

Super Inkjet printer (SIJ-S050)

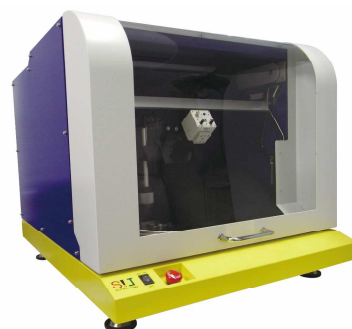
◇ Super fine patterning

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

◇ Wide range of viscosity

Viscosity range: 0.5 ~ 10,000 cps (non-heated)

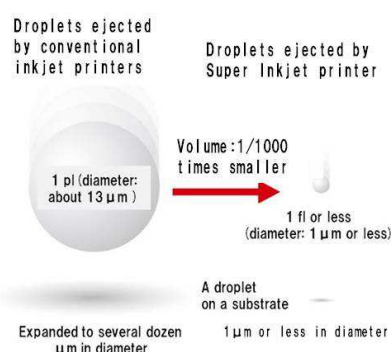
◇ Large variety of usable fluids



Technical summary

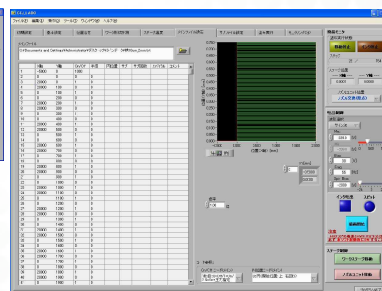
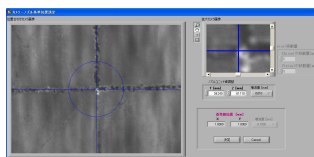
■ Super Inkjet technology developed by the National Institute of Advanced Industrial Science and Technology (AIST) allows the ejection of super-fine droplets much smaller than the droplets ejected by a conventional inkjet printer – 1/10 smaller in size and 1/1000 smaller in volume.

■ 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 × 50mm
Number of nozzles	Single nozzle
Repeatability of work stage	±0.2 μm
Fiducial camera	Real-time observation camera × 1, Alignment camera × 1
Power	AC100~120V 50/60Hz ※Including a transformer.
Body size	620(W) × 880(D) × 690(H) mm
Weight	Approximately 64Kg

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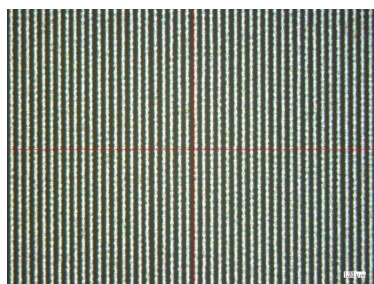
Example of Application

- 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

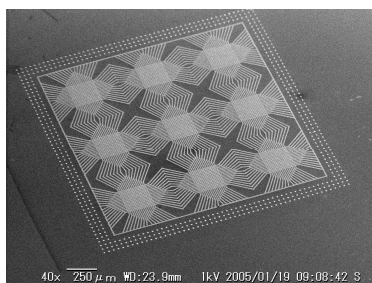
Features

- 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 !**

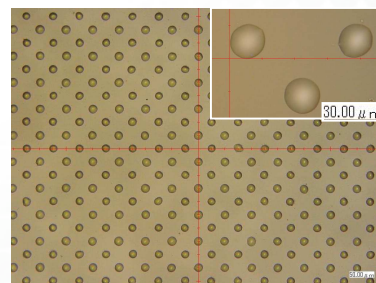
Patterning Example



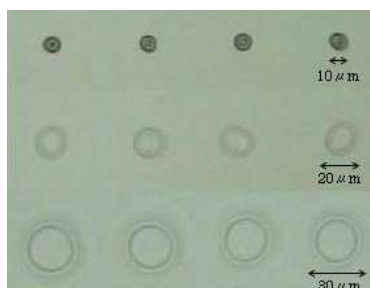
Silver ink, L/S= $1\mu\text{m}$



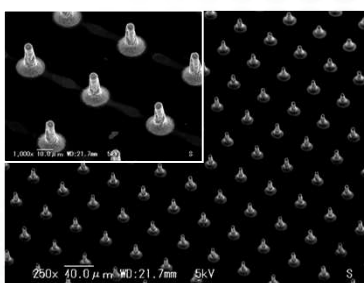
Circuit pattern



Microlens (resin ink)



Protein material (albumin)



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



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