NEW 256JET-S PRINTHEAD FROM TRIDENT REDUCES COSTS AND ENHANCES EFFICIENCY OF SOLAR PHOTOVOLTAIC PRODUCTION PROCESSES

Product is first to be launched by Trident Solar, a new division dedicated exclusively to solar inkjet technologies

(August 4, 2009) Connecticut, USA. – Trident, the global leader in industrial inkjet printhead and ink production, announces the launch of a new division, Trident Solar™, dedicated exclusively to the design and production of durable, efficient inkjet technologies for photovoltaic applications. Trident Solar's first new product is the versatile, inert "256Jet-S"™ inkjet printhead.

Available worldwide, the 256Jet-S features a 256-nozzle printhead with durable, serviceable design and rugged stainless steel construction which allows for non-contact printing of a wide variety of acid and alkaline etchants and conductive metals for direct write, printable solar photovoltaic production applications. The 256Jet-S printhead **lasts up to 8 times longer than alternative inkjet printheads.** Use of the 256Jet-S printhead **can be up to five times less expensive** than lithographic screen printing, while simultaneously providing **up to three times higher print resolution.**

"What is unique about Trident Solar and the 256Jet-S printhead is that unlike many inkjet companies, Trident is not simply adapting a graphic inkjet printhead to photovoltaic applications," explained Steve Liker, Business Manager at Trident. ""Trident Solar designed the 256Jet-S inkjet specifically for jetting the challenging, aggressive materials that are used in photovoltaic applications. This strategic focus provides users with significant cost and efficiency savings when compared to other printing techniques as well as to alternative inkjet technologies."

The inert, durable construction of the 256Jet-S makes it ideal for use in direct write, precision dispensing of etchants with PH ranging from 2 – 14. For example, strong bases such as NaOH or KOH can be used to etch produce line or hole features in the indium tin oxide layer. Phosphoric acid can be used to produce undercut openings in the surface of a semiconductor structure to connect to a doped layer or connect to a back electrode.

Inkjet printing brings several key advantages to photovoltaic production processes. Lines or holes of 50 microns width by 5-10 micron depth can be produced without the damage and defects associated with lasers. Digital printing is non-contact so breakage and resulting scrap are eliminated. In addition, inkjet can be used to jet conductive metal inks (such

as silver ink) to digitally produce contact lines as narrow as 50 micron thick – 2-3 times finer than can be produced with silver paste, a squeegee and screen printing. This allows manufacturers to print exactly the amount of material they need, exactly where they need it, saving significant time, expense and waste. This also enhances efficiency, as contact widths can be minimized, ensuring that valuable sunlight is not blocked.

The 256Jet-S printhead also provides several key advantages when compared to alternative inkjet technologies. The 256Jet-S revolutionizes deposition processes for solar PV production with its durable, serviceable design. Whereas previously agglomeration of conductive materials during the deposition process meant that printhead nozzles would clog, and printheads needed to be discarded and replaced, the serviceable nozzle plate of the 256Jet-S can simply be removed, cleaned and reassembled – a significant improvement in printhead life and ROI. This allows the 256Jet-S printhead to last up to three years, a period about 8 times longer than alternative inkjet printheads which may need to be replaced as often as every four months. Its rugged industrial design gives the 256Jet-S printhead an industry-leading lifespan of 90 billion firings.

The 256Jet-S is unique in its ability to jet a wide viscosity range from 6 cps – 30 cps. This range allows increased formulation flexibility to the material providers.

The 256Jet-S is available in four models to enable precision dispensing of 5 pl, 30 pl, 50 pl, or 80 pl drops.

About Trident

Trident industrial inkjet has been a leading provider of industrial piezoelectric inkjet printheads and inks for more than 30 years. The durable, stainless steel construction of Trident printheads makes them ideal for a wide range of industrial applications including photovoltaic, printable electronic, fabric and carton printing. Trident has expert knowledge in how to design inkjet printheads and optimize ink jettable materials and fluids in order to maximize performance and reliability.

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High Resolution (300dpi) Photography :
IMAGE (256JetSPrinthead.jpg)
Caption: Trident's new 256Jet-S inkjet printhead featuring a rugged, serviceable design is inert to corrosive etchant materials, offers an industry-leading lifespan and can print conductive metal contacts up to 3x higher resolution than possible with screen printing.