MISTRAS
A World of NDT Solutions
Products & Systems Division

**Application Brief**

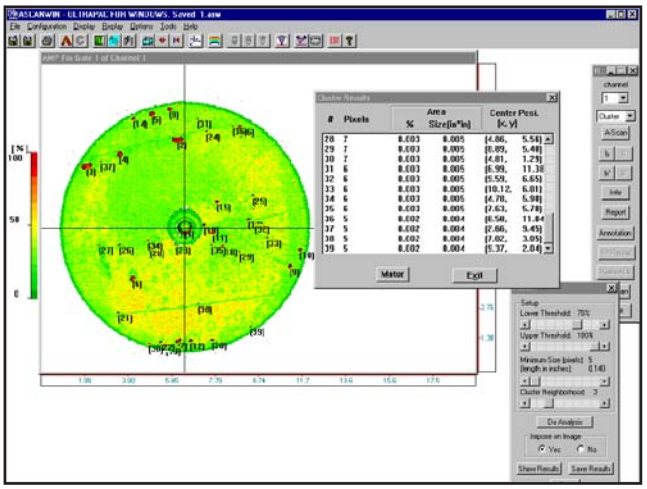
# Sputtering Disk Inspection Using UltraWin C-Scan

## *Current Condition*

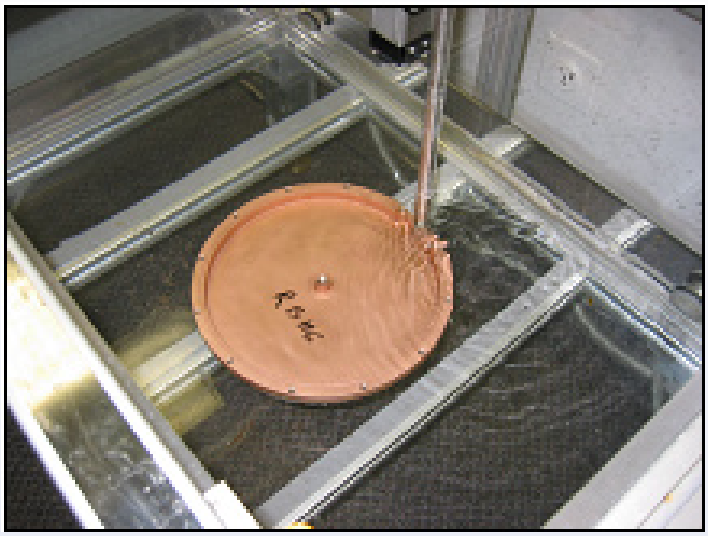
Sputtering deposition is widely used in the semi-conductor industry in the manufacturing of thin films and storage media. The process basically involves depositing material, under vacuum, onto a negatively charged disc known as a sputtering target. Due to the high stresses involved, it is critical that the bimetal target be thoroughly bonded to insure the production of quality films. A determination of the quality of the bond must be made in a timely, cost-effective manner.

## *Solution*

The screen capture to the right shows an Ultrasonic C-Scan of a typical sputtering target (.480" Nickel solder bonded to .280" copper plate). The circular red areas depict voids detected in the so*lder bond. Further analysis with UltraWin clustering software automatically located and graded 39 voids. The Ultrasonic results were* later 100% verified by mechanically peeling the nickel target from the copper substrate.



The inspection setup using an UltraPAC UT Immersion System is shown at the left. It is a straightforward inspection using a standard focused UT immersion transducer. Data shown was obtained using a 15 MHz transducer with 2-inch focal length and the AD-IPR-1210 board.



Inspection speeds can be set to maximum allowable per the immersion system used – resulting in rapid inspection time – and a low-cost production quality validation for our customers.

MISTRAS Software & Systems division, is a team of skilled researchers, engineers, technicians and manufacturing personnel dedicated to the development on practical and cost saving solutions to your challenging inspection needs.

For a demonstration or additional information, please contact our Princeton Junction headquarters at 609-716-4000.

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