

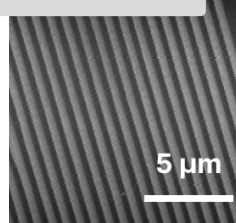
NAZCA



THE SMALLEST FOUNTAIN PEN IN THE WORLD

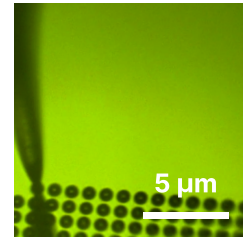


WAVEGUIDES



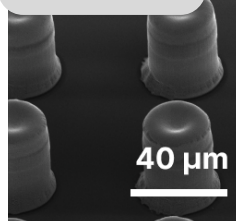
Ink: SU8 (Polymer)
Substrate: Glass

DISPLAY



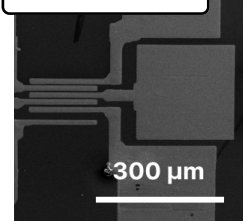
Ink: Quantum Dots
Substrate: Glass

PACKAGING



Ink: Silver
Substrate: SiO2

BIOSENSORS



Ink: Silver
Substrate: SiO2

Introducing HD Capillary Printing

Hummink's patented technology relies on a **unique direct nanoprinting method**. It is directly derived from AFM (Atomic Force Microscope) technologies, replacing scanning probes by nanopens that oscillates at a controlled frequency thanks to high precision electronics.

Inks with high viscosities (up to 100 000 cP), high concentrations, and various solvents, can be deposited with ease. No external source of energy is required. You can **deposit any material, on any surface, with a unique freedom of design**.



The deposition is **continuous** and achieved **by capillarity**. As simple as that.

The next tool your lab needs

NAZCA is a **table-top additive** equipment designed to print at the **micronic and sub-micronic scale**, with unprecedented resolution and precision to design and assemble new objects in the field of printed electronics.

The Nazca **software** is designed to **improve your prototyping workflow** and help you focus on what is really important.

CONTACT@HUMMINK.COM

Unique freedom of design

Any material

Available Inks

- Silver
- Gold
- Copper
- Polymers (SU8, PVA, PVP)
- Graphene
- Qdots
- Custom inks upon request

Any Surface

Compatible with all your substrates

- Wafers (Si, SiC, GaAS...)
- Glass
- Flexible substrate
- any substrate...

Automatically adapts to topography and roughness

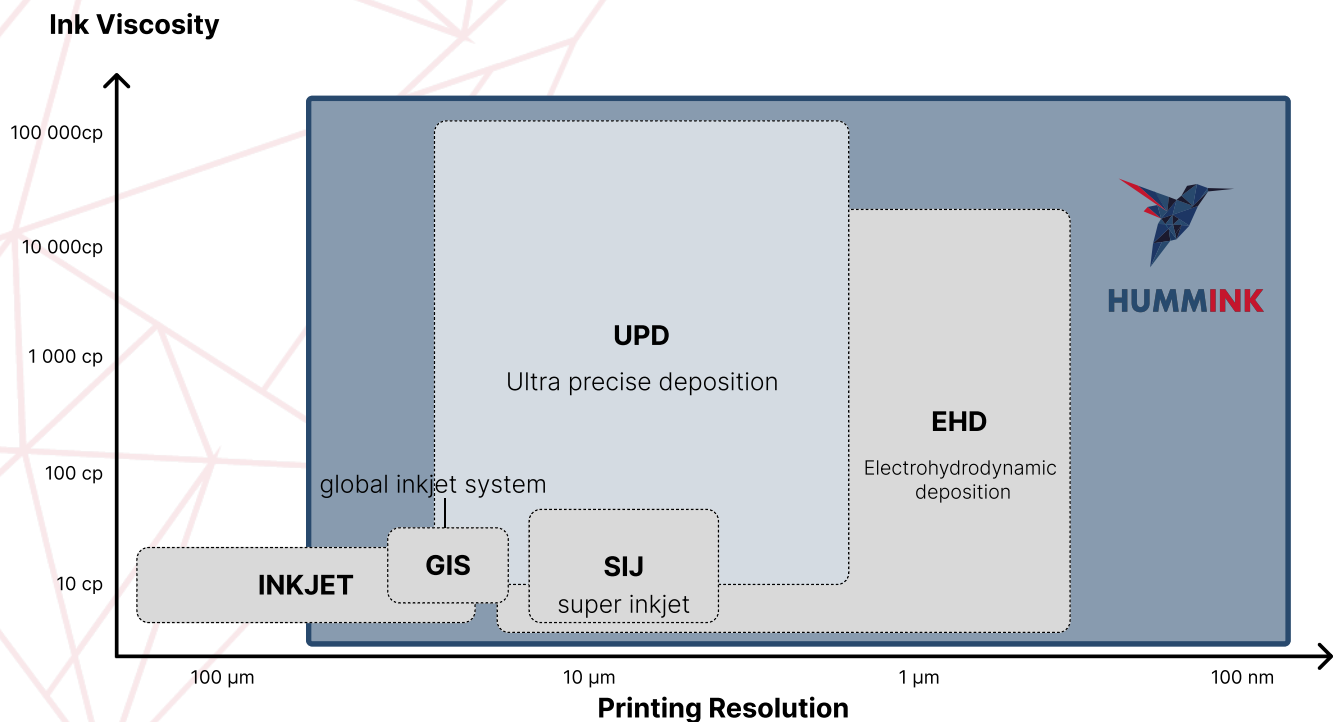
Printed Resolutions

Micronic & Sub-micronic Resolutions

Available capillaries:

- 50 μm
- 20 μm
- 10 μm
- 5 μm
- 2 μm
- 1 μm
- 750 nm
- 500 nm
- 100 nm
- On-demand size upon request

Adding a new dimension to printing



Technical Specifications

Printing

Printing Resolution 100 nm - 50 μm

XY Positionning precision 20 nm

Z-table Positionning Precision 5 nm

Minimum increment XY 1 nm

Table speed 350 mm/s

Printing speed up 10 mm/s

Maximum XY travel range 160 × 160 mm

Maximum Z-table travel range 250 μm

Maximum Substrate size 25 cm

Live video camera 1024p, 50 fps

Inks and capillaries

Viscosity range 0-100 000cp

Surface Tension Range

Depends on contact angle

Capillaries Borosilicate or Quartz

Capillary Diameter 50nm - 50 μm

Utilities

Software

Windows based, user friendly interface

Anti-vibration table Included (air pump)

Power 220-240V

Dimensions (hwxwd) 700×600×600

Weight < 100 kg

About Us

HumminK is the leading developer and supplier of a revolutionary nanoprining technology for the display, semiconductors and printed electronics industries. Spun-off from world-renowned research institutes, the company is based in France, with representatives all over the world (USA, Taiwan, Korea, Japan, Europe).

