

**SiC single crystal grown on a seed with an inserted epitaxial layer for the power device application.**

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**Abstract.** SiC single crystal ingots were prepared onto different seed material using sublimation PVT techniques and then their crystal quality was systematically compared. In this study, the conventional SiC seed material and the new SiC seed material with an inserted SiC epitaxial layer on a seed surface were used as a seed for SiC bulk growth. The inserted epitaxial layer was grown by a sublimation epitaxy method called the CST with a low growth rate of 2 $\mu$ m/h. N-type 2"-SiC single crystals exhibiting the polytype of 6H-SiC were successfully fabricated and carrier concentration levels of below 10<sup>17</sup>/cm<sup>3</sup> were determined from the absorption spectrum and Hall measurements. The slightly higher growth rate and carrier concentration were obtained in SiC single crystal ingot grown on new SiC seed materials with the inserted epitaxial layer on the seed surface, maintaining the high quality.