

Experimental investigation of electrode suitability and adhesion

✓ Bachelor- / Studien- / Masterarbeit

Piezoelectric composites are 3D printable, thin sensors with applications in Structural Health Monitoring (SHM). For them to work, electrodes on both sides are required. Exist many conductive materials that could be used, but not all of them are suitable for SHM application.

This study focuses on different electrode material suitability. Extensive research was already conducted on sprayable materials and now brush-applicable conductive materials are of interest. Low resistance is the priority with possibility to achieve very thin layers and rigid adhesion with a metal plate.



After manufacturing sensors and applying electrodes, specimens are poled in high electric field. Sensors with electrodes are thoroughly investigated by measuring their dielectric properties. Afterward, they are glued on thin metal plate with adhesives to be investigated and sensor response to Lamb Waves is recorded.

Additional information:

- Part of experimental work might take place at DLR Braunschweig
- Multiple works on same topic possible (e.g. Studienarbeit + Masterarbeit)

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