

A person in a cleanroom, wearing a blue protective suit, cap, and mask, is holding a large, circular, blue-tinted wafer. The background is a blurred cleanroom environment. In the top right corner, there are several overlapping blue circles of varying shades.

PLATINODE®

Electrocatalytic layers increase safety and yield in wafer plating



www.ep.unicore.com

The wafer contact elements and also the anodes are of critical importance in wafer plating equipment.

The cathodic contact resistance varies over time – this leads to variations in thickness of plated layers. Soluble anodes change lateral dimension, because they dissolve during operation – this has a negative impact on constant plating results.

Umicore modification of wafer contacts and the use of our insoluble anodes help to overcome these issues.


umicore
Electroplating

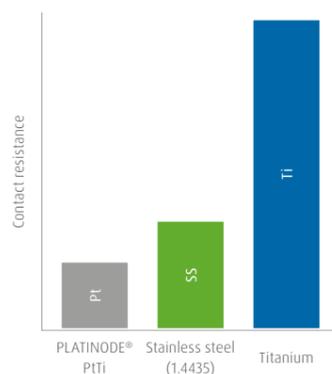


Improved thickness distribution due to platinum coating on the cathode ring contacts

Our molten salt platinum coating on your cathode ring contacts offer lowest contact resistance, and, thus an optimal current distribution into the wafer. This simple adaptation on the cathode side can be easily integrated into any production process.

PLATINODE®

SIGNIFICANT IMPROVEMENT IN CONTACT RESISTANCE



The contact resistance will decrease multiple times by adding a platinum layer. In addition, a platinum layer eliminates the risk of oxidation of titanium and stainless steel, which is widely used for these contacts. Titanium forms oxides, which create non-conductive areas. This will disturb the conductivity between the ring contacts and the wafer and thus can lead to unpredictable changes in thickness distribution. Also stainless steel can be plated with platinum. However, titanium plated with platinum is the preferred choice.





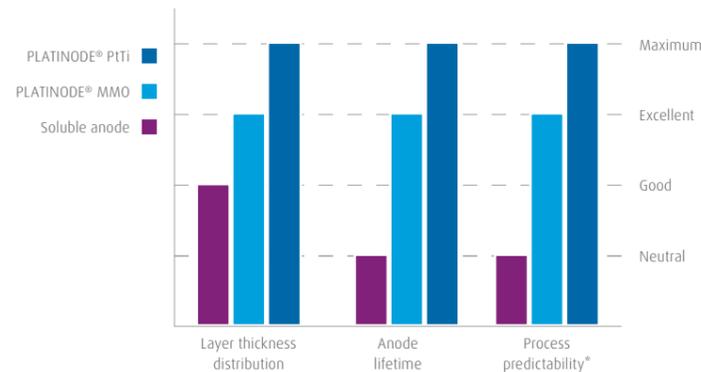
Replacement of soluble by insoluble anodes reduces process cost by improved yield

Taylor made, and platinum or mixed metal oxide (MMO) coated anodes offer consistently high and long lasting conductivity. The insoluble anodes do not change dimension over time and guarantee best current distribution and thickness uniformity of the plated layers over the entire lifetime of the system. This enables a predictable thickness uniformity at the cathode wafer side.

INCREASED PROCESS EFFICIENCY, REDUCED PROCESS COST, REDUCED ENVIRONMENTAL IMPACT, REDUCED EFFORT IN PROCESS CONTROL.



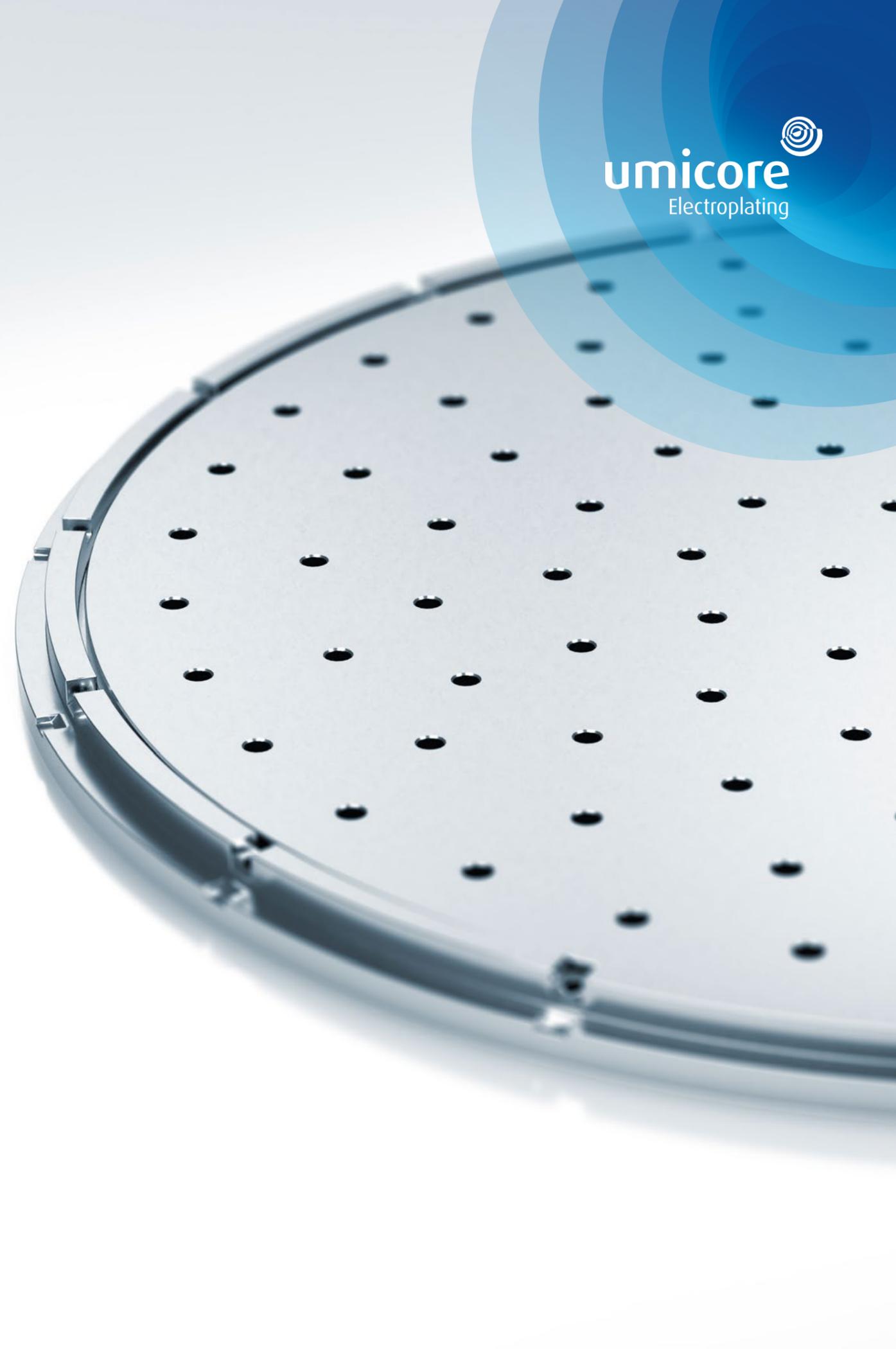
BENEFITS ARE STABLE CONDUCTIVITY, AND CONSTANT SHAPE OF THE ANODES



In addition to the significantly improved ECD layer thickness distribution you will achieve:

- Reduction of maintenance and downtime
- Dimensionally stable anodes over entire lifetime
- Less post-processing effort (CMP)
- Possible increase in the current density and thus the coating speed
- Increasing safety at work
- More environmentally friendly production due to a sustainable anode system

* Control of layer thickness distribution, morphological consistency, compositional distribution



Right Composition.
Perfect Surface.

CONTACT PERSON

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