

Development of focussing ultrasonic transducers

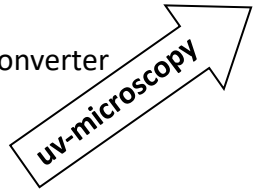
Analysis and metallization of piezo components

Aim

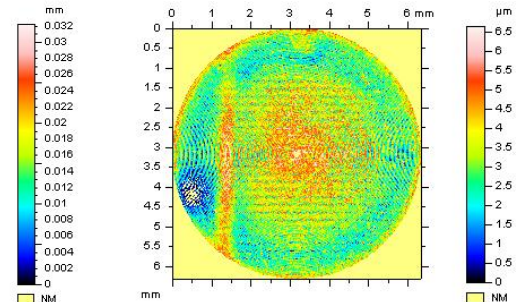
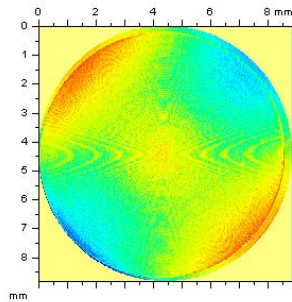
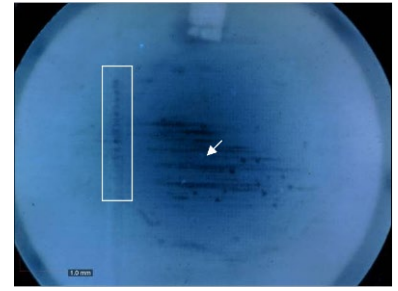
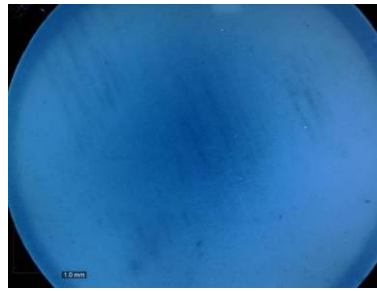
- Surface analysis on piezo components
- Metallization of ceramic-plastic composites (piezo composites) as active components for ultrasonic transducers
- Coating development using vapor deposition and sputtering technology
- Assembling of focusing US-converter (e.g. imaging systems)



Lenze with spot focus



Deviation from ideal lens shape

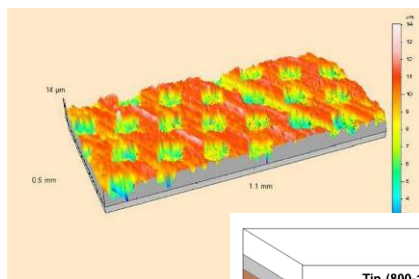


Analysis of lens structures using uv-microscopy (above pictures): without defects (left), with defects (right); using profilometry (pictures below): without defects (left), with defects (right)

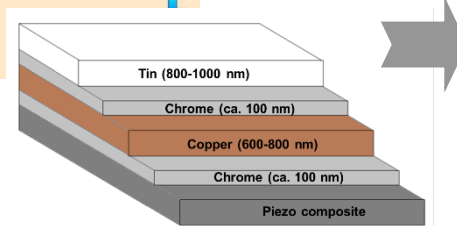
Metallization (contacting) of piezo composites using vapour deposition



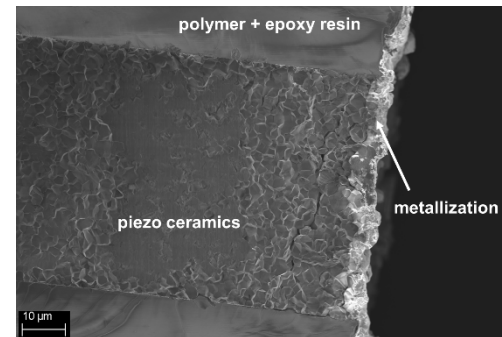
Vaporization plant B30 with glow discharge



Piezo composite: surface structure



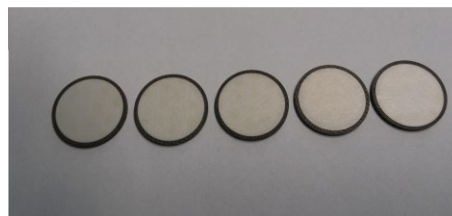
Developed layer structure



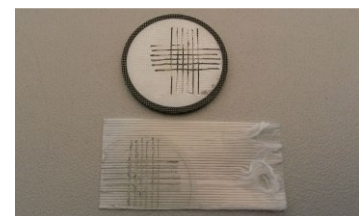
Scanning electron microscopy (SEM) on a metallized piezo composite



Starting substrate, uncoated



Partially metallized piezo composites



Confirmation of layer adhesion by cross-cutting test

Summary and our services for you

- Surface analysis supports the production of defined structures (e.g. determination of lens radius, deviations from ideal lens shape, localization of defects, shifting of the lens center, etc.)
- Development of suitable coating solutions and layer systems depending on the application purpose and the required properties (here: the metallization of piezo elements for electrical control)

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