A close-up, high-magnification photograph of a microchip. The chip's surface is covered in a dense grid of small, square, gold-colored pads. In the foreground, a series of larger, gold-colored pins or leads are visible, arranged in a regular pattern. The background is dark and slightly blurred, showing more of the chip's intricate circuitry. The overall lighting is dramatic, highlighting the metallic textures and the precision of the manufacturing process.

ATLANT 3D

+ CHIP SURGERY

REVOLUTIONIZING CHIP REPAIR
WITH DALP® TECHNOLOGY

DRIVING ADVANCED TECHNOLOGY INNOVATION.
ATOM BY ATOM.

+ INNOVATIVE SOLUTIONS FOR MICROFABRICATION CHALLENGES

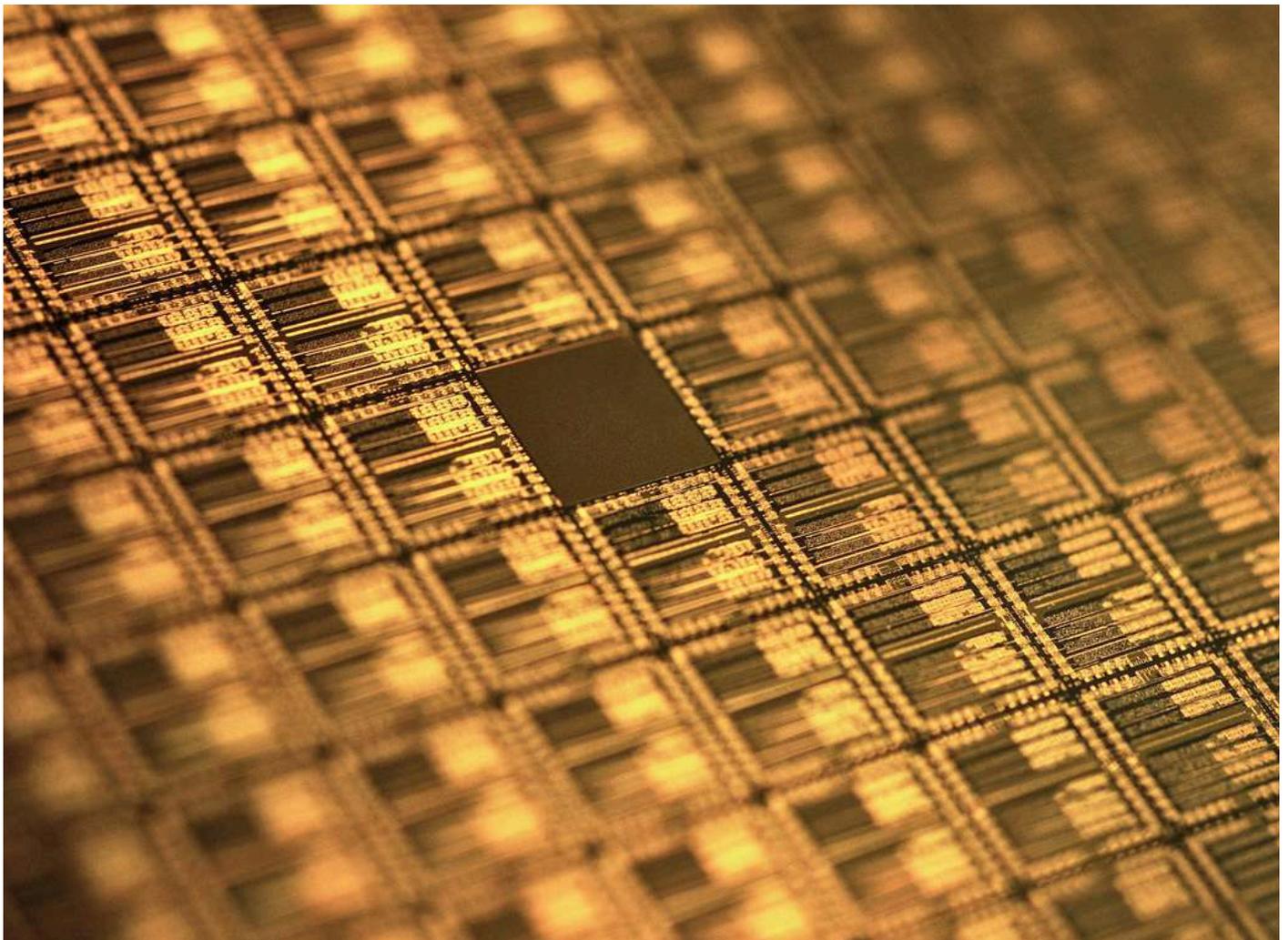
PRECISE, EFFICIENT, AND RESOURCE-SAVING REPAIRS



In the realm of microfabrication, even minor deposition errors can lead to significant setbacks.

ATLANT 3D's DALP® technology offers a groundbreaking solution to these challenges, allowing for rapid and precise "**chip surgery**" to correct deposition issues without restarting the fabrication process.

- **Rapid Issue Identification:** Our advanced scanning and inspection capabilities quickly identify deposition irregularities.
- **Seamless Corrections:** Using DALP®, we can deposit new material directly onto the affected areas, ensuring continuous and reliable deposition.
- **Versatile Applications:** Suitable for various materials and applications, from conductive paths to optical coatings.

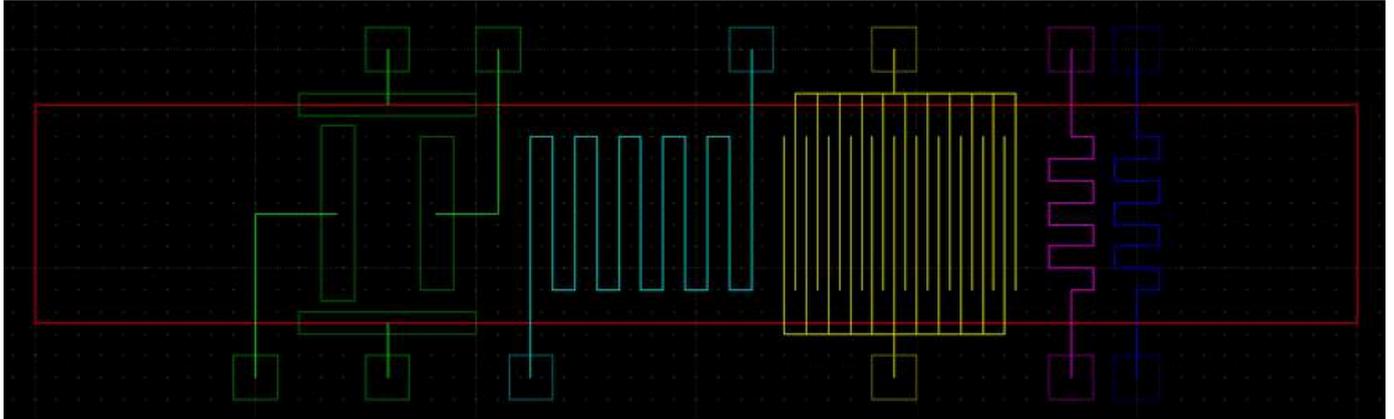


+ CASE STUDY: PRECISION PLATINUM DEPOSITION



REVOLUTIONIZING MICROFABRICATION WITH DALP® AND NANOFABRICATOR™

In a recent ATLANT 3D lab demonstration, we showcased the flexibility and precision of our technology by depositing platinum across microfluidic channels for sensor integration. Post-deposition inspections revealed minor irregularities, which were swiftly corrected using our DALP® technology. This efficient "chip surgery" ensured the sensors' functionality without any process interruption.



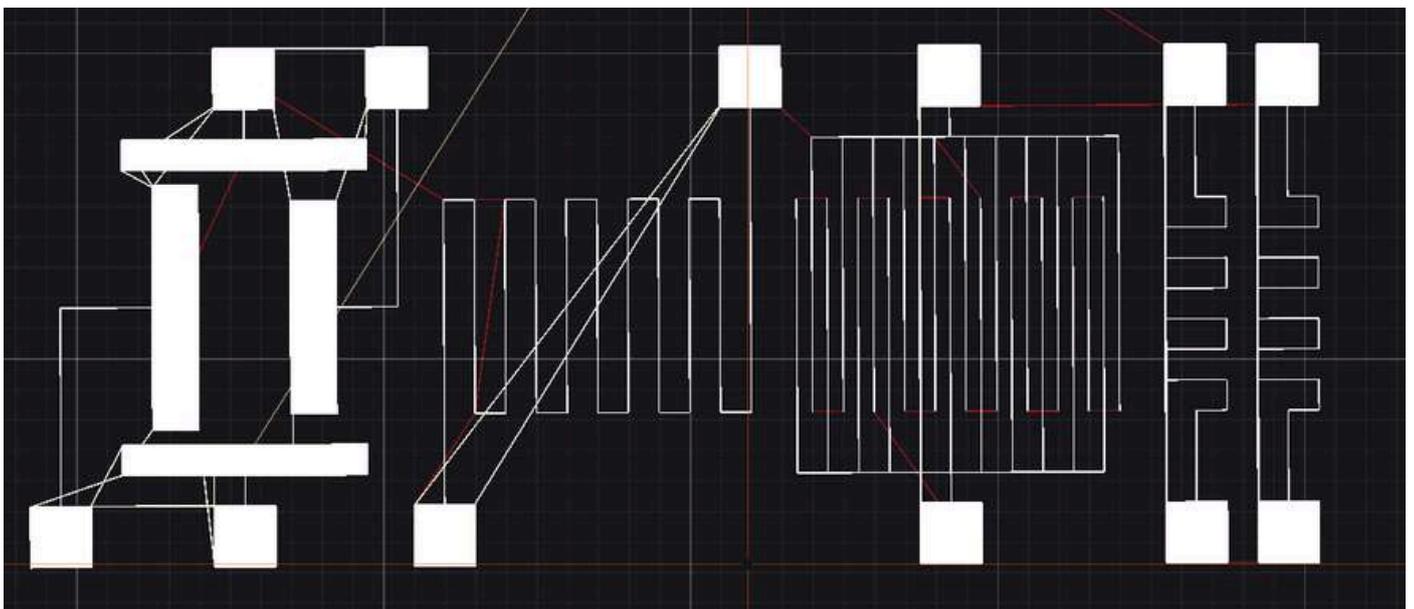
CAD design of sensors

Technical Steps:

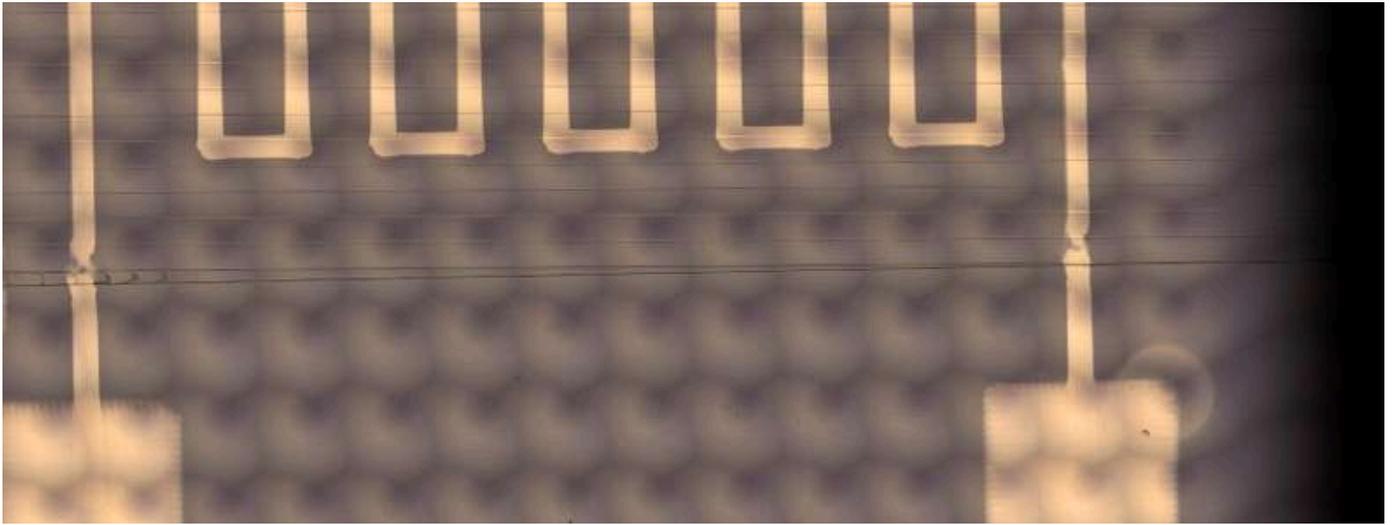
- 1. CAD Design to Machine Project:** The sensor design was converted into a machine-readable project.
- 2. Platinum Deposition:** The deposition process was initiated to apply platinum across the microfluidic channels.

3. Inspection: Post-deposition inspection identified areas with uneven and non-continuous lines.

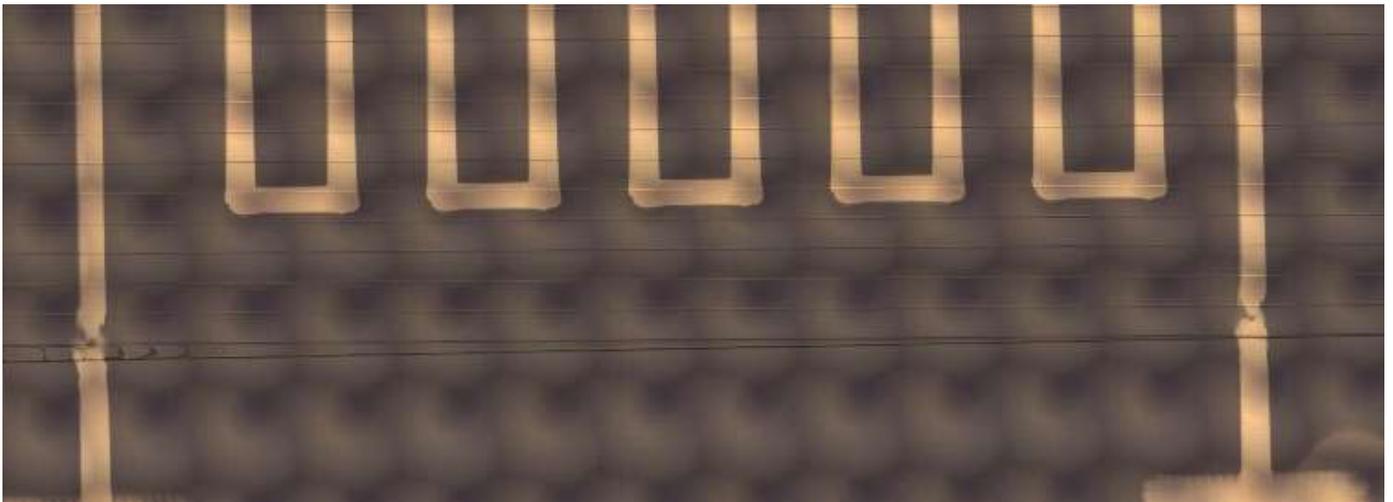
4. Correction Using DALP®: The affected areas were rescanned, and new deposition lines were applied precisely where needed.



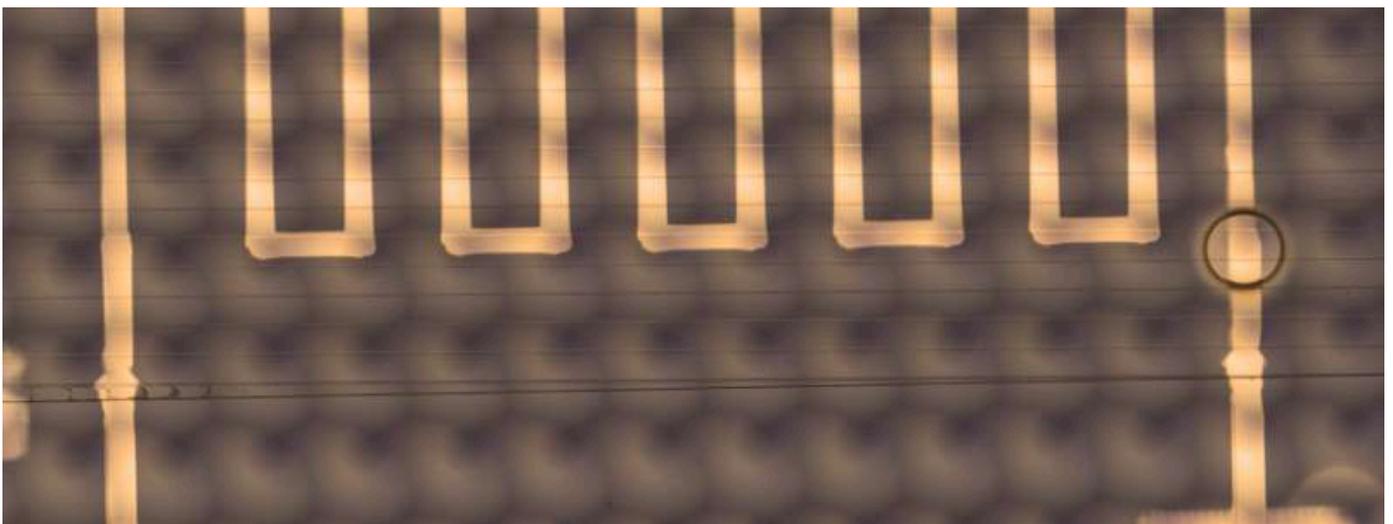
Scan, align, and convert to machine job



Inspect



Draw a patch



Deposit, scan & inspect!

+ EXPANDING THE HORIZONS OF MICROFABRICATION



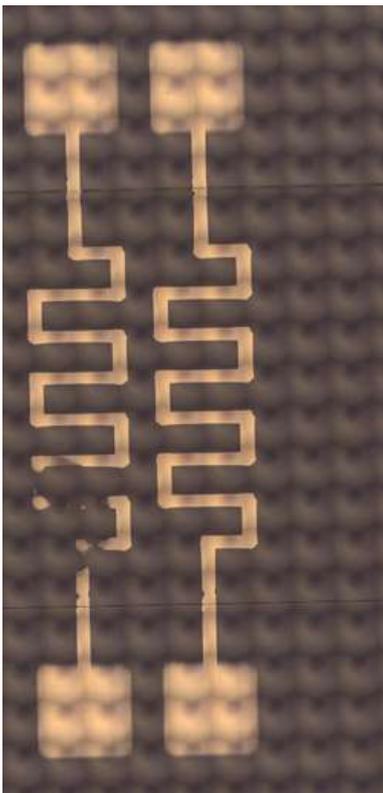
ATLANT 3D's DALP® technology isn't limited to conductive path repairs. Its applications are diverse, making it a versatile tool in the microfabrication arsenal. Here's how DALP® can enhance your processes:

- **Insulating Layer Repairs:** Quickly address local failures in insulating layers by reapplying the same material where needed.
- **Optical Coating Adjustments:** Achieve precise optical properties by correcting the thickness of optical coatings.
- **Dielectric Layer Enhancements:** Ensure dielectric layers meet their required electrical characteristics with targeted repairs.

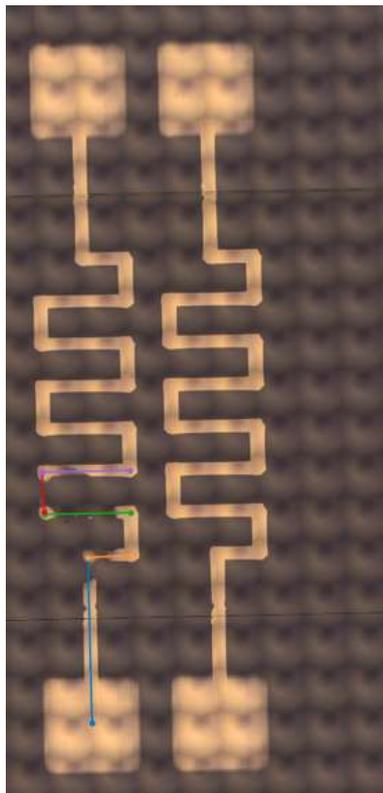
EFFICIENCY AND SUSTAINABILITY

By enabling rapid in-process corrections, ATLANT 3D's DALP® technology drastically reduces the need for complete reworks, saving both time and resources. This approach not only enhances production efficiency but also promotes sustainability by minimizing material waste.

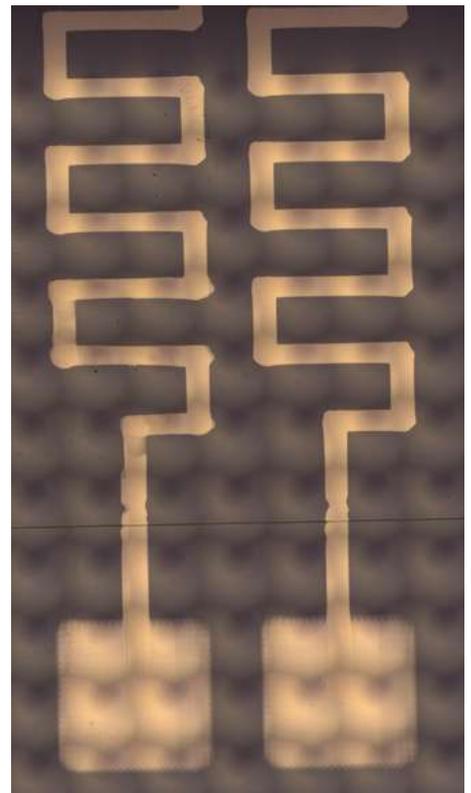
CHIP SURGERY: CASE 2



Scan & Inspect



Draw a patch



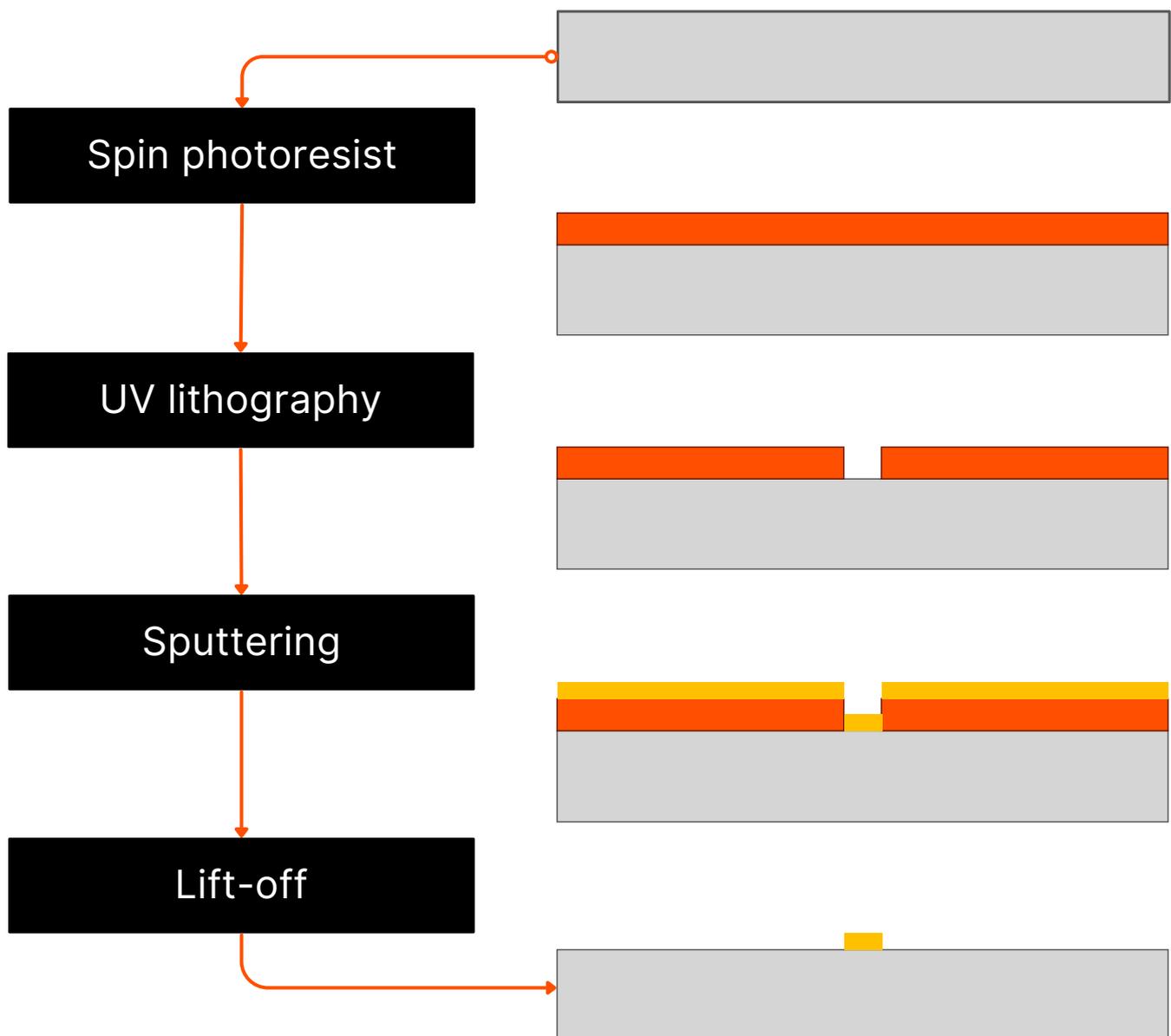
Deposit, scan & inspect!

+ SO WHAT'S THE BIG DEAL?



ATLANT 3D's DALP® technology offers unparalleled flexibility in thin film microfabrication. In traditional microfabrication processes, issues may only become apparent after several steps, such as post-lift-off. Addressing these problems typically requires starting over from scratch, wasting time and resources.

In contrast, DALP® technology allows us to identify and resolve issues in mere minutes without needing to remove the sample or adjust parameters. For example, we recently repaired a conductive path for a sensor with minimal disruption. This capability extends to a variety of applications, including fixing local failures in insulating or dielectric layers by reapplying the same material or adjusting the thickness of optical coatings to correct their properties.





ATLANT 3D is at the forefront of innovation in atomic-scale advanced manufacturing. Our mission is to transform the microfabrication landscape with cutting-edge technologies that offer unprecedented precision, flexibility, and efficiency.

OUR CORE TECHNOLOGY: DALP®

At the heart of our solutions is the proprietary Direct Atomic Layer Processing (DALP®) technology. DALP® allows for direct, precise, and flexible material deposition at the atomic level, making it possible to create highly intricate and reliable microstructures. This technology is a game-changer for industries requiring meticulous thin film fabrication, including microelectronics, photonics, and MEMS/Sensors.

THE NANOFABRICATOR™ PLATFORM

Our state-of-the-art NANOFABRICATOR™ platform leverages DALP® technology to deliver advanced microfabrication capabilities. This platform is designed to meet the diverse needs of research labs, high-tech development teams, and industry innovators, providing tools for rapid prototyping, precise material deposition, and versatile fabrication processes.

COMMITMENT TO INNOVATION AND SUSTAINABILITY

ATLANT 3D is committed to driving innovation while maintaining a strong focus on sustainability. By enabling rapid in-process corrections and reducing material waste, our technologies help to conserve resources and minimize environmental impact. We believe in creating solutions that not only advance technology but also contribute to a greener, more sustainable future.

BROAD RANGE OF APPLICATIONS

Our technologies cater to a wide range of applications, including:

- **Microelectronics:** Enhancing the performance and reliability of electronic components.
- **Photonics:** Developing advanced optical devices with precise material control.
- **MEMS/Sensors:** Fabricating high-performance sensors and micro-electromechanical systems with intricate designs.
- **Quantum Technologies:** Supporting the development of next-generation quantum devices.

PARTNERSHIPS AND COLLABORATIONS

At ATLANT 3D, we believe in the power of collaboration. We work closely with academic institutions, industry leaders, and research organizations to push the boundaries of what's possible in microfabrication. Our partnerships are central to our mission of advancing technology and fostering innovation across multiple sectors.

CONTACT US

To learn more about our groundbreaking technologies and how we can help drive your innovation, please visit our website or contact us directly.



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