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Investigating the structural changes in strontium implanted glassy carbon using Multiwavelength Raman Spectroscopy

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Abstract content
 (Max 300 words)
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The effect of strontium ion implantation and annealing on the structure of glassy carbon was investigated using Multiwavelength Raman Spectroscopy. Three wavelengths for the excitation beam were used namely 244, 514, and 785 nm. The Raman spectra of the virgin glassy carbon for the latter two excitation beams showed the carbon D and G peak positions at 1350 cm^{-1} and 1588 cm^{-1} respectively. The Raman spectrum with the 244 nm wavelength showed the G peak position at 1588 cm^{-1} and an additional D peak at approximately 1423 cm^{-1} . The bombardment of 200 keV strontium ions resulted in amorphisation of the implanted region with the D and G peak merging into a single broad band. The G peak position reduced from 1588 cm^{-1} to 1543 cm^{-1} . The reduction in the G peak position was also accompanied with a reduction in the ID/IG ratio from 1.4 to 0.47. Slight recovery of the glassy carbon structure was achieved after heat treatment at several temperatures.

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Prof J.B. Malherbe, johan.malherbe@up.ac.za

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Primary author: Ms ODUTEMOWO, opeyemi (university of pretoria)

Co-authors: Prof. MALHERBE, Johan (University of Pretoria); Dr PRINSLOO, Linda (University of Pretoria); Dr ERASMUS, Rudolph (University of the Witwatersrand)

Presenter: Ms ODUTEMOWO, opeyemi (university of pretoria)

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