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Ion Beam Modification of the Structure and Properties of Hexagonal Boron Nitride

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Abstract content
 (Max 300 words)

Cubic boron nitride (c-BN) nanocrystals have been produced by boron ion implantation of hexagonal boron nitride (h-BN) at various fluences and implantation energies. The optimum fluence was found to be 5×10^{14} ions/cm² at 150 keV. The presence of these nanoparticles was investigated using glazing angle XRD (GIXRD) and Fourier Transform Infrared Spectroscopy (FTIR).

Glazing angle XRD pattern after implantation exhibited c-BN diffraction peaks with high intensity at the glazing angle of 3° whose penetration depth corresponded to the implantation depth. After implantation, Fourier transform Infrared spectroscopy indicated a peak at 1090 cm^{-1} which corresponded to the vibrational mode for nc-BN.

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

Yes

Level for award (Hons, MSc, PhD)?

PhD

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

Trevor E Derry
Trevor.Derry@wits.ac.za
University of the Witwatersrand

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

Yes

Primary author: Ms ARADI, Emily (University of the Witwatersrand)

Co-authors: Dr WAMWANGI, Daniel (University of the Witwatersrand); Dr NAIDOO, Mervin (University of the Witwatersrand); Prof. DERRY, Trevor E (University of the Witwatersrand)

Presenter: Ms ARADI, Emily (University of the Witwatersrand)

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