

Femtosecond Laser for Microprocessing

1. The femtosecond laser processing in FUTA-Q

We have advanced our femtosecond laser processing technique since the introducing two and half years ago, through the processes of metals, resins, glass, silicon, and ceramics. The followings are processing samples in several microns order and their enlarged photos observed with a microscope and an electron microscope.

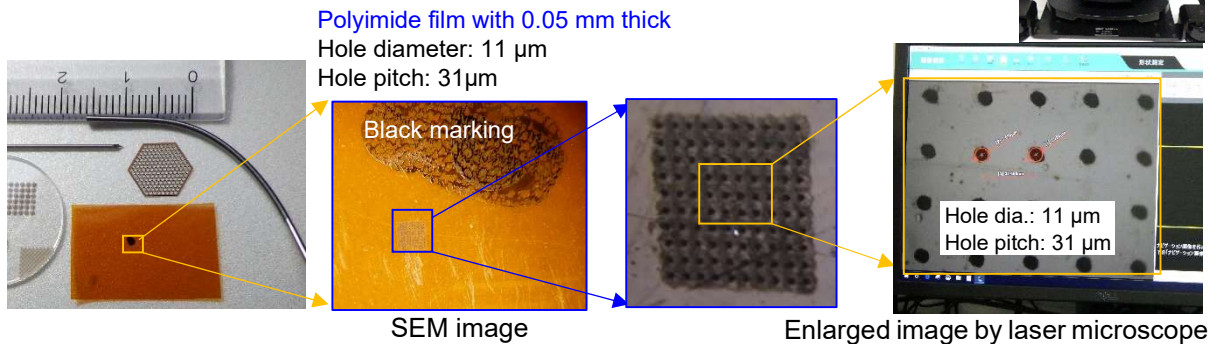
- The processing results can be observed **on the spot**.
- Material surface observation, element analysis, and dimension confirmation in nano order can be done **on the spot**.



2. Micro-hole making on a film

High precision processing which gives less thermal effect on a material and generates no-burr is possible.

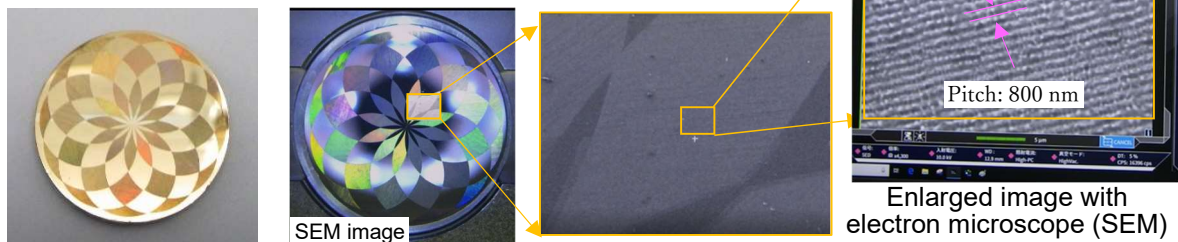
The sample on the photos below shows that high density micro holes with 10 μm in diameter made on a polyimide film. This process can be conducted on a small-diameter pipe as well as on a film.



3. Nanoperiodic structure on a stainless-steel sheet

Micro slits are made on the stainless-steel surface using the excitation period of a laser pulse. Changing the slit angles makes beautiful iridescent patterns on the disk.

Material: SUS304 with 35 mm in diameter
Slit width: 0.5 μm
Slit pitch: 0.8 μm
The number of slit: 1250/mm



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