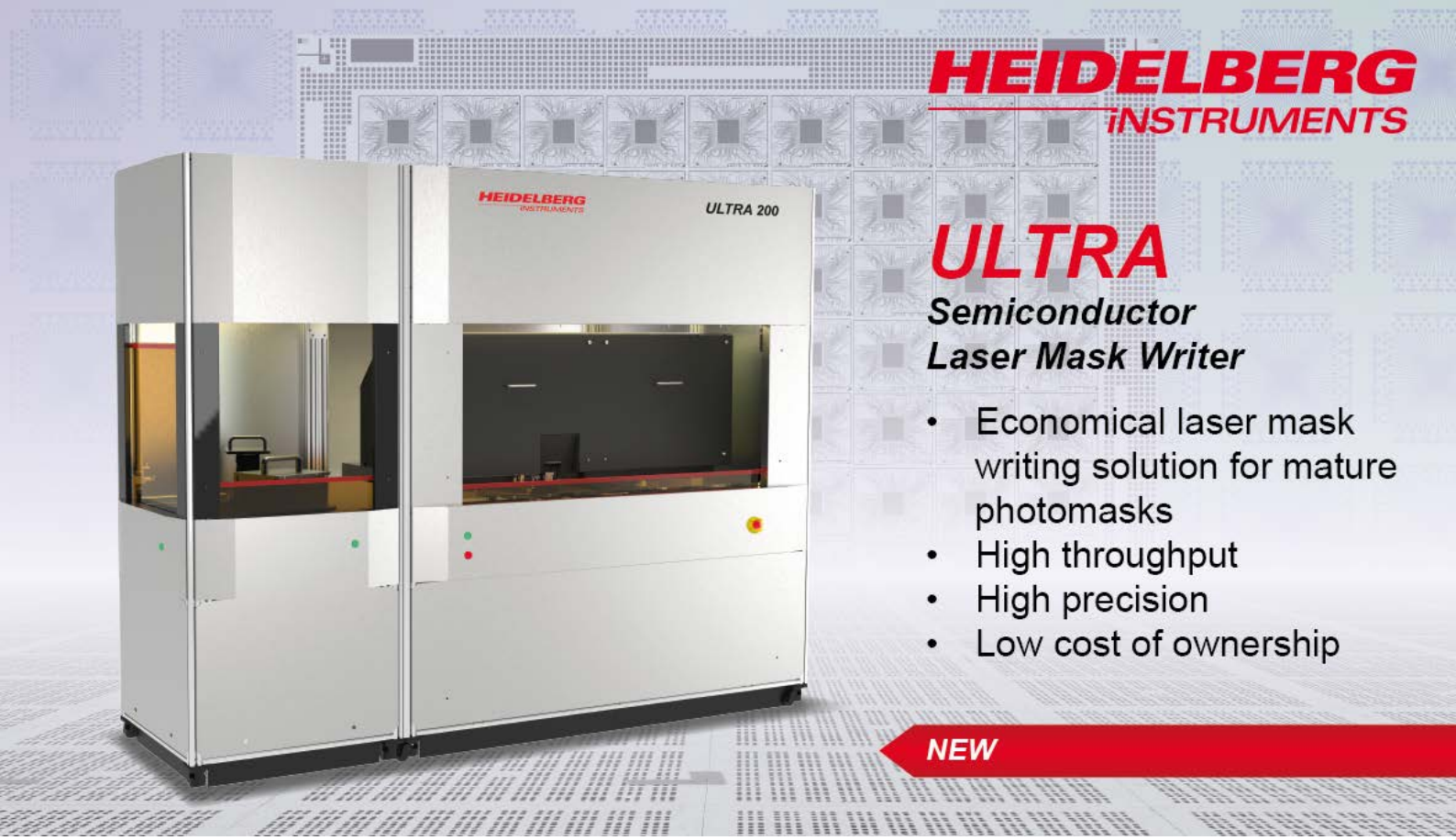

Heidelberg Instruments enters the Semiconductor Photomask Market

Heidelberg, Germany, 19TH October, 2018: Heidelberg Instruments, leading supplier of laser and maskless lithography systems, today launched the ULTRA Semiconductor Laser Mask Writer, the industry's most economical solution for production of photomasks with 150 nm design node. With its high throughput, small minimum feature size, excellent overlay, 2nd layer alignment and CD uniformity, ULTRA is an ideal tool to address diverse applications in the semiconductor Industry.

"Currently many photomask production groups use either e-beam lithography tools or aging laser writers to produce photomasks for layers with 100-200 nm design nodes," said Alexander Forozan, Vice President at Heidelberg Instruments. "This is ineffective and costly. With its competitive pricing and low cost of ownership, excellent reliability and pattern performance, the ULTRA Semiconductor Laser Mask Writer will enable our existing and future customers to significantly boost their core photomask production business. The ULTRA family of systems will be a long-term commitment and we intend to continue with expansion into 90 nm design node in the near future."

ULTRA features multiple high-speed Spatial Light Modulators (SLM) in order to achieve finer address grid and higher throughput. Its high-speed data path is designed to handle most complex geometries and dense patterns while maintaining high exposure speed. In addition, a custom designed objective lens with NA of 0.9 and an address grid of 5 nm, along with an excellent focus control, contribute to outstanding CD Uniformity.

Superb overlay is reached with an advanced position control using a 1.2 nm differential interferometer, and cutting-edge thermal management by an integrated environmental chamber in combination with non-thermal expansion (Zerodur™) material. Matrix Correction and a sophisticated algorithm which measures first layer distortion and irregularities, are applied during the exposure ensuring outstanding 2nd layer alignment.

ULTRA is powered by a 355 nm DPSS UV laser source with low running cost, reliable performance and a significantly longer lifetime compared to the typical gas lasers used for similar applications.

For more information about ULTRA Semiconductor Laser Mask Writer please visit our website at ultra.himt.de

About Heidelberg Instruments: With an installation base of over 800 systems in more than 50 countries, Heidelberg Instruments is a world leader in the production of high-precision laser and maskless lithography systems. Due to their flexibility, power and versatility, these systems are employed for direct writing and photomask production in a wide range of settings and applications in research, development, and industry. Customers include some of the most prestigious universities and industry leaders in the areas of MEMS, BioMEMS, nanotechnology, ASICS, TFT, displays, micro optics, and many other related applications.

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