

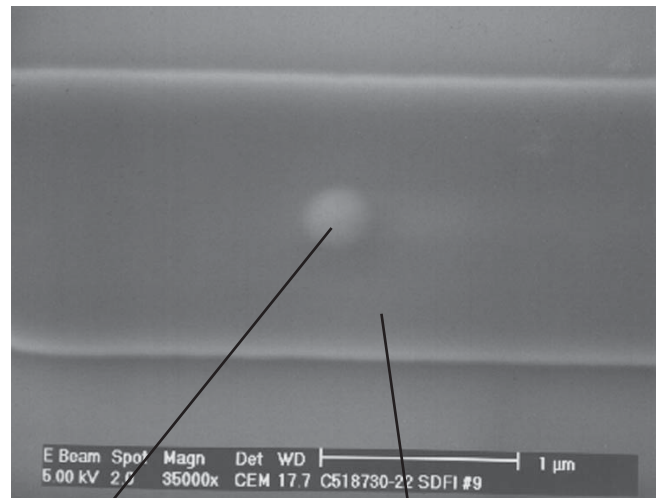
**AN 341****Analysis of a 0.3  $\mu\text{m}$  Surface Defect Auger Electron Spectroscopy vs. Energy Dispersive X-ray Spectroscopy**

May 7, 2007 (Version 3.0)

**EDX**

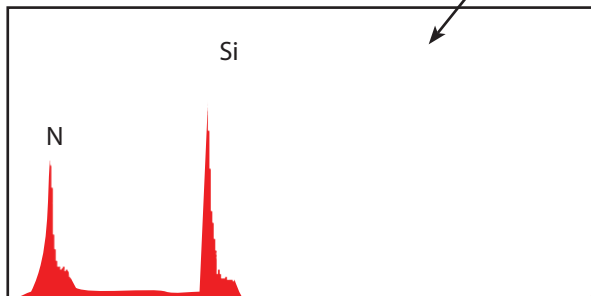
Energy Dispersive X-ray (EDX) analysis of a submicron buried defect on a 200 mm product wafer found no difference in materials on and off the particle defect.

The EDX data did not provide a definitive answer about the nature of the particle.

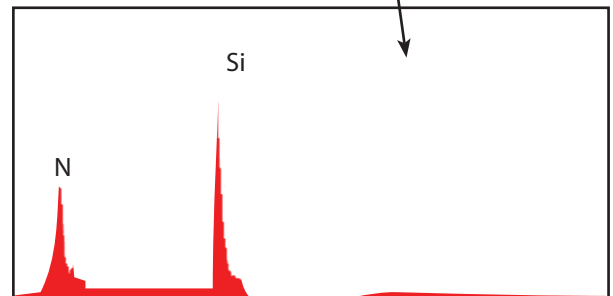


Secondary electron micrograph.

EDX data on the defect

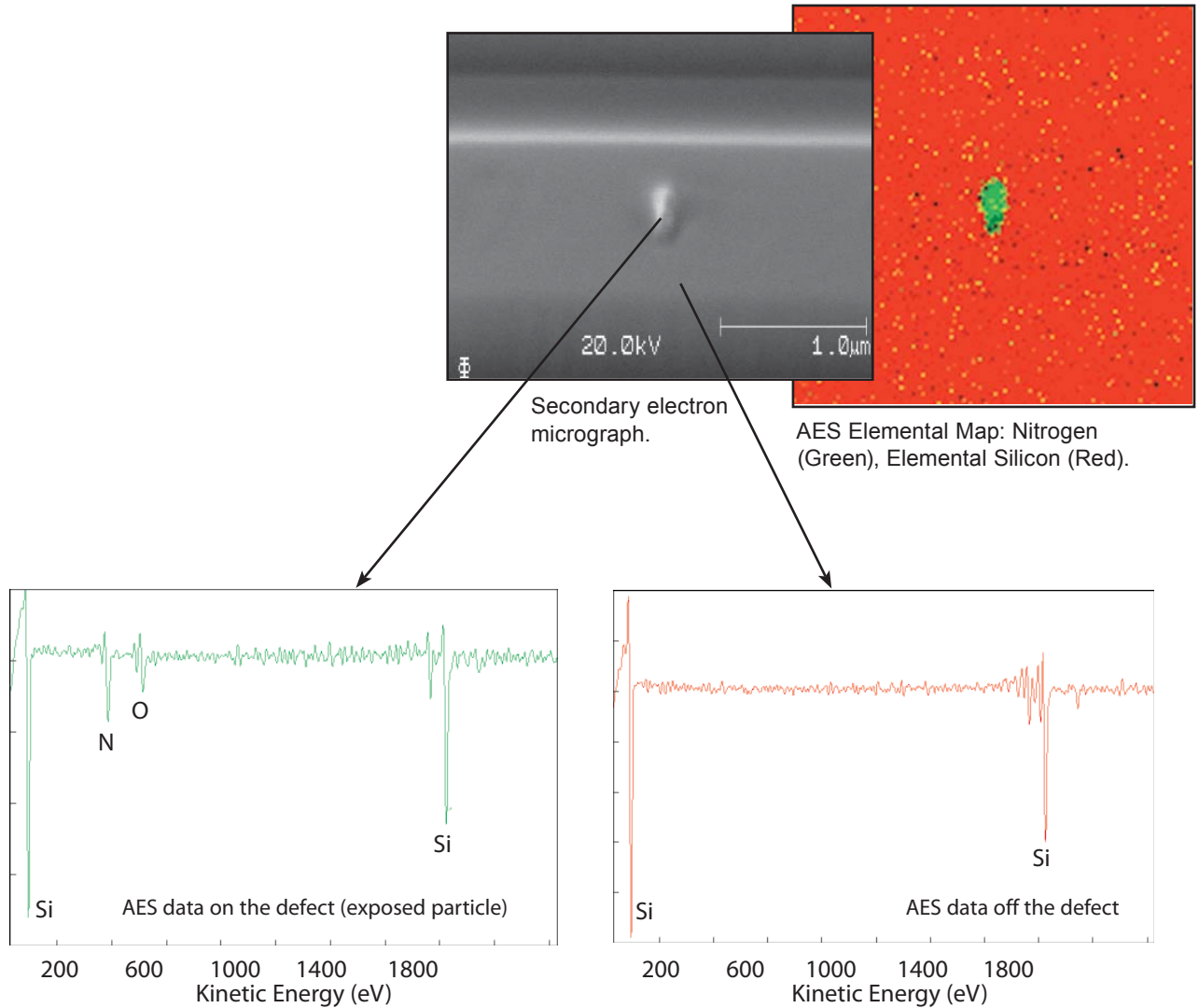


EDX data off the defect



**AES using the PHI SMART-200**

Ion beam sputter etching (also known as ion milling) with the PHI SMART-200 exposed the buried particle for subsequent analysis. Auger Electron Spectroscopy (AES) identified the exposed particle as silicon oxynitride. From these results, analysts concluded that the particle defect originated from the silicon oxynitride deposition system.



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