

Carbon vacancy-related defect in 4H and 6H SiC

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Abstract: An electron paramagnetic resonance (EPR) spectrum was observed at temperatures above 25 K in p-type 4H and 6H SiC irradiated with electrons. The center has C_{3v} symmetry with an electron spin $S = 1/2$. Using high frequency (95 GHz) EPR it was possible to obtain the detailed hyperfine structure due to the interaction with the four nearest silicon neighbors, and to identify the defect as the carbon vacancy in the positive-charge state (V_{c+}). The g values and hyperfine tensor of the center in both polytypes are almost the same and no dependence on the inequivalent lattice sites has been detected.

Index Keywords: carbon; silicon; article; electron; electron spin resonance; high temperature procedures; magnetic field; mathematical parameters; semiconductor

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