UNIVERSITI TEKNOLOGI MARA

INTERMETALLIC GROWTH KINETICS FOR Sn-3.5Ag-0.1Ni SOLDER SANDWICHED BETWEEN TWO COPPER SUBSTRATES

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Preliminary Results Report submitted
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AUTHOR'S DECLARATION

I declare that the work in this preliminary results report was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the preliminary results of my own work, unless otherwise indicated or acknowledged as referenced work. This report has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

The intermetallic growth kinetics between Cu/Sn-3.5Ag-0.1Ni/Cu interfacial reactions were studied during reflow aging at 250℃ for 1, 10, 20, 30 and 40 minutes using Cu/Sn-3.5Ag-0.1Ni/Cu sandwich solder. A typical Sn-Cu-Ni intermetallic compound layer was formed lower and upper interfacial after reflow. A $(Cu, Ni)_6Sn_5$ intermetallic compound layer was observed at both lower and upper Cu/Sn-3.5Ag-0.1Ni/Cu interface. The classical kinetic theory may clearly explain the growth kinetics of the overall interfacial intermetallic compound layer for this study. In addition, the lower interfacial has thicker intermetallic compound and higher intermetallic growth kinetics than upper interfacial.

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