

Prototyping Service

We will support your R&D work

Building demo and test systems including software

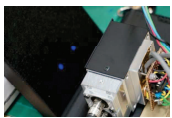
We can also provide dark box/room to detect weak light

Joint Development is also welcome

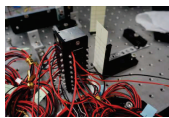
We can build imaging and laser system which fit your request.

optical fluorescent microscope, double sided optical microscope, small size optical characteristics measurement, special illumination system, and free space optics, etc. we can supply these system with control software and data analysis software.

Examples of prototyping

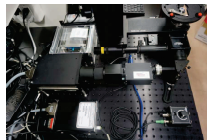


2ch Principle Optics (18mm pitch)



8ch Product model (9mm pitch)

Principle Prototype and Product model design
Covid-19_PCR optical engine



Original fluorescent microscope and laser illumination

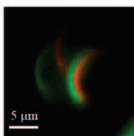
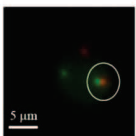


defect recognition (display side)



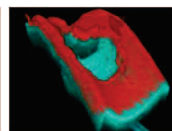
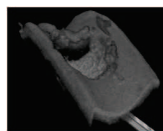
Laser illumination (circuit side)

Inspection and defect removal of smartphone display (double sided microscope)



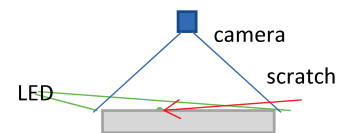
3D position detection by single image capturing
Synchronized moving of stage and camera

K. Kishima, Applied Optics 2011



OCT data Coloring results
Recognize cartilage from OCT data

Y. Kushida, et al, Journal of Orthopaedic research 2020



Scratch detection with oblique lighting
differentiation between scratch and milling trace

Our technology elements



CW-laser control



Pulsed-laser control

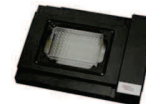
USB3camera



sCMOS camera



Camera control



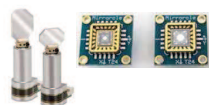
XY stage



Spectrum detection



Selection of Fluorescent filters



Beam scanning



Sensing acceleration and angle velocity



Lens design and preparation



PD and APD board

9mm pitch 2-APD /PD board (16mm width)

LED related technologies



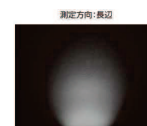
2ch LED Driving board (1.5A x 2)



8.5mm width LED board (1.5A)



Large power LED driving board (27A)

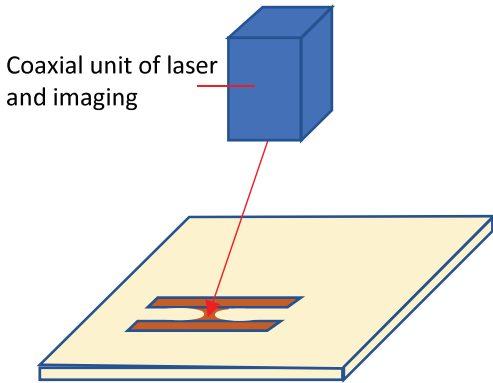


LEDs for oblique lighting

- We can also provide driving software and application software.

System examples which can be realized by our technologies of imaging, illumination, laser control, and data analysis

- Laser beam position is controlled by imaging data



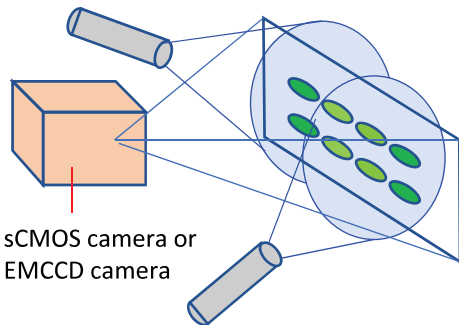
System examples

- laser cleaning, laser rust removal
- local melting, local adhesion
- removal of electrical short (laser repair)
- breaking of local transistor or broken pixel (laser repair)

Remarks

- Coaxial imaging and laser system makes it easy to use
- Image guide laser illumination reduces unnecessary laser illumination and reduces processing time

- Material / sample evaluation system with laser / LED illumination



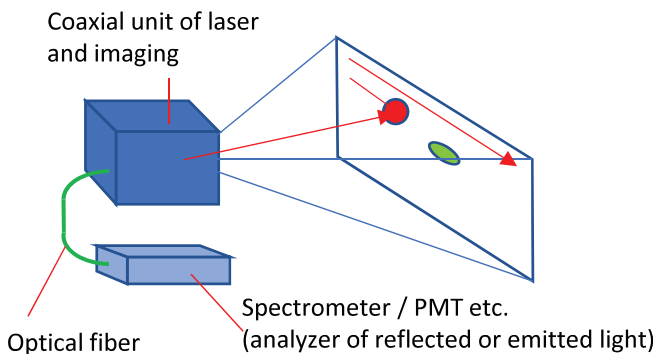
System examples

- Evaluation of fluorescent materials
- Evaluation of luminescent materials

Remarks

- We can choose adequate illumination methods, cameras, and fluorescent filters.
 - We can accept size limitation
- example: fluorescent material evaluation system with sCMOS camera
size: 500mm(W) x 163mm (H) x 244mm (D)
weight: 15.0kg (including cables and power unit)
observation area: 60mm x 60mm

- Utilization of reflected beam analysis with imaging data (confocal optics)



System examples

- Analyze 2D distribution of wavelength of reflected beam
gas or water leak detection system
- 2D TCSPC (time correlated single photon counting) system
obtain 2D distribution of fluorescent life time measurement

Remarks

- Adding imaging data by camera on 2D laser analysis
It makes easy to respond against leak detection alert
Coaxial imaging and laser system makes it easy to use
- We can supply easy to use confocal laser systems



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