

ACOUSTICS2008/3548

Acoustic attenuation in silicon and silicon oxide

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In the present work the non-destructive acoustic attenuation (AA) method of the technological control the structure defects of semiconductor plates after various dozes of the x-ray irradiation is developed. For measurement of temperature dependences of AA the method of resonant fluctuations of a plate on frequency 1,5 kHz was used at elastic deformation in vacuum. Measurements of temperature dependences AA in silicon plate a 460-470 micron thick after drawing a 600 nm layer of silicon oxide. Disk of a p-type silicon, doped B, orientation (100) with specific electroresistance 7,5 ohm·cm. The small maximums of AA were observed at temperature 346 K and 380 K. The main maximum of AA was observed at temperature 510 K. The affinity received by us of value of energy of activation 0,8 eV of AA at 510 K to energy of migration interstitial atoms 0,85 eV of silicon allows to assume the relaxation mechanism caused by reorientation interstitial atoms of silicon in dumbbell configurations.