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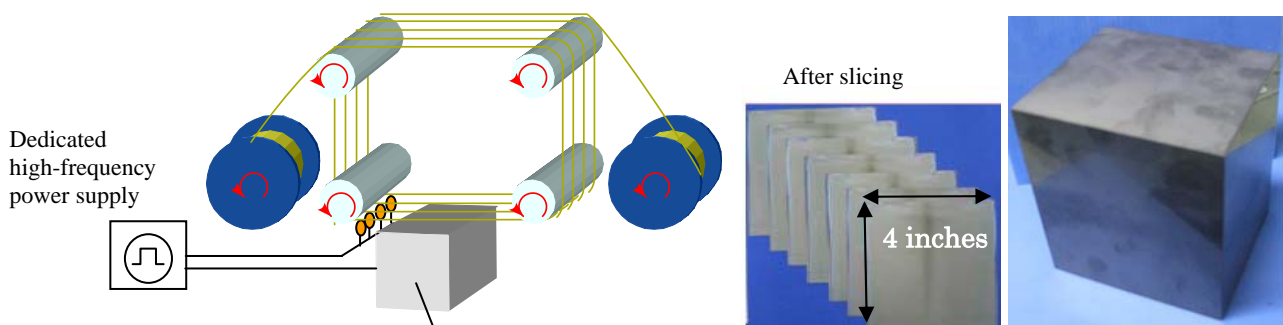
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Mitsubishi Electric Develops Multi-wire Electrical Discharge Slicing Technology for Silicon Carbide (SiC) Ingot Processing

Improves productivity of SiC slice processing for semiconductor wafers

TOKYO, February 6, 2013 – [Mitsubishi Electric Corporation](http://www.mitsubishielectric.com) (TOKYO: 6503) announced today it has developed a prototype multi-wire electrical discharge processing technology to cut very hard 4 inch square polycrystalline silicon carbide (SiC) ingots into 40 pieces at once. The technology is expected to improve both the productivity of SiC slicing and the effective use of SiC material. Mitsubishi Electric aims to market its multi-wire electrical discharge slicer by fiscal 2015.

SiC is expected to be used increasingly in power semiconductors due to its superior energy-saving and CO2 emissions-reduction properties compared to silicon. Until now, sliced wafers have been produced through multi-wire saw with diamond particles because SiC is the third hardest compound on earth, but this method requires lengthy machining time and large kerf widths. The new parallel multi-wire electrical discharge machining method utilizes Mitsubishi Electric's proven electrical discharge technology for difficult-to-cut material, and employs a dedicated power supply specially developed for SiC.



Key Technologies

Simultaneous cutting of SiC ingots into 40 pieces

- Forty wire electrodes with a diameter of 0.1 mm aligned at 0.6mm intervals are rotated to cut 40 slices at once, improving productivity.
- The non-contact, thermal process-wire electrical discharge method slices faster and at closer intervals compared to contact cutting (220 micro meters or less cut at a speed of 80 micro meters per minute)
- More wafer slices extracted per SiC ingot for improved efficiency.

Power supply dedicated to SiC slice processing

- Simultaneous wire cuts with even energy enabled by 40 electrically independent power feed contacts to wire electrodes.
- Uninterrupted processing with even very thin (0.1mm) wire electrodes thanks to a newly developed high-frequency power supply tailored to the characteristics of SiC material.

Pending patents for the technology number 22 in Japan and 10 overseas.

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About Mitsubishi Electric

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 3,639.4 billion yen (US\$ 44.4 billion*) in the fiscal year ended March 31, 2012. For more information visit <http://www.MitsubishiElectric.com>

*At an exchange rate of 82 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2012