



Contribution ID: 147

Type: Oral Presentation

Ion dose effect on sound velocity in ion-implanted CVD diamond studied using surface Brillouin scattering

Wednesday, 9 July 2014 15:00 (20 minutes)

Abstract content (Max 300 words) http://events.saip.org.za/getFile.py/target=_blank **Formatting & Special chars**

Elastic, surface waves occurring in an ion-damaged region of diamond were studied using surface Brillouin scattering (SBS). By observing the Rayleigh-like mode of pure diamond, ion implanted diamonds to doses of 1×10^{16} ions/cm² and 1.5×10^{16} ions/cm² we noted that pristine diamond has the highest surface wave velocity of ≈ 12500 m/s, while the heavily implanted diamond has the lowest velocity of ≈ 12300 m/s. Elastodynamic Green's functions simulation played an important role in predicting and confirming the spectra observed experimentally. This work has shown that a necessary condition for observing Brillouin spectrum is optically smooth surfaces even in transparent media. It has also been observed that the optical flatness of the surface, front and back plays a vital role in surface Brillouin scattering measurements.

Apply to be considered for a student award (Yes / No)?

No

Level for award (Hons, MSc, PhD)?

N/A

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

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

No

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Session Classification: DPCMM1

Track Classification: Track A - Division for Physics of Condensed Matter and Materials