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Laser spectroscopy studies of the recrystallization of an amorphous layer in GaAs produced by argon ion implantation at ˜77 K

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Abstract content
   (Max 300 words)
Formatting &
Special chars

Recrystallization of an amorphous layer of GaAs on a crystalline GaAs substrate formed by argon-ion bombardment at 100 keV has been investigated using surface Brillouin scattering and Raman spectroscopy. Two samples were implanted at doses of 1×10¹⁵ ions/cm² and at 2×10¹⁴ ions/cm², both at a temperature of ˜77 K. Surface Brillouin scattering (SBS) and Raman scattering have been used to study the isochronal annealing of these two samples. It has been found that the stiffening of the elastic constants as measured with SBS begins at around 120 ^oC and reaches a maximum at 260 ^oC for both samples. Using the Raman technique, it has been observed that the recrystallization of the higher dose implanted sample occurs at around 260 ^oC compared to 240 ^oC for the 2×10¹⁴ ions/cm² implant. These measurements are compared to previous results obtained on implantations at temperatures of ˜ 65^oC.

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PhD

Main supervisor (name and email)
and his / her institution

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No

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