Acoustic microscopy in biology and medicine

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The basic principles of a relatively new direction of science – acoustic microscopy, - are stated. While being examined with an acoustic microscope an object is scanning by high-frequency (25-300 MHz), short-pulse focused ultrasonic beam. That enables one either to obtain visual raster images of an object's surface, or internal microstructure, as well as to conduct precise measurements of local acoustic characteristics, which are in a close correlation with mechanical strength of biological tissues and alternate artificial materials [Maev, 2005]. The results of imaging and quantitative characterization of various biological objects, performed with the acoustic microscopes are presented. The prospect and advantages of the acoustic microscopy methods application in experimental biology, biotechnology, medical diagnostics and biomaterial research are under consideration.

Maev R.Gr. Acoustic microscopy 2005, Moscow, Torus-Press, 385 pp., rus. (Маев Р.Г. Акустическая микроскопия. Москва, Изд-во Торус-Пресс, 2005, 385 стр).