

## **Cluster related hole traps with enhanced-electric-field-emission- the source for long term annealing in hadron irradiated silicon diodes -**

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Cluster related defects were investigated by the Thermally Stimulated Current (TSC) method in neutron irradiated n-type Si diodes during 80C annealing. Three hole traps proved to have an electric-field-enhanced emission characteristic for Coulombic wells. Their zero field emission rates were obtained describing the TSC peaks with the three-dimensional Poole Frenkel formalism when accounting for the spatial distribution of the diodes electric field. As acceptors in the lower half of the gap these centers have a direct impact on the effective doping of the n-type diodes. They are revealed as causing the long-term annealing effects.

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