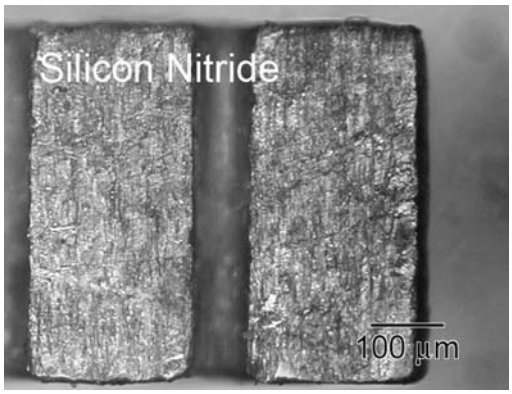
Press Release

JPSA Job Shop Offers Vertical Wall Taper-less Hole Drilling

Manchester, New Hampshire, USA – J P Sercel Associates (JPSA) now offers hole drilling with excimer lasers with controlled hole tapering. This means that holes of varying sizes in a wide variety of soft or hard materials can be drilled with straight or vertical walls regardless of the thickness of the material drilled through, i.e., unaffected by a high aspect ratio. JPSA can also drill holes with a controlled taper (i.e., user-defined angle) as well as vertical, or 'taper-less' ones.



Silicon Nitride sectioned hole, ~1mm deep, parallel sides

In making the announcement, Rick Slagle, Sales and Marketing Director, said, "In the past, one typical problem with laser drilling would be the existence of a taper, which becomes more of an issue the smaller the hole, and the thicker the material. The hole entrance would be larger than the exit. Although a tapered hole can sometimes be a requirement, more often the application requires a taper-less hole."

"Now, with the use of specially-designed optics, JPSA's laser engineers are able to control this tapering effect, and can even eliminate it to produce taper-free holes in many different materials including ceramics such as alumina, silicon nitride, and polymers such as polyimide."

Slagle adds that the effect can be achieved over a wide range of material thicknesses from tens of microns to hundreds of microns, with hole dimensions that can be of the order of a few microns to hundreds of microns.

"Moreover, with an excimer projection system, the variety of shapes that we are able to machine are unlimited. They range from round to rectangular and may include other sharply-defined features. The process can be optimized to process a large number of holes simultaneously, or various types of holes in an automated fashion. Due to excimer laser beam characteristics, a spatially-uniform beam can be formed, thus allowing machining of perfectly-defined blind holes. Thus, we can easily machine 3-D features where, for example, we can actually micromachine smaller features within larger ones."

JPSA's job shop expertise runs from wafer singulation and LED lift-off for the semiconductor packaging industry, to micromachining a full spectrum of materials for many industries including microelectronics, semiconductor, and medical products manufacturing. In addition to UV laser technology, JPSA's job shop and applications laboratory now have different laser types available including IR and "Green" lasers for emerging industries such as thin film solar panel manufacture.

About J. P. Sercel Associates

JPSA products and services include UV excimer, DPSS and ultra-fast laser micromachining systems, UV and VUV laser beam delivery systems, laser materials processing development, optical damage testing, and excimer laser refurbishment services. JPSA operates a high-performance laser job shop as well as a systems engineering and manufacturing business. For more information, visit www.jpsalaser.com, or contact the company at 220 Hackett Hill Road, Manchester, NH, 03102 USA; Tel. 603.518.3200, Fax 603.518.3298.