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A novel technique for slicing SiC ingots by EDM utilizing a running ultra-thin foil tool electrode

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Highlights

- A novel running foil electrical discharge slicing process was developed.
- 1-inch SiC ingot was successfully sliced with 50μm thick foil tool electrode.
- Slicing kerf loss less than 100μm was achieved.
- Three simultaneously slicing was successfully performed by rewinding the foil tool.

ABSTRACT

Recently, a multi-wire electrical discharge slicing (EDS) process has been proposed for slicing SiC ingots into wafers. A significant reduction in kerf loss is expected with this method compared with the conventional multi-wire saw method. However, this process entails a high risk of wire breakage. Therefore, in the present study, a novel electrical discharge slicing process utilizing a running ultra-thin foil tool electrode is demonstrated for the slicing of SiC