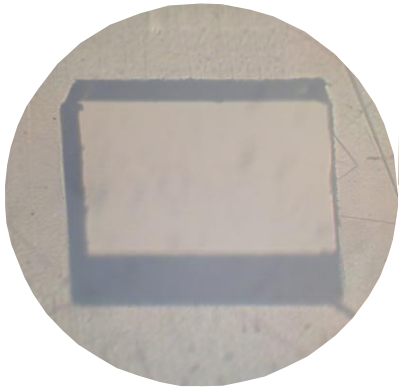
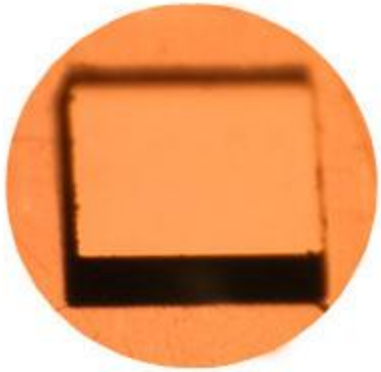
Passat

Micromachining

Plastic, Resin



Reflected light



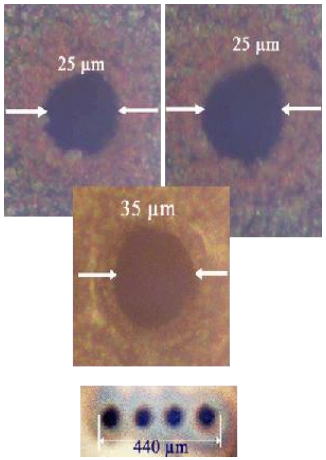
Transmitted light

Short UV pulse width and fast plume removal avoid heat accumulation in the deeper layers of plastic and resin. The photo of a rectangular 1 x 1 mm^2 hole cut in 400-μm plastics sheet (nylon) shows lack of residual carbon usually develops as black areas covering the cut (made by 266-nm, 4-ps pulses). This cut does not have obvious tracks of residual carbon.

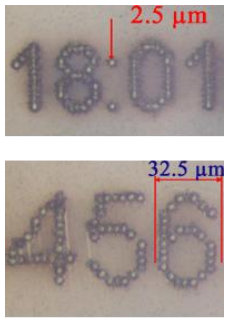
Passat

Metals, semiconductors, ceramic

Silicon Wafer Processing



Silicon Wafer Drilling



Silicon Wafer Marking

Cutting of Metal Sheets

Tungsten with 100 µm "bridge"

Molybdenum

Due to a short wavelength and high peak power the picosecond UV lasers make it possible to provide minimum diameter holes as well as minimum width slits in metal, ceramics and in other sheets of material with hundreds of micron thicknesses. The quality of these cuts is practically the same as those obtained with femtosecond lasers. For example, the cuts made with 266-nm and 213-nm pulses don't have a Heat Affected Zone and the hole's irregularities are less than 1 micron. Typical rate of UV micro-drilling is 0.4 µm for the laser fluency ~20 J/cm^2.

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