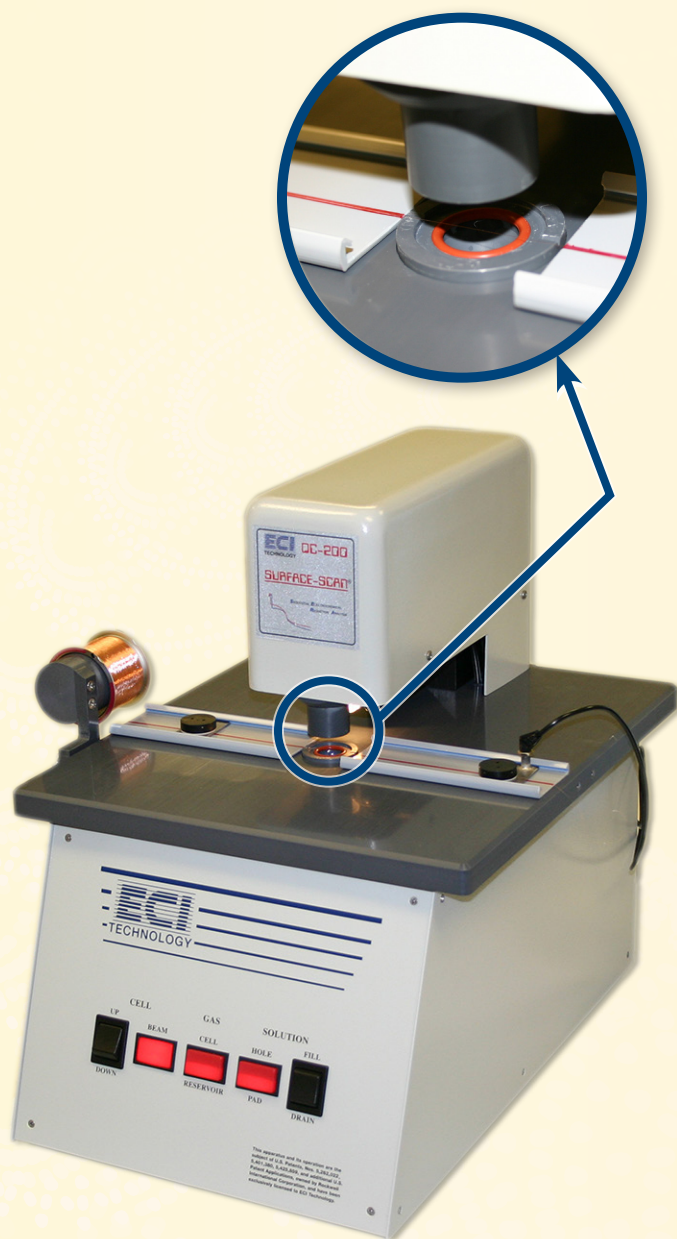


**Ensure the Bondability of Your Wire**

# SurfaceScan® SERA

**Sequential Electrochemical Reduction Analyzer**



Copper and Silver wires are rapidly gaining a foothold as an interconnection material in semiconductor packaging applications due to some advantages over gold. These advantages include up to 90% cost reduction, superior electrical and thermal conductivity, less intermetallic growth, greater reliability of the bond at elevated temperatures and higher mechanical stability. One of the disadvantages of Copper and Silver wires is that they tend to undergo oxidation at relatively low temperatures. Sequential Electrochemical Reduction Analysis (SERA) can measure copper oxidation and thus help study and optimization of wirebonding processes utilizing copper wire.

QC-200 was specifically developed to measure Copper and Silver wires 15-100  $\mu\text{m}$  in diameter. With a detection limit down to 10 Angstrom, this system can easily detect native oxide on the wire and subsequent oxidation levels due to ambient exposure. QC-200 is also capable of distinguishing between  $\text{CuO}$ ,  $\text{Cu}_2\text{O}$ , and  $\text{CuS}$ . These attributes make SurfaceScan QC-200 an ideal tool for quality control of incoming Copper or Silver wires, pre-bond, handling and storage of spools.



*We Keep Your Chemistry Right.™*

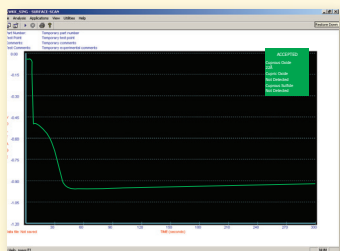


# SurfaceScan® SERA

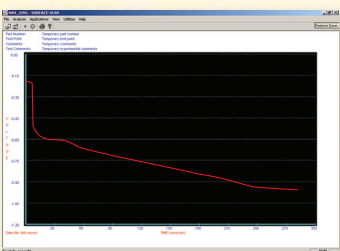
## An invaluable surface analyzer for detection of reducible species on Copper and Silver wire

### Features and Benefits:

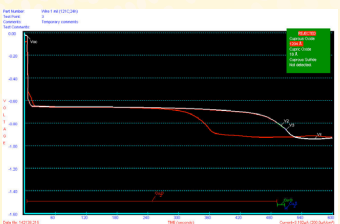
- Quantitatively detect Oxides and other reducible species
- Analyze Copper and Silver wire diameters between 0.8mil - 3mil
- Measures type and thickness of Oxides or Sulfides
- Current density range 10-1000 mA/cm<sup>2</sup>
- Analyzer footprint including stand and printer 6ft<sup>2</sup> (0.557m<sup>2</sup>)
- Nitrogen used for de-aeration (pre-purified 99.998% or better, moisture < 3 ppm, Oxygen < 5 ppm)
- Borate buffer solution used (Boric acid + Sodium tetraborate, pH range 8.3-8.5)
- Superior accuracy and precision
- Supports wire spools and modified electrical connectors
- Computer specs - Intel Pentium or better, Windows XP or better



Clean Wire



Oxidized Wire



Wire Exposed to Heat for 24 Hrs

### Typical Applications:

- Detect and measure Oxides and other reducible species on wire surface
- Study the mechanism and rate of Oxide growth in different temperatures and atmospheres (air, forming gas, Nitrogen, etc.)
- Great for wire manufacturers, assemblers, and wirebonders

### Backed by ECI Global Support

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