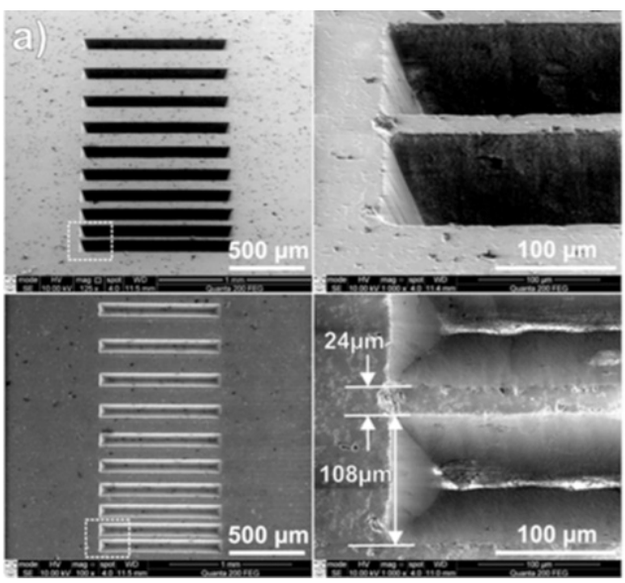
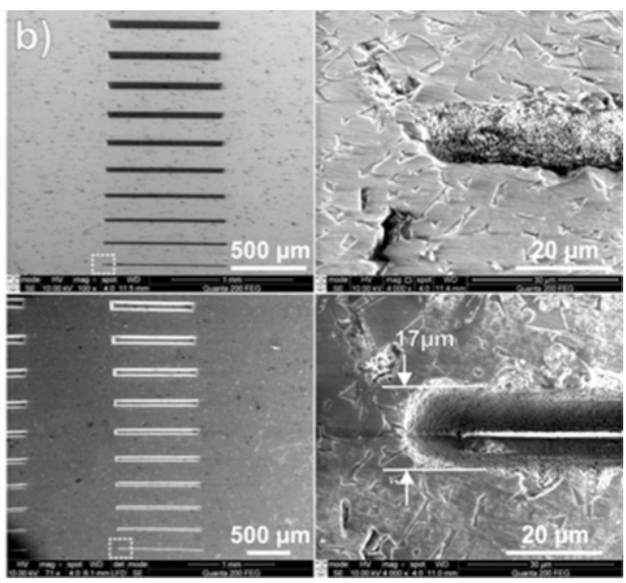
Development of calibrating block for acoustic microscope / MICROSOUND

the objective of the project

Development and production of universal resolution and sensitivity calibration block in alumina ceramics for scanning acoustic microscope operating in a frequency range from 20 MHz to 230 MHz.



Structures for resolution test



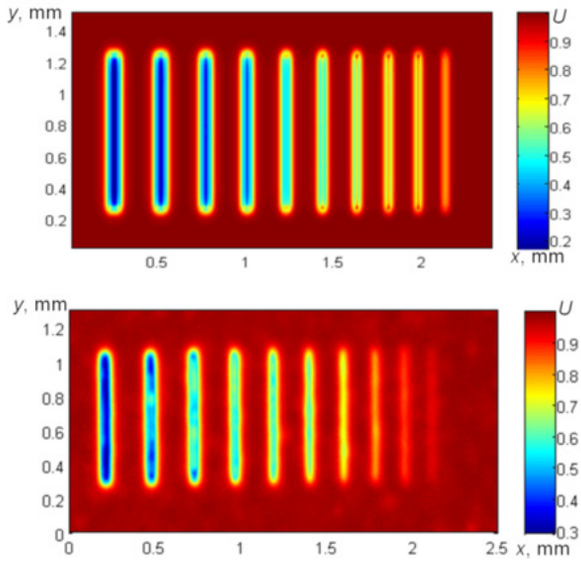
Structures for sensitivity test

SEM micrographs of femtosecond laser micromachined acoustic microscope calibration block structures manufactured in Institute of Materials Science

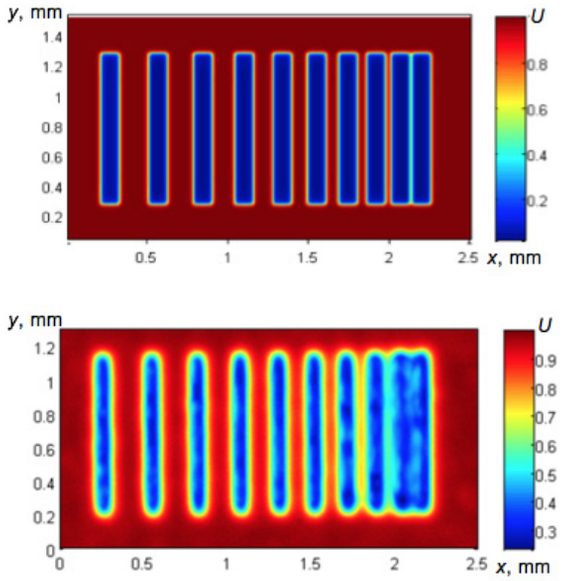
ultrasound institute

Developed high speed numerical model of interaction of the high frequency ultrasonic waves with 3D micromachined structures and performed modelling in order to find the optimal configuration of the patterns of calibration block. Performed of ultrasonic measurements and evaluation of manufactured calibration block for acoustic microscope.

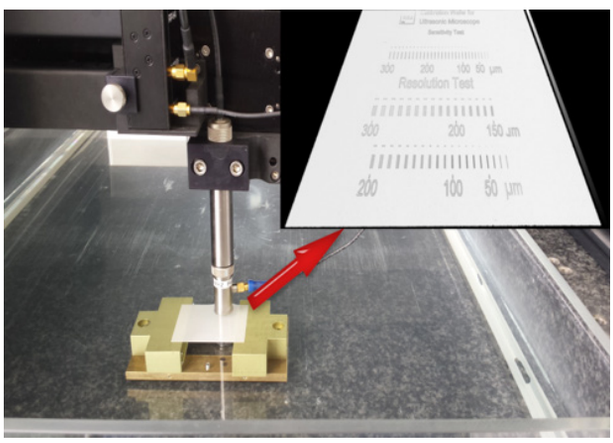
Ultrasound Institute of Kaunas University of Technology
http://ultrasound.ktu.edu



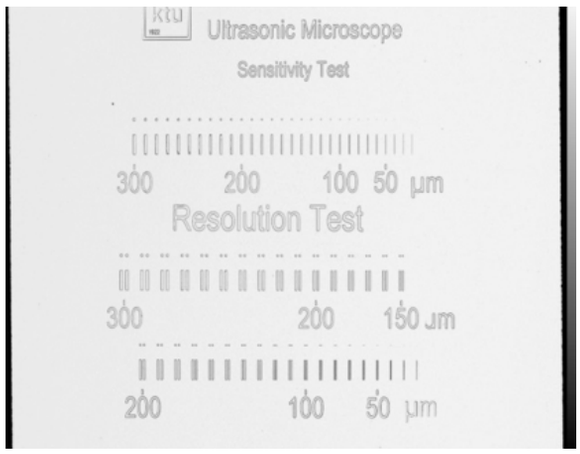
Sensitivity test images: modelled (top), experimental (bottom)



Resolution test images: modelled (top), experimental (bottom)



Experimental set up



C-scan image obtained employing 230 MHz frequency focused ultrasonic transducer

project partners

Institute of Materials Science of Kaunas University of Technology.