UNIVERSITI TEKNOLOGI MARA

INTERMETALLIC GROWTH KINETICS OF SN-3.5AG SOLDER SANDWICHED BETWEEN TWO COPPER SUBSTRATES

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Preliminary result report submitted in partial fulfilment
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AUTHOR'S DECLARATION

I declare that the work in this preliminary results report was carried out in accordance with regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This preliminary 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 Under Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Solder is an alloy with low melting temperatures which is commonly used to joint electronic parts together. Most commonly used solder are usually consist of tin and lead, however the use of lead is prohibited since it brings harm towards the environment. Therefore in this research, the study of Sn-3.5Ag solder in replacement to lead based solder has been conducted. The formation and intermetallic compound (IMC) growth of Sn-3.5Ag solder at interface between Cu substrate has been observed for five samples during liquid state aging at 250°C for 1, 10, 20, 30 and 40 minutes respectively. It is found that the morphological of IMCs as well as the thickness of the IMC layer changed as aging time increases. The interfacial morphology of the solder initially remained as a columnar type later transformed into the scallop type due to the competition between the IMCs growth and the dissolution of Cu from the substrate.

TABLE OF CONTENT

	Page
AUTHOR'S DECLARATION	iv
ABSTRACT	**v**
ACKNOWLEDGEMENT	**vii**
TABLE OF CONTENT	**viii-ix**
LIST OF TABLES	**x**
LIST OF FIGURES	**xi**
LIST OF ABBREVIATIONS	**xii**
CHAPTER 1: INTRODUCTION	
1.1 Background of The study	**1**
1.2 Problem Statement	**2**
1.3 Significance of The Study	**2**
1.4 Objective of The S.tudy	**3**
CHAPTER 2: LITERATURE REVIEW	
2.1 Solders	**4**
2.2 Lead-Free Solder	**5**
2.3 Intermetallic Compound (IMC)	**5-6**
2.4 Sn-3.5Ag Solder	**6-7**
2.5 Sn-Ag Binary Phase Diagram	**7**
CHAPTER 3: METHODOLOGY	
3.1 Raw Materials and Equipment	**9**
3.2 Solder Composition	**10**
3.3 Preparation of solder disk	**10-12**
3.3.1 The Preparation of Sn-3.5Ag Solder	
3.4 Soldering and Aging	**12**
3.5 Intermetallic Study	**13**
3.6 Growth Rate of Intermetallic Compound	**13**

3.7 Flow Chart **14**

CHAPTER FOUR: RESULTS AND DISCUSSION
4.1 Introduction **15**
4.2 Interfacial Morphology of Sn-3.5Ag solder **15**
4.3 Intermetallic Study **16**
4.4 Growth Rate of IMC **17**

CHAPTER 5: CONCLUSION AND RECOMMENDATION

5.1 Conclusion **18**
5.2 Recommendation **18-19**

REFERENCES **20-21**

APPENDICES **22-24**