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Cross-section Electron Microscopy studies of Boron Implanted Hexagonal Boron Nitride

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**Abstract content (Max 300 words)
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Special chars**

We have reported on the use of ion implantation as a technique to modify hexagonal boron nitride (h-BN) material to nanocrystalline cubic boron nitride (nc-BN). Single crystal h-BN was implanted with boron ion at 150 keV at fluence of 5×10^{22} ions/cm². Transmission Electron Microscopy (TEM) measurements were carried out using the High Angle Annular Dark-Field Scanning Electron Microscopy (HAADF-STEM) mode, which showed a density contrast in the sample after implantation, with regions of low contrast representing the high density c-BN symmetry. Raman spectroscopy showed that there is a new vibrational mode observed in the spectrum after implantation which corresponded to nc-BN. Phonon confinement model was used to investigate the size of the c-BN nanoparticles created by ion implantation.

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No

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n/a

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

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