PRESS RELEASE

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Contactless SiC Plasma Epi-prep: Oxford Instruments Validates Power Devices with Technology Acceleration Partner Clas-SiC

Recently Oxford Instruments announced the launch of their SiC substrate contactless plasma polishing solution. The aim of this technology is to supersede the established chemical mechanical planarization CMP process, with a clean, dry, lower cost, higher yield and sustainable alternative. The project has taken a big step forward by collaborating with Clas-Sic and qualifying whole wafer 1200V MOSFET devices, further boosting confidence in the new solution and its impact on SiC power semiconductor devices.

"The 1200V MOSFET parametric results and yield are very encouraging, being very comparable to those of conventionally CMP prepared wafers which were used as a direct comparison. We rely on multiple vendors for substrates due to supply limitations, so incoming material variability is a challenge across the device manufacture industry. The fact that substrates were sourced, processed at Oxford Instruments, incorporated into our production flow on two separate device types and achieved such comparable results so soon, should give Oxford Instruments confidence that their process window is robust and fit for purpose. For a first result this is a hugely positive outcome and gives confidence that Oxford Instrument's new technology has a great future in reducing the cost of the very expensive incoming SiC substrates. This will be very important in reducing the cost of SiC based power converters and in increasing their adoption in the marketplace" comments David Clark, Technology & Customer Relations Manager, Clas-SiC.

Demand currently exceeds supply for SiC substrates, and the wide band gap semiconductors that are manufactured on the substrates are also in short supply. This production gap is set to exponentially increase, as high-growth electric vehicle and sustainable energy markets incorporate ever increasing amounts of these compound semiconductors into their applications, so new solutions are therefore needed. Plasma polishing is a plug and play alternative to CMP, that straightaway reduces the cost per wafer with reduced OPEX, but is also a key enabling technology to accelerate the transition to thinner slices and more wafers per boule at 150mm and 200mm. This, and other innovative SiC technologies, have the potential to shift the production paradigm, so that SiC supply chains can comfortably support high-growth technology markets in a sustainable way.

Oxford Instruments will share full wafer MOSFET performance data at ICSCRM, in Davos Switzerland 11-16 September 2022. There will also be an opportunity to speak in person at the event to discuss implementing Plasma Polish in high volume manufacturing fabs. Register to attend at this link https://icscrm2022.org/registration and to prearrange an in-person meeting, contact Brian.Dlugosch@oxinst.com (VP of Strategic Production Markets, Oxford Instruments Plasma Technology).

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About Oxford Instruments plc

Oxford Instruments designs, supplies and supports high-technology tools and systems with a focus on research and industrial applications. Innovation has been the driving force behind Oxford Instruments' growth and success for 60 years, supporting its core purpose to address some of the world's most pressing challenges.

The first technology business to be spun out from Oxford University, Oxford Instruments is now a global company and is listed on the FTSE250 index of the London Stock Exchange (OXIG). Its strategy focuses on being a customer-centric, market-focused Group, understanding the technical and commercial challenges faced by its customers. Key market segments include Semiconductor & Communications, Advanced Materials, Healthcare & Life Science, and Quantum Technology.

Their portfolio includes a range of core technologies in areas such as low temperature and high magnetic field environments; Nuclear Magnetic Resonance; X-ray, electron, laser and optical based metrology; atomic force microscopy; optical imaging; and advanced growth, deposition and etching.

Oxford Instruments is helping enable a greener economy, increased connectivity, improved health and leaps in scientific understanding. Their advanced products and services allow the world's leading industrial companies and scientific research communities to image, analyse and manipulate materials down to the atomic and molecular level, helping to accelerate R&D, increase manufacturing productivity and make ground-breaking discoveries.

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