

Activity Status of Femtosecond Laser Machines

■ Femtosecond laser processing

Femtosecond laser processing machine introduced at our Kyoto Plant in August 2017.

A wealth of experience has been realized not only in metallic materials but also in non-metallic materials.

Features are ultra-short pulse laser (1/1000 trillion) and extremely low thermal effect. Exterior of resin-based materials and glass-based materials with low melting points.

Effective on the surface. As long as it is a clear material, various micro-processing can be carried out inside the material.

This allows flexible movement and light characteristics to be imparted to the material.

Currently, we are searching for applications in the medical and bioscience fields.

Concretely, micro-nano using Lab on a chip (Semiconductor Control Technologies) As microchannels made on biodevices and μ TAS (glass substrates) POCT with an ultra-compact spatial analyzer (near the examinee) We are trying to develop this product in the field of clinical testing.

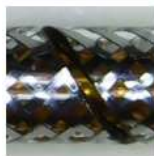
■ External view



■ Examples of work



ITOフィルム



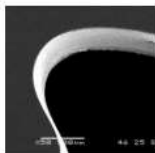
PoLyamide
SUS304



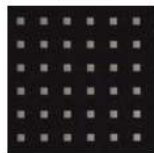
合成ダイヤモンド



窒化珪素



サファイヤガラス



モリブデン



ポリ乳酸



PoLyimide



SUS304



Ni-Ti



CFRP



Ni-Ti

■ Processed materials

[Metal system]
SUS304
SUS316 (L)
SUS630
Pure titanium
NiTi
Ti-4Al-22V
Ti-15Mo-5Zr-3Al
Molybdenum
Silicon nitride
Copper alloy system
Tungsten

[Non-metallic system]
Quartz glass
Sapphire glass
Polylactic acid (PLA)
Silicon wafer
PEEK
CFRP
PoLyimide
PoLyamide
ITO film
Synthetic diamond
ZrO₂ (zirconia)

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