Investigation of chemical nickel plating parameters for deposition on ceramic parts

✓ **Bachelor- / Studien- / Masterarbeit**

Piezoelectric ceramic parts require thin layers of highly conductive metals to function as sensors and actuators. This becomes more complex when applied to ceramic geometries that are curved or bent. One suitable method is electroless nickel plating, where the ceramic body is immersed in the special chemical bath where nickel plating occurs under specific conditions (temperature, pH). The relevant process parameters, as well as potential surface preparation steps prior to nickel deposition, must be identified and systematically investigated.

Tasks:

- Manufacture ceramic components and prepare them for nickel plating
- Investigate nickel plating process parameters systematically
- Characterize conductivity and adhesion of nickel electrodes

Nature of the study: Experimental work with chemicals

You will learn: ceramic part processing and cleaning, working with chemicals, operation of high temperature ovens, use of microscope, use of various measurement devices

Additional information:

- You select language of the work, either German or English
- Multiple works on same topic possible (e.g. Studienarbeit + Masterarbeit)

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