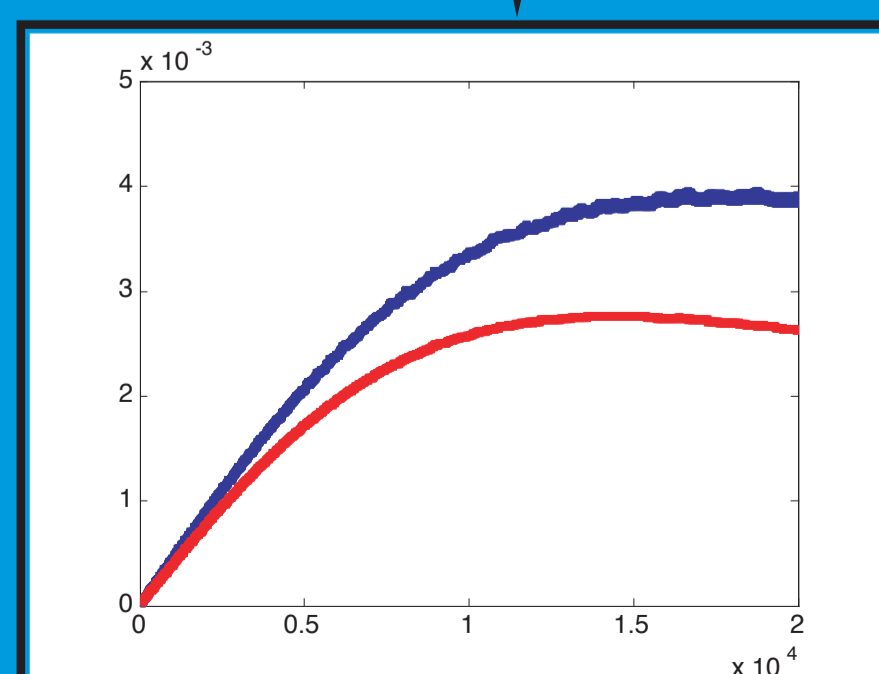
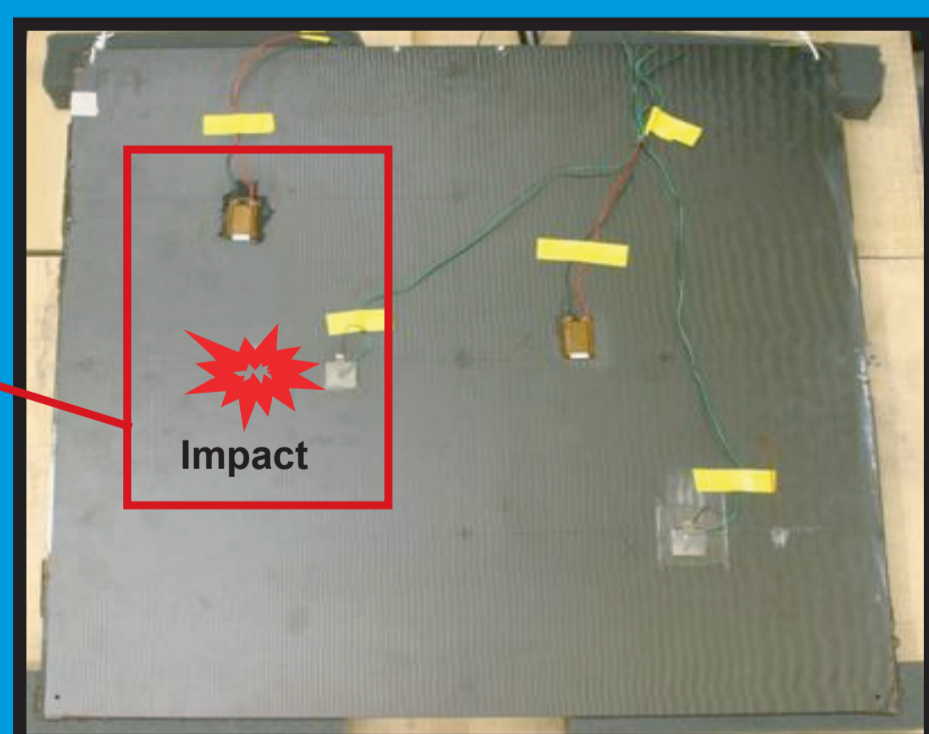
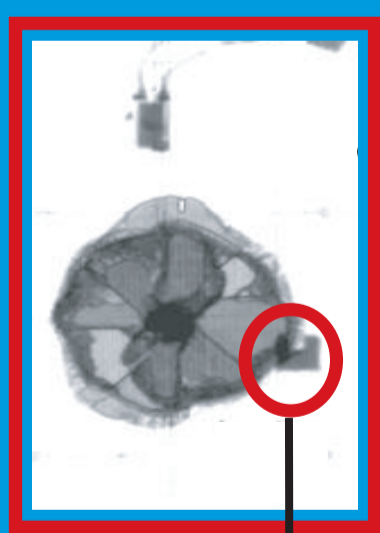


Lamb Wave based damage identification examines the transmitted wave signals, thereby the location, area, and types of local damage can be identified.

Passive Global Sensing assesses the effect of local damage on the global system level responses using the same active materials.



Active Sensor Self-Diagnostics



The functionality of the sensor and its attachment to host structure can be efficiently diagnosed.

Active Sensing for Damage Identification

Piezoelectric active materials are used for Structural Health Monitoring and Damage Prognosis.

www.lanl.gov/damage_id

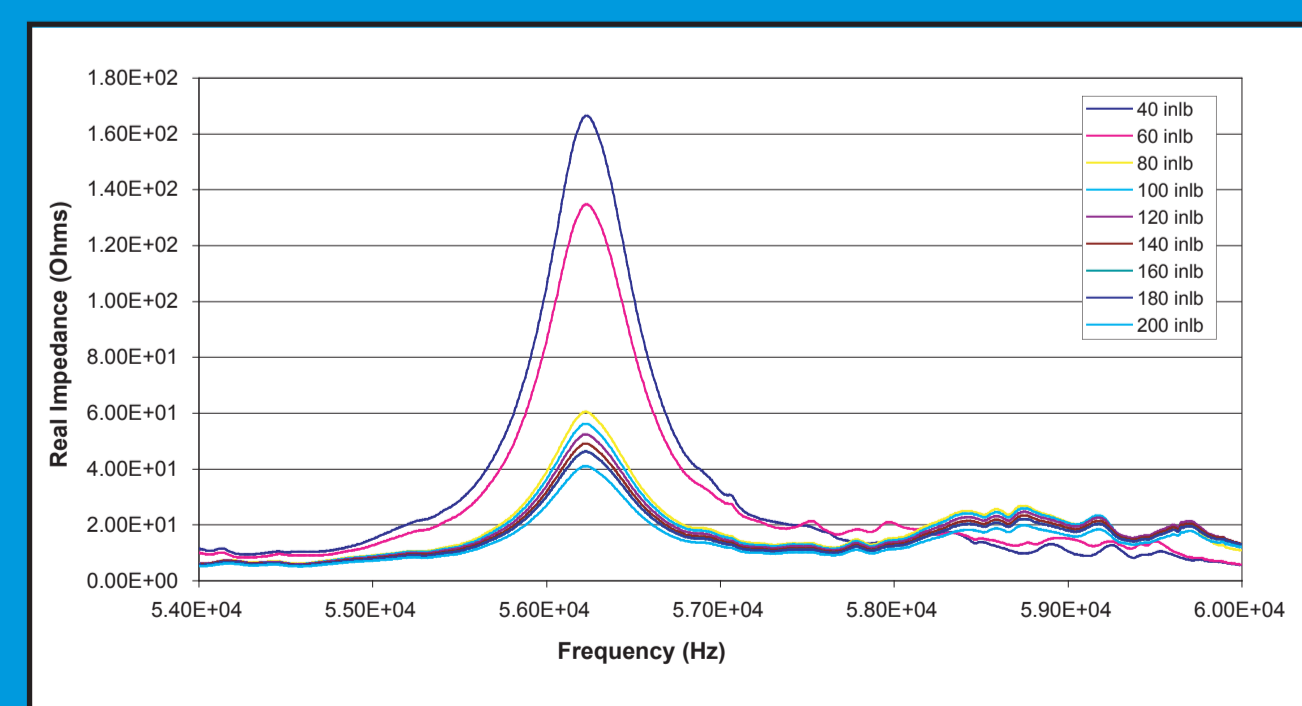
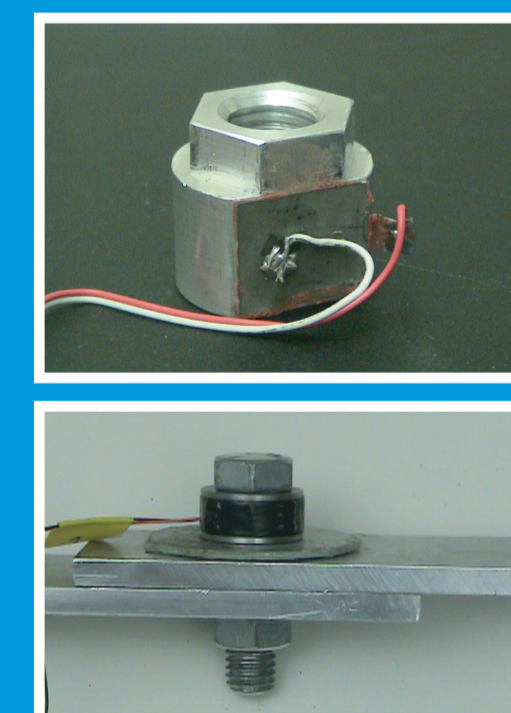
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A device to monitor and prevent common joint failures has been developed.

Self-Sensing and Repairing Joint