

Super Inkjet printer (SIJ-S050)

◆ Super fine patterning

Droplet volume: 0.1 fl (femtoliter) ~ 10 pl (picoliter)

◆ Wide range of viscosity

Viscosity range: 0.5 ~ 10,000 mPa·s (non-heated)

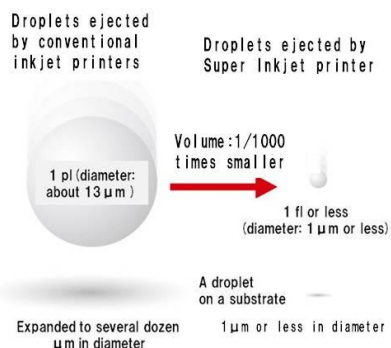
◆ Large variety of usable fluids



Technical summary

■ Super Inkjet technology developed by the National Institute of Advanced Industrial Science and Technology (AIST) allows the ejection of super-fine droplets much smaller than the droplets ejected by a conventional inkjet printer – 1/10 smaller in size and 1/1000 smaller in volume.

■ Super Inkjet printer is compact and can be placed on a desktop. The printer allows single micron scale patterns comparable to the photolithographic methods to be drawn directly under normal temperature and normal atmospheric pressure.

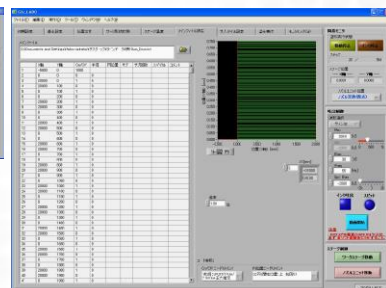
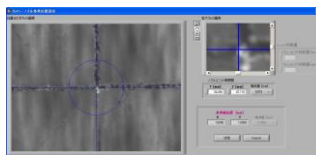


Usability

■ Software: Easily programmable for printing

■ Nozzle: Disposable, Low cost, easily-exchangeable

■ Camera: Real-time observation, You can see what's going on the substrate !



Specification

Type	SIJ-S050 (desktop system) ※includes PC, monitor and software
Data format	Vector form data
Patterning design	Arbitrary shape (dot, line, circle, polygonal shape)
Patterning area	50 × 50 mm
Number of nozzles	Single nozzle
Repeatability of work stage	±0.2 μm
Camera unit	Real-time observation camera × 1, Alignment camera × 1
Power	AC100-120V 50/60Hz ※A transformer is necessary by some areas.
Body size	610(W) × 770(D) × 650(H) mm
Weight	Approximately 100Kg
Customization	On your request.

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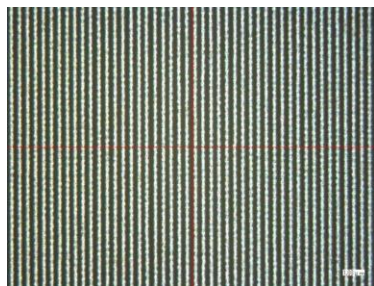
Example of Application

- Advanced technology
 - Printable electronics
 - Solar-cells
 - Touch panels
 - LEDs
- Alternative technology
 - Partial platings
 - Resists coating
 - Bumps forming
 - Dispenser devices
- Optics technology
 - Photomasks
 - Microlenses
 - Microfilters
- Biotechnology
 - Pipetting device of protein material
 - Cell scaffolds
 - Microarrays

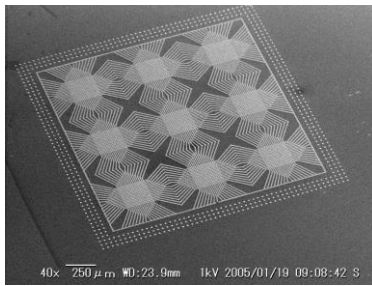
Features

- Droplet volume: 0.1fl (femtoliter) ~ 10pl (picoliter), Line width $0.5\mu\text{m}$ ~ several dozen μm **Smallest droplet volume !**
- Viscosity range : 0.5 ~ 10,000cps (non-heated) **Wide range of viscosity !**
- Large variety of usable fluids: Conductive ink, Insulating ink, Resist ink, UV ink, Solvent ink, Protein material, etc **No special ink !**

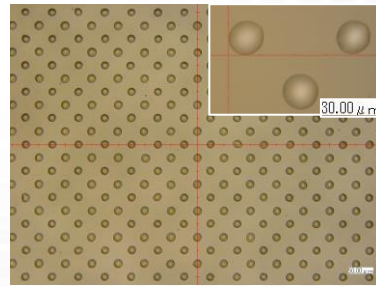
Patterning Example



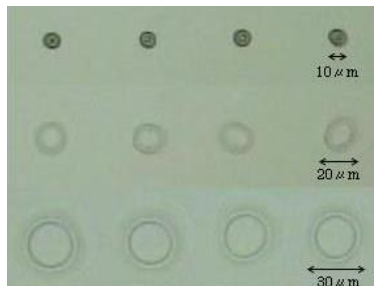
Silver ink, L/S = $1\mu\text{m}$



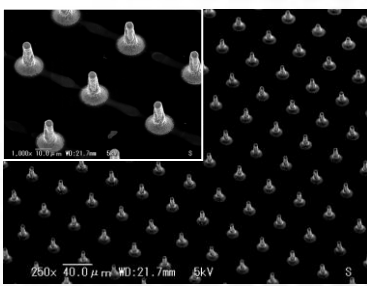
Circuit pattern



Microlens (resin ink)



Protein material (albumin)



Microbump
Diameter = $5\mu\text{m}$, Height = $20\mu\text{m}$



Micro QRcode ($750\mu\text{m} \times 750\mu\text{m}$)