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Study of iodine implanted in pyrolytic carbon after heat treatment

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Abstract content
   (Max 300 words)

The behaviour of iodine in Pyrolytic carbon (PyC) has been studied using Rutherford backscattering spectrometry (RBS), X-ray diffraction (XRD) and scanning electron microscopy (SEM).Iodine ions were implanted into the PyC using a fluence of 1×1015 iodine ions per cm2, at room temperature. After implantation the PyC samples were annealed (in vacuum) isochronally at 900 ℃, 1000 C, 1100 ℃ and 1200 ℃; all for 9 hours.The full width at half maximum (FWHM) of the iodine profiles showed that after heat treatments of 900 ℃, 1000 ℃ and 1100 ℃, more iodine initially diffused deeper into the PyC bulk than towards the PyC surface. At 1200 ℃, the diffusion of iodine towards the PyC surface increased. It was proposed that this iodine behaviour was associated with the changes in the PyC structure due to ion implantation and high temperature treatment of the PyC. The obtained iodine profiles and the corresponding FWHM did not show evidence that the diffusion of iodine in both directions could be attributed to Fickian diffusion mechanism; hence the activation energy was determined.

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

Yes

Level for award
 (Hons, MSc,
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M.Sc.

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

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Would you like to <br> submit a short paper <br> for the Conference
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No

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