

ϵ PHASE DETECTION IN Sn-4Ag-0.7Cu AND Sn-4Ag SOLDER JOINTS USING AUGER ELECTRONS SPECTROSCOPY MICROPROBE

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ABSTRACT

Morphology and the chemical composition of the interface layers connecting the high-purity copper substrate with the bulk solder were investigated. Exploration of the sub-micron scale down to 100 nm thick intermetallic layers has been carried out using an Auger Electrons Spectroscopy (AES) microprobe. Examination of the substrate/solder interface with the high-resolution Auger microprobe, revealed the existence of a well defined 380nm thick ϵ phase (Cu₃Sn) intermetallic layer between the copper substrate and the η phase (Cu₆Sn₅) intermetallic layer in the solder alloys.

KEYWORDS: Lead Free Solders; Intermetallic Compounds; Auger Electrons Spectroscopy.

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