COMPANY BROCHURE

NOTION SYSTEMS

DRIVING INNOVATION IN MICROELECTRONIC PRODUCTION

Headquarter Schwetzingen / Germany

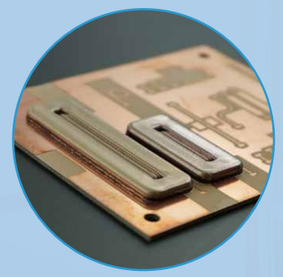

Site Singen / Germany

NOTION SYSTEMS GMBH -
SHAPING THE FUTURE OF HIGH-TECH MANUFACTURING

Notion Systems GmbH is a pioneering provider of advanced equipment solutions for the electronics, display, and semiconductor industries. With a focus on redefining the boundaries of microsystems and semiconductor manufacturing, we integrate world-class automation, precision photolithography, and state-of-the-art industrial inkjet printing technologies into our product portfolio.

Headquartered in Schwetzingen, Germany, with an additional site in Singen, we serve a robust and expanding customer base across Europe, Asia, and North America. Our commitment to innovation, reliability, and engineering excellence positions us as a trusted partner for next-generation manufacturing.

MARKETS

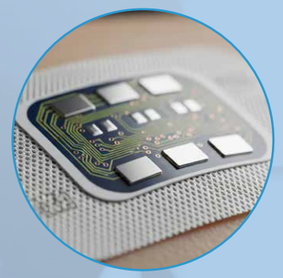

3D


DISPLAY


ELECTRONICS


FLAT PANEL


GLASS


MEDICAL


OLED


SEMICON

APPLICATIONS

Photolitography and wet processing tools:

- Resist coatings
- Temperature processes
- Priming
- Temporary bonding / debonding
- Etching and cleaning

Inkjet printing of:

- Conductives
- Dielectrics (e.g. solder mask)
- Etch resists, resists
- Adhesives

SEMICONDUCTOR PROCESSING TOOLS

At the forefront of precision engineering, the Notion process equipment is designed to deliver exceptional performance in the application of resists using cutting-edge spin coating and spray coating technologies. Whether working with silicon wafers or glass substrates, the systems ensure uniform coverage, high throughput, and reliable results—meeting the demanding standards of semiconductor and photonics industries.

Photolithography processing systems used in industries such as semiconductors, medical and biomedical, micro OLED, microsystems (MEMS), glass and optical components.

n.unixx-SERIES - semi-automatic systems for lab applications

- All modules are available as stand-alone or bench mounted configurations
- Base frame design allows various process modules configurations
- Round wafer up to Ø300 mm (Ø12 inch)
- Square substrate size up to 230 x 230 mm (9 x 9 inch)

SPIN COATER

Applications:
Spin coating with Covered Chuck Processor (CCP) or open bowl

SPRAY COATER

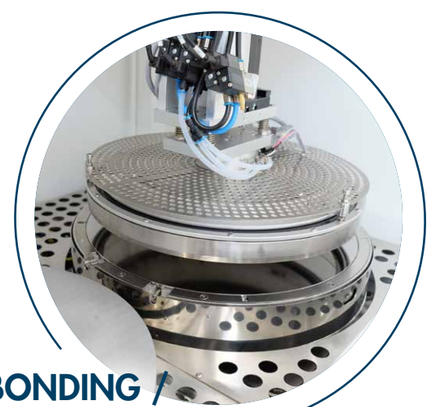
Applications:
Spray coating for all topographies and shapes

HOTPLATES

Applications:
Softbake (pre-bake), hardbake, HMDS: vapor priming, vacuum drying, coolplates

WET PROCESS

Applications:
Developing, etching, cleaning, drying



BONDING / DEBONDING

Substrates:
Glass, Saphire, Silicon, Ceramic, other materials on request

INKJET PRINTING

High precision inkjet printing for any substrate type or wafer size

n.varixx-SERIES - automatic combined cluster systems

- Flexible configuration of processing modules
- Handling thin, standard or bonded wafer (Si, glass & others)
- Round wafer up to Ø300 mm (Ø12 inch)
- Square substrates size up to 230 x 230 mm (9 x 9 inch)

Optional sub-systems; wafer flipper, PR dispense system (pumps, syringe, CPD) and media supply cabinets with various canister designs.

Types:
n.varixx 80X - up to Ø200mm with variable number of process modules

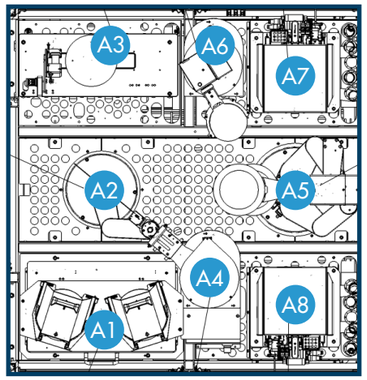
n.varixx 120X - Ø300mm with variable number of process modules

Applications:
- Spin coater
- Spray coater
- Hotplate / coolplate
- Developer
- Bonding / debonding

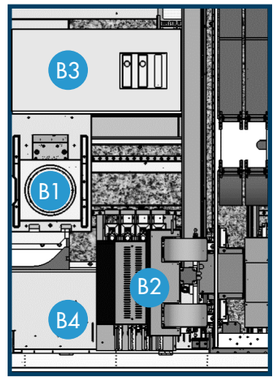
INKJET SOLUTIONS FOR THE SEMICONDUCTOR & OPTICS INDUSTRY

The n.jet semicon plattform offers a wide range of processes in the optical and semiconductor industry. The systems comes with integrated handling systems for any substrate type or wafer size, and state-of-the-art pre- and post-processing modules.

CLUSTER TOOL



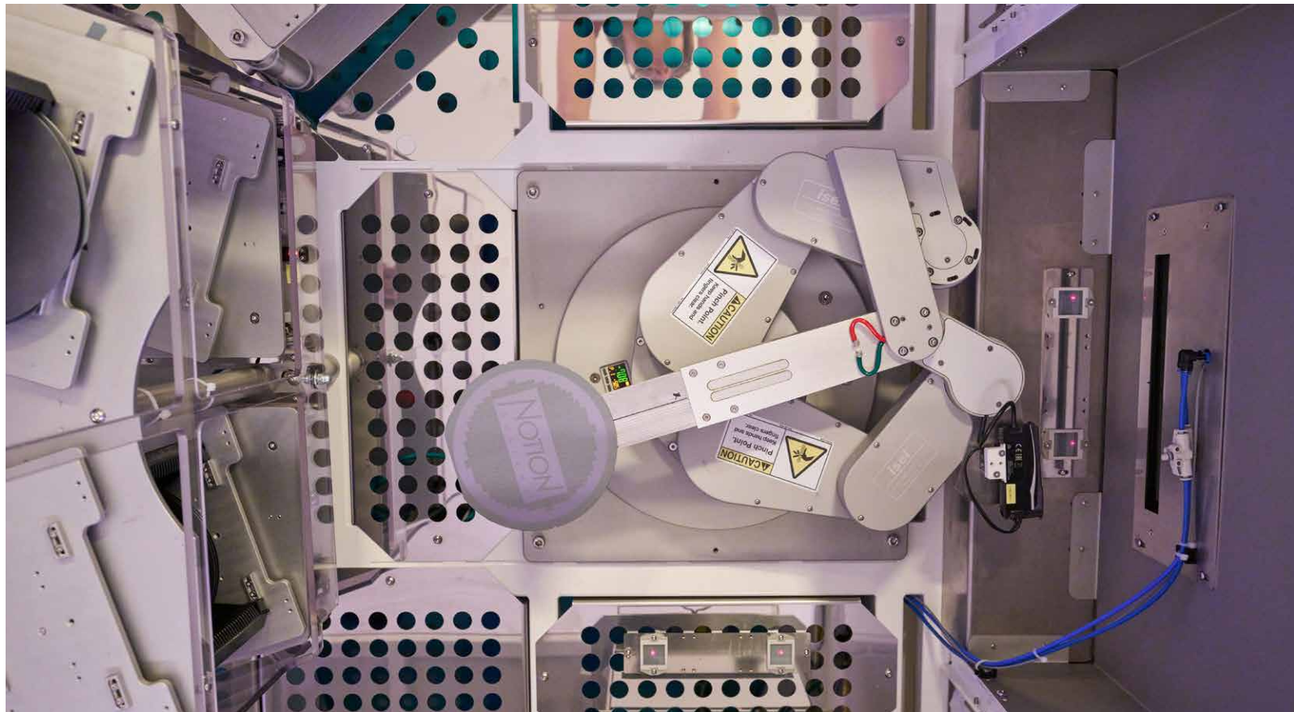
A: Loading & post-processing



B: Inkjet

A1 - Wafer cassettes I/O
A2 - I/O robot (A1, A3, A4)
A3 - Pre-alignment & OCR
A4 - Wafer transfer buffer
A5 - Process robot (A4, A6, A7, A8, B1)
A6 - Flipping unit
A7 - Post process tower I (HP & UV stack)
A8 - Post process tower II (HP & cool plates stack)

B1 - Inkjet print stage
B2 - Inkjet process unit
B3 - Maintenance area I
B4 - Maintenance area II



n.chemixx-SERIES - wet processing systems

From agile semi-automatic R&D systems to fully automated cassette-to-cassette platforms for high-volume production, the n.chemixx series covers the full spectrum of wet processing needs. Designed for flexibility, precision, and scalability, our solutions empower innovation and efficiency across research labs and industrial manufacturing environments alike.

SEMI-AUTOMATIC SYSTEMS

n.chemixx - up to Ø12" / 9"x9"

Applications:
Photomask or wafer
etching & cleaning

AUTOMATIC COMBINED CLUSTER SYSTEMS

n.chemixx 80X
up to Ø8" (200 mm)

Applications:
Wet etching. cleaning, lift-off, stripping

n.chemixx 120X
up to Ø12" (300 mm)

Applications:
Wet etching. cleaning, lift-off, stripping

n.maxx-SERIES - systems for large substrates

Engineered for performance and scalability, our n.maxx series supports substrates up to 1.300 x 1.300 mm (51 x 51 inch), offering a full spectrum of processing systems —from semi-automatic platforms for R&D to fully automated combined cluster systems for high-throughput production.

SEMI-AUTOMATIC SYSTEMS

n.maxx C
Applications: Spin coating with CCP

n.maxx H
Applications: Hotplate, coolplate

n.maxx W
Applications: Wet cleaning, etching

AUTOMATIC COMBINED CLUSTER SYSTEMS

n.maxx - up to Ø78"

Applications:
- Spin coater
- Spray coater
- Hotplate / coolplate
- Developer
- SmartEBR
- With handling system

INKJET PRINTING SYSTEMS FOR FUNCTIONAL MATERIALS

With decades of expertise in inkjet printing of functional materials, we cover all steps for scaling processes from lab to industrial production.

Our innovative inkjet production solutions for functional materials have contributed to important success in the high-tech industry - from innovative new OLED displays to perovskite-based solar cells.

Depending on the application and customer requirements, we are able to offer the right production solution and various options such as automation or different types of pre- & post-treatment options.

Notion Systems offers also various types of laboratory equipment for testing new funktional printing inks, substrates and printing strategies to develop new applications. We are the right partner no matter the application, development goal or budget. We have every system in use ourselves, which allows us to give accurate field support and real world training.

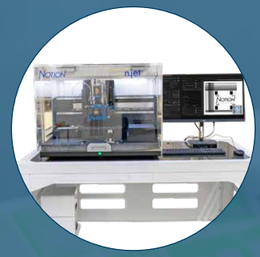
n.jet display

LABORATORY EQUIPMENT

n.jet lab

The modular design of the n.jet lab allows adapting the platform to your exact specification with industrial grade components including full automation and environmental control.
Compatible with all major printheads manufacturers, that n.jet lab allows the simultaneous use of multiple inks with fully automated printhead cleaning solutions available.
A dropwatch system can be fully integrated into the platform making the visualization and analysis of the drop formation process possible.
These factors make the n.jet lab the primary option for scaling your process from lab to fab.

n.jet evo



The n.jet evo is the most precise inkjet printer designed specifically for the development of new applications in the field of functional materials. It is primarily used by material developers, in research and development, as well as at universities and other research institutions. Its applications enable the advancement of innovative solutions in areas such as semiconductor packaging, printed circuit boards, printed electronics, photovoltaics, display technology, and biomedicine.

n.jet EHD powered by Scrona

Electrohydrodynamic (EHD) printing is a new high resolution printing technology enabling maskless, direct-write, 3D, non-contact, conformal and additive patterning at the nanoscale with a variety of ink systems and materials.

Scrona develops multi-nozzle MEMS printheads with ultra-high printing resolution capabilities lower than 5 µm. This R&D tool is targeted to advanced development labs in various fields of micro-fabrication and digital additive manufacturing.

INDUSTRIAL SOLUTIONS

n.jet display

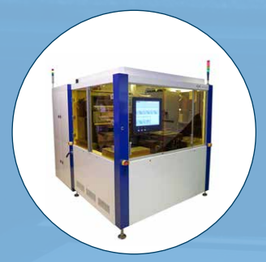
The n.jet display series prints functional layers in various steps of display production, and for various display technologies. This includes rigid, flexible, OLED, QLED, and LCD displays. In addition to its unparalleled precision, the system complies with highest demands on process environment and process stability.

Specifically developed features, like the no.mura printing technology solve long-standing challenges of the industry and enable an efficient, additive use of the valuable materials involved in manufacturing of next generation displays.

n.jet soldermask

Replacing the current subtractive process chains with additive process steps in the production of electronics, has been one of the founding ideas of Notion Systems. It increases production efficiency and reduces waste. On top of this, the n.jet electronics series increase process stability and enables new features not found in today's electronics production. This pushes the limits of current production technology for rigid and flexible circuitry on most substrate material.

n.jet semicon



The n.jet semicon series offers a wide range of processes for frontend, as well as backend processes in the semiconductor industry. The system comes with integrated edge handling for any substrate type or wafer size, integration with the MES system (e.g., SECS-GEM), and state-of-the-art pre- and post-processing modules.

Our nozzle replacement strategies and our full process control improve yield and process stability. The system can be combined with high-precision dispensing units that further enlarge the window of processable materials within the same platform.

AFTER SALES SERVICE

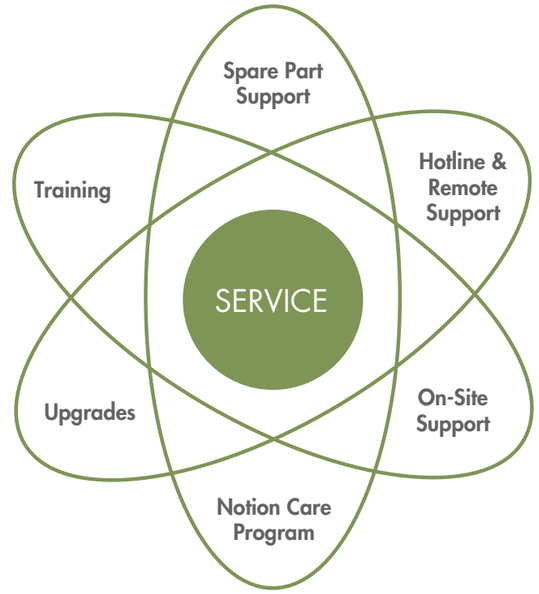
Solution provider for the entire service life of your inkjet printing system

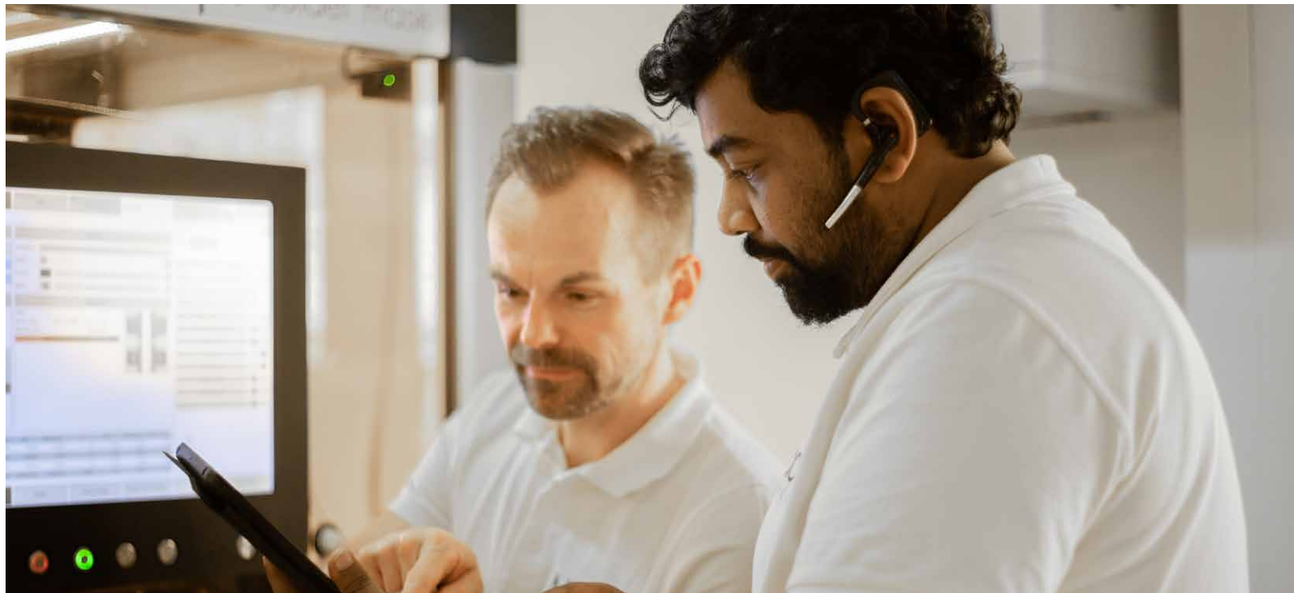
To round off our global offering of high performance inkjet printing systems and having world leading inkjet expertise, Notion Systems offers professional, reliable and a comprehensive service program.

Service makes the difference

An inkjet printing system is not just about the device, the ink and the printing process. In addition to the outstanding technical features of the printing systems, Notion's after sales service ensures maximum availability, the highest performance and the best print quality of your system and there-fore the satisfaction of your customers. It is our mission to have a genuine partnership with our customers and to support achieving our customers goal for every step along the way.

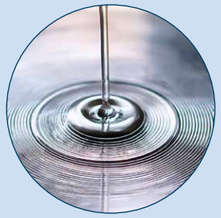
Discover the diverse possibilities of our service product portfolio on the following pages and create your own individual service package.



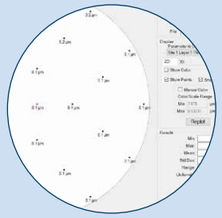


R&D & APPLICATION CENTER SINGEN

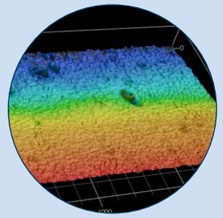
At our Singen lab location, we offer a range of R&D services. Our research focuses on complex functional materials and structures, as well as the physical and chemical principles behind integrated micro- and nanosystems.



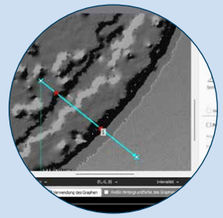
WAFER PREPARATIONS FOR LITHO PROCESSES



COATING THICKNESS MEASUREMENTS



3D SURFACE MEASUREMENTS AND ANALYZE



FILM THICKNESS AND UNIFORMITY ON BONDED WAFERS

PROCESS DEVELOPMENT AND SUPPORT

With our extensive knowledge of applications and testing systems, we provide customized solutions to optimize your processes. Our expertise and innovative strength help our customers increase productivity, product quality, and sustainability in their applications.

Process developments in coating production, application, characterization, and surface analytics can significantly improve functionality and quality of production processes.

NOTION ADVANCED APPLICATION CENTER SCHWETZINGEN

The Notion advanced application center in Schwetzingen plays a crucial role, as it offers several important functions and benefits for research, development and industrial practice.

CUSTOMER DEMONSTRATION

KNOWLEDGE TRANSFER AND TRAINING

TECHNOLOGY DEVELOPMENT AND INNOVATION

TEST ENVIRONMENT FOR INDUSTRIAL PRODUCTION

PROTOTYPING, BENCHMARKS AND TESTING

Our application center is equipped with the latest n.jet systems and offers a wide range of possibilities for customer developments. The systems are configured with different inks and printheads to match our customers' requirements. Additional test equipment ensures that the printed structures can be measured and tested immediately after printing.

NOTION
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ECO Friendly

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