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Type: **Poster Presentation**

The solid-state interaction of palladium on 6H-SiC

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The interaction of Pd and SiC samples during thermal annealing were investigated using x-ray diffraction (XRD), Rutherford backscattering spectrometry (RBS) as well as Scanning Electron Microscopy (SEM). Two sample configurations were used (1) the palladium (50nm) was deposited onto a degreased 6H-SiC substrate and (2) palladium ions were implanted into the 6H-SiC substrate at room temperature and at 200°C with a fluency of $1 \times 10^{15} \text{ cm}^{-2}$.

Both sets of the samples were annealed between temperatures of 200°C-800°C for a period of 60 min. The study showed that the thermally annealed Pd on SiC showed no detectable reaction after annealing at 200°C-400°C. At 500°C the RBS spectra shows that the Pd had reacted with SiC. Using XRD it was observed that metal rich silicides Pd₃Si tend to form first after annealing at 500°C followed by the formation of Pd₂Si after annealing at 600°C, 700°C and 800°C. No Carbon compounds were detected by XRD in these annealing temperature ranges. The implanted samples showed no detectable phase formation after annealing at temperature ranges of 200°C-800°C for a period of 60 min and at 1000°C for 10 hours. The RBS / Channeling results for the implanted samples are also shown.

Level (Hons, MSc, PhD, other)?

MSc

Consider for a student award (Yes / No)?

No

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

No

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