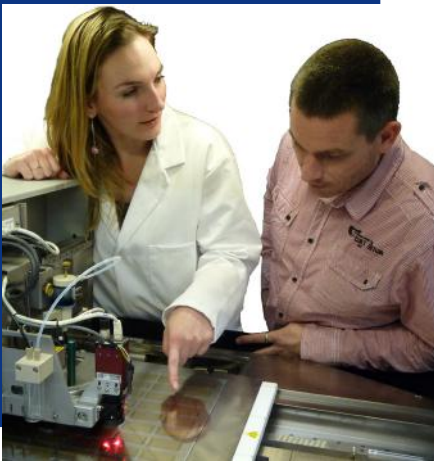




MEYER BURGER

PiXDRO Inkjet Technology

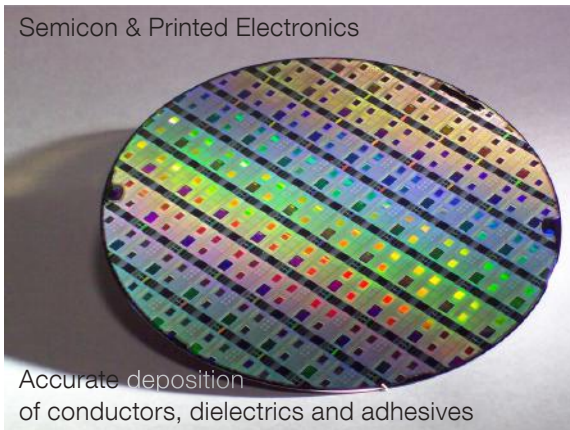
Inkjet printing systems, Application and Process knowledge

Functional inkjet printing is **an additive manufacturing** technology applying industrial inkjet heads to deposit functional materials. These functional materials can have **dielectric, conductive, adhesive, mechanical, optical or chemical properties**, and are printed pixel by pixel from a **digital** file.

Because of its precise drop placement and accurate drop volumes, functional inkjet printing find numerous applications in **printed and flexible electronics, displays, OLEDs, sensors, PCB, semiconductors, mems, chemical machining, 3D printing, PhotoVoltaics, life science and optics**. Inkjet printing is truly **additive** and can create very fine features needed for product miniaturization without the use of lithography. It is also fully **digital**, avoiding the use of masks or screens and offering extremely fast product-to-product changeover times.

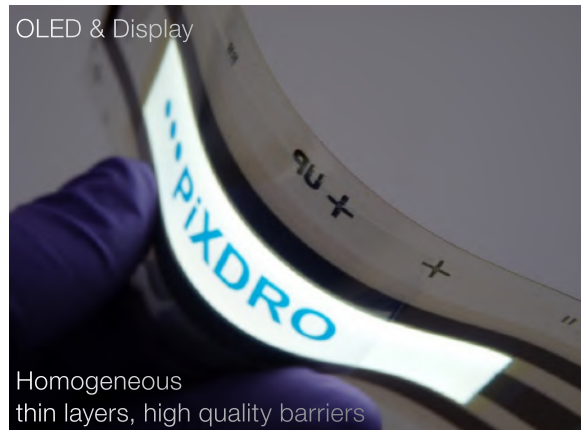
Application examples

Semicon & Printed Electronics



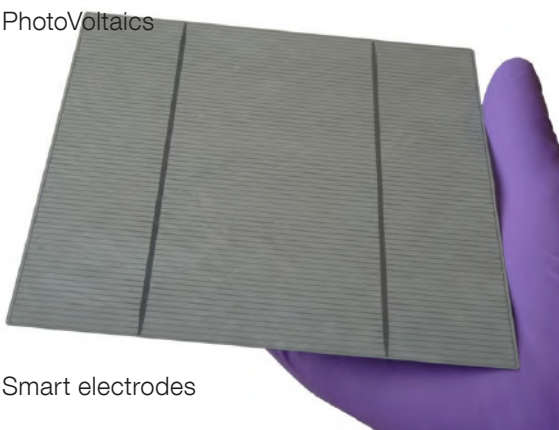
Accurate deposition
of conductors, dielectrics and adhesives

OLED & Display



Homogeneous
thin layers, high quality barriers

PhotoVoltaics



Smart electrodes

PCB & Chemical machining



Maskless digital fabrication

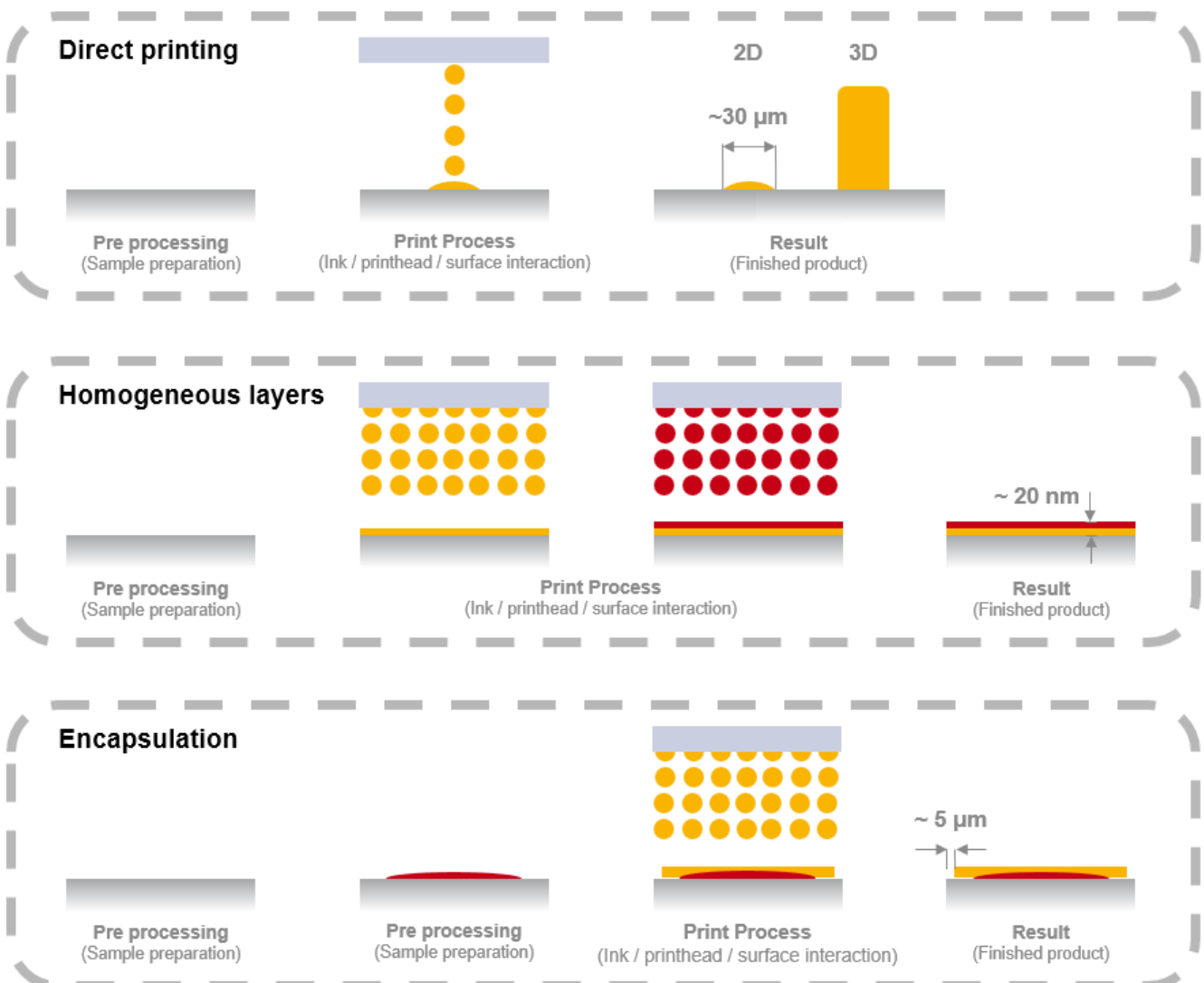


Accurate multi-layer and multi-function printing

As inkjet printing is compatible with a wealth of printable functional materials, it is a very versatile technology. It can be used for direct material deposition for **patterned** or **homogeneous** coatings. By printing multiple layers of material on top of each other, inkjet printing can also be used as a **3D printing** method. Additionally inkjet technology is excellent for direct printing of **etch or plating masks**.

Because industrial inkjet heads have a high number of parallel nozzles and print heads can be stacked into arrays, inkjet achieves a very **high throughput**. Inkjet is a non-contact deposition technology. This means that there is **no risk of damaging** fragile substrates, and more importantly can deposit on top of existing 3D topology and fill trenches and cavities, which is a challenge for traditional printing techniques like screen printing.

Inkjet printing processes, direct processing



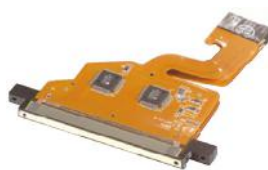


MEYER BURGER

Industrial printheads

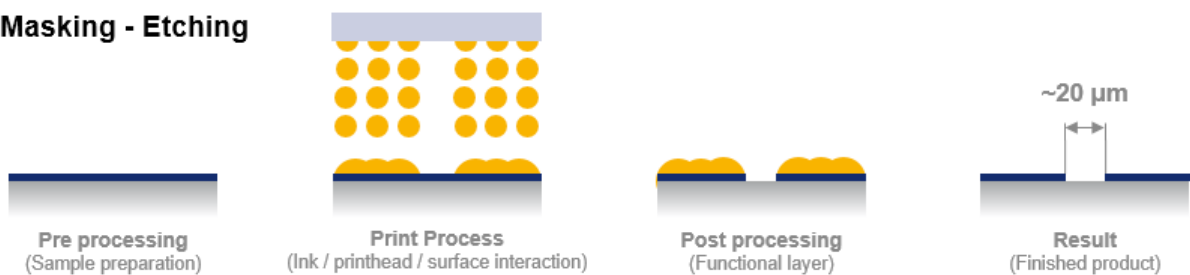
We have integrated various types of industrial print heads from different manufacturers. The overview below shows a number of popular heads with which we have serve both R&D and volume production applications.

Fujifilm Dimatix	Fujifilm Dimatix	Fujifilm Dimatix	XAAR	Konica Minolta
Cartridges	Samba G3L	S-class Q-class SE3 SX3	1002 1003	512 1024(i)
16 nozzles	2048 nozzles	128 256 nozzles	1000 nozzles	512 1024 nozzles
Volume: 1 10 pL	Volume: 2.5 pL	Volume: 10 - 90 pL	Volume: 6 - 42 pL	Volume: 4 - 80 pL

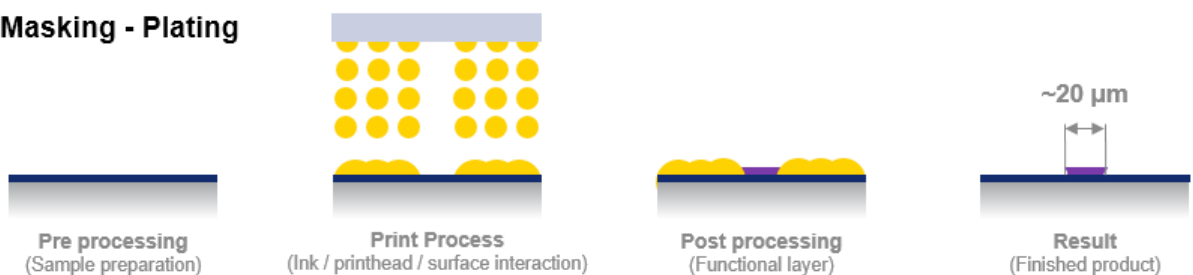


Inkjet printing processes, indirect processing

Masking - Etching



Masking - Plating



Masking - Lift off

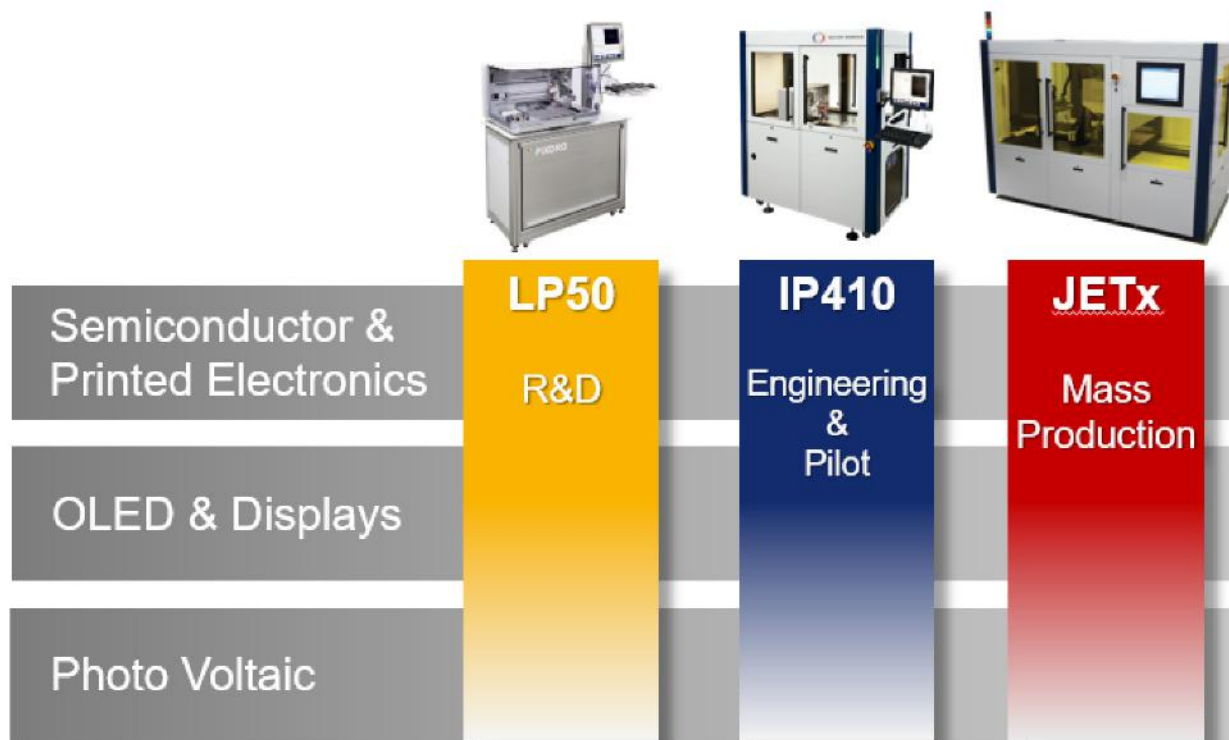




MEYER BURGER

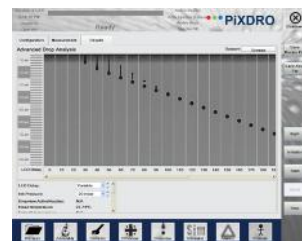
PiXDRO systems

The PiXDRO systems are manufactured on the basis of a modular design. This allows us to build both R&D and mass production systems around the same core modules. The PiXDRO LP50 and IP410 excel in flexibility and process control, offering fast product development and time-to-market. The JETx production tools are designed for optimum throughput, cost of ownership and reliability in 24/7 operation.



Features and options

- Compatible with solvent based, aqueous, hotmelt and UV curable inks
- Bulk ink supply, ink recirculation
- Automated substrate handling
- Inline UV, photonic and NIR pinning / curing
- Glovebox integration for inert environment



PiXDRO services

- Advanced training in periodic classes or customer specific: basic operator training, advanced scripting or print strategy training, etc.
- Inkjet Printing Consultancy; e.g. development of customer specific print strategies
- Process support, e.g. by using PiXDRO fully equipped print lab

PiXDRO