NOTION SYSTEMS

DMP-2850

WE SCALE INKJET FROM LAB TO FAB

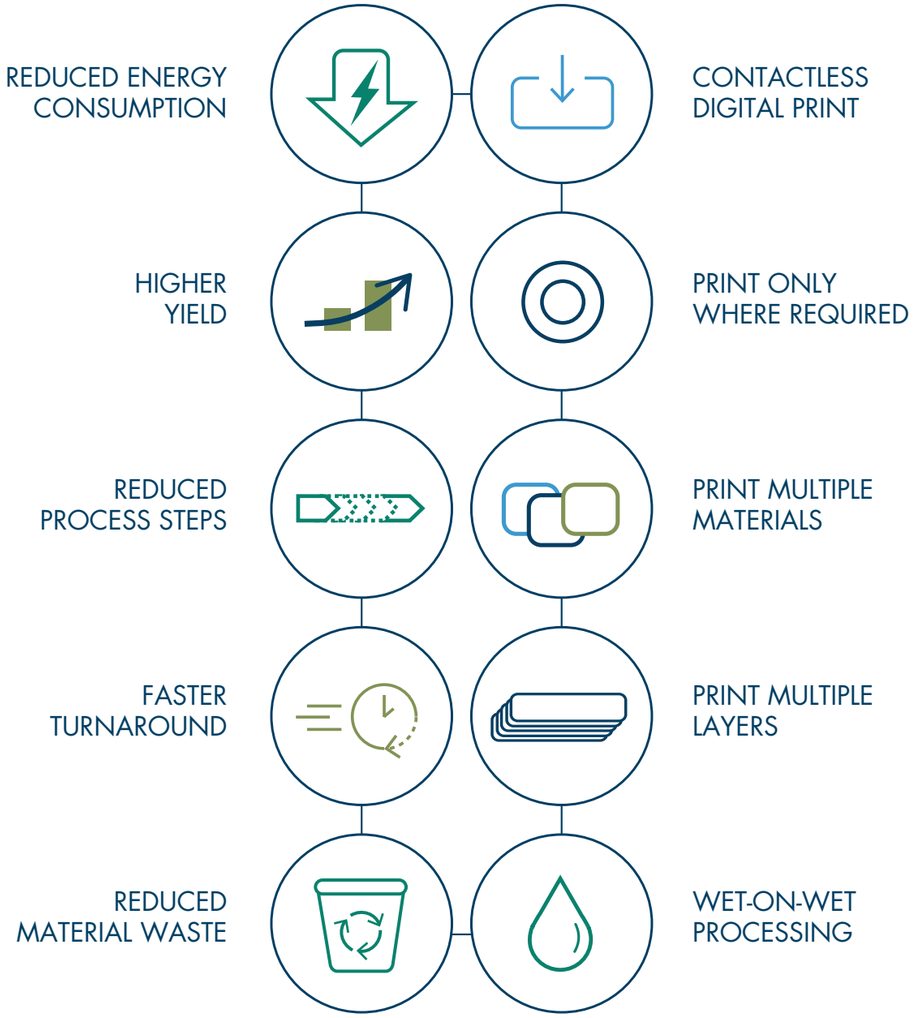
The DMP-2850 Platform

The Dimatix Materials Printer (DMP) is a benchtop materials deposition system designed for micro-precision jetting a variety of functional fluids onto virtually any surface, including plastic, glass, ceramics and silicon, as well as flexible substrates from membranes, gels and thin films to paper products.
A complete turnkey system, the DMP facilitates developing and testing manufacturing processes and product prototypes. It also can be used for prototyping of products from flexible circuits, RFID tags and displays to DNA arrays and wearable electronics. By employing inexpensive exchangeable cartridges that researchers can fill with their own fluid materials, the DMP system minimizes waste of expensive fluid materials, thereby eliminating the cost and complexity associated with traditional product development and prototyping.

Advantages of Inkjet Printing

Inkjet is a non-contact, digital printing technology which creates fine structures of 30 microns and below. The fully digital non-contact printing enables wet-on-wet processing without the need for masks or screens.

Inkjet is used to replace established subtractive process sequences and reduces waste and energy consumption, which makes electronics production more economical and ecological.



Main Features

- Flat substrate, xyz stage, inkjet deposition system
- Low cost, user-fillable piezo-based inkjet print cartridges
- Built-in drop jetting observation system
- Fiducial camera for substrate alignment and measurement
- Variable jetting resolution and pattern creation PC-controlled with Graphical User Interface (GUI) application software
- Capable of jetting a wide range of fluids
- Heated vacuum platen
- Cartridge cleaning station
- Includes software

Mechanical System

Printable area:	Substrate < 0.5 mm thickness: 210 mm x 315 mm (8.27 in x 12.4 in) Substrate 0.5 - 25 mm thickness: 210 mm x 260 mm (8.27 in x 10.2 in)
Repeatability:	± 25 µm (± 0.0001 in)
Substrate holder:	Vacuum platen Temperature adjustable; ambient to 60° C (140° F)
Weight (approx.):	50.7 kg (111.8 lbs)
Power:	100-120/200-240 VAC 50/60 Hz 375 W maximum
Operating range:	15-40° C (59-104° F) at 5-80% RH non-condensing
Altitude:	Up to 2000 m
Safety and EMC compliance:	Safety: NRTL Certified to EN 61010-1, UL 61010-1, CSA 22.2 No.61010-1 EMC: EN61326-1 Class A, FCC Part 15 Class A

Control PC and Application Software

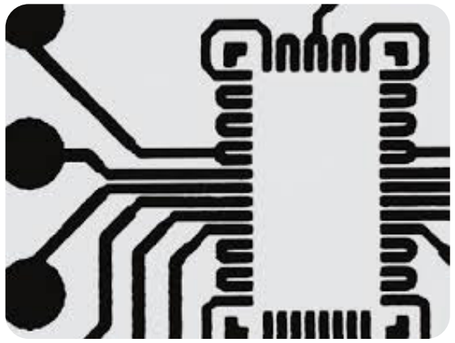
- Pre-loaded patterned templates
- Pattern preview
- Editors: Pattern, piezo drive waveform, cleaning cycle, substrate setting
- Bitmap (1 bit) files accepted

Replaceable Items

- Print cartridge with one-time user-fillable reservoir
- Cleaning station nozzle blotting pad
- Drop watcher fluid absorbing pad

Fiducial Camera

- Allows substrate alignment using reference marks
- Allows positioning a print origin or reference point to match substrate placement
- Provides measurement of features and locations
- Provides inspection and image capture of printed pattern or drops
- Provides cartridge alignment when using multiple cartridges
- Allows matching drop placement to previously patterned substrate



Fiducial camera view

Options

Granite table

UV curing light

Glove box integration

Installation & training

Process support

Dimatix Materials Cartridge

The Dimatix Materials Cartridge is a cartridge-based inkjet printhead used with the DMP. Based on FUJIFILM Dimatix's proprietary Silicon MEMS technology, the Dimatix Materials Cartridge is designed for high-resolution, non-contact jetting of functional fluids in a broad range of applications. The cartridge can deposit features to fabricate products such as organic thin-film transistors (TFTs) and printed circuits. In biotechnology, the Dimatix Materials Cartridge allows researchers to closely pack large numbers of elements in DNA arrays, to permit more accurate and efficient analyses.

Details

Type:	Piezo-driven jetting device with integrated reservoir and heater
Usable ink capacity:	Up to 1.5 ml (user-fillable)
Materials compatibility:	Many water-based, solvent, acidic or basic fluids
Samba® cartridge:	12 nozzles, single row, 75 DPI 2.4 pL drop volume, 30 µm dot size (results may vary)

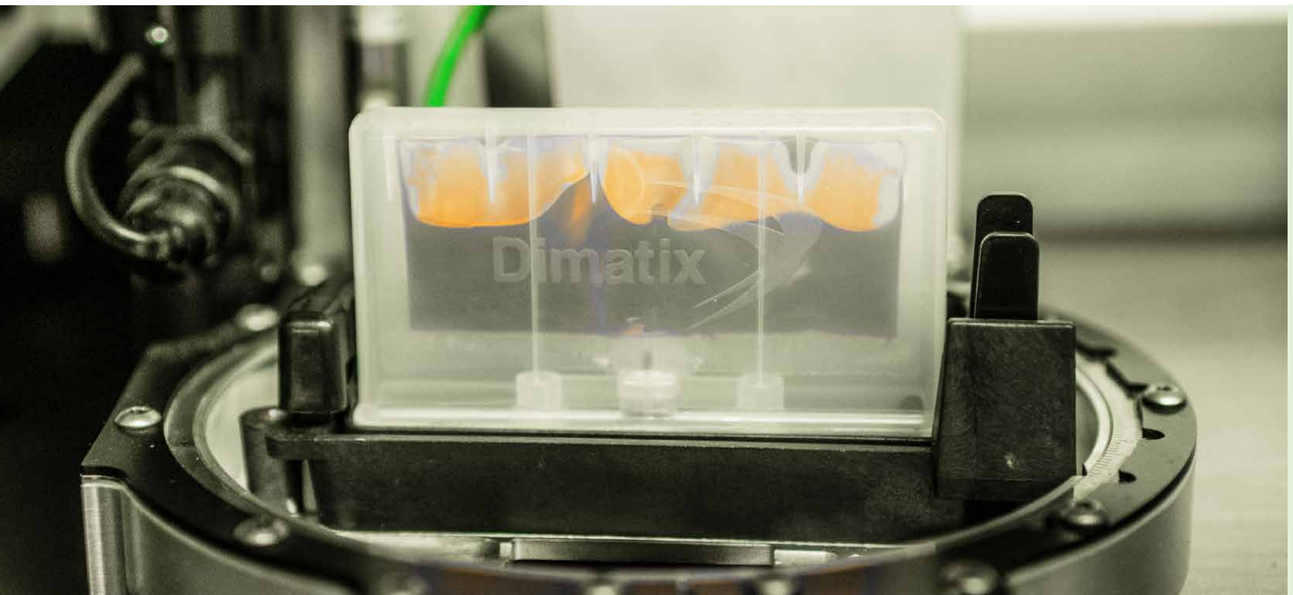
Process Development

Process development helps optimize various parameters such as

- Ink formulation
- Printhead selection
- Substrate choice
- Substrate preparation
- Printing speed
- Image resolution

By systematically adjusting these parameters, process development can enhance the **printing quality, efficiency, and reliability of inkjet printing**.

This is particularly important for industrial applications, where consistent and high-quality printing is required for mass production. Additionally, process development can help **minimize the environmental impact of inkjet printing** by reducing ink and energy consumption and waste generation.



NOTION SYSTEMS

Headquarter

Notion Systems GmbH
Carl-Benz-Straße 22a
68723 Schwetzingen
G E R M A N Y

+49 6202 57877-0
+49 6202 5787799

sales@notion-systems.com
www.notion-systems.com

ECO FRIENDLY

THE FUTURE OF ADDITIVE MANUFACTURING

LAB EQUIPMENT

INDUSTRIAL SOLUTIONS

PLATFORM ENGINEERING

SERVICE

PROCESS

INKS

DMP-2850 | 03.2023