

IEEE Malaysia Section Newsletter

IEEE Electronic Packaging Society

Compiled by Bernard LIM and Wee Teck LIM
 berna_rd@ieee.org lim.weeteck@onsemi.com

IEEE-EPS Malaysia Chapters AGM – 6th Feb 2021

This year IEEE-EPS Malaysia Chapters held their AGM 100% through webinar.

Please join me in congratulating the incoming IEEE Electronic Packaging Society Malaysia Section committee that is led by Dr Yik Yee TAN from ON Semiconductor.



Fig 1: IEEE EPS Committee Group Photo Online during at 2021 AGM

IEEE-EPS Malaysia Chapters BEST ENGINEERING STUDENT AWARD (BESA) 2020 for Undergraduate Final Year Project CONGRATULATIONS

The winner of this award is Tain Yuan Phin from University Tunku Abdul Rahman (UTAR) supervised by Ts. Dr. Karen Wong Mee Chu from Department of Mechanical & Materials Engineering. The thick intermetallic compound (IMC) forming at the SAC solder/substrate interface is inherently brittle, compromising on both structural and electrical integrity. In this project, a patented (Malaysia & International patents) SAC-Pt alloy was used to compare against the commercial SAC solder to study the microstructural evolution after different reflow times as well as during isothermal aging.

Pt particles were mechanically mixed into a commercial SAC solder paste before stenciling on a Cu substrate. The substrate was ultrasonically cleaned and pre-coated with RMA flux before the reflow soldering process. Isothermal aging was carried out at 150°C. Samples were subjected to standard metallographic preparation before imaging and analysis using the scanning electron microscope with EDX.

It was found that multiple reflows led to thicker and coarser scallop-shaped IMC layers in the commercial SAC solder joint. When Pt reinforcement between 0.20-0.40 wt.% was added, the IMC layer was suppressed. Kirkendall voids were present in SAC samples with increasing reflow times as well as after isothermal aging. These voids were noticeably reduced in Pt-containing joints. This is attributed to the formation of the (Cu,Pt)₆Sn₅ compound on the IMC layer which slowed down the interfacial diffusion process, and thus controls the excessive growth rate.

2021 IEEE/ECTC Award winners - 10 Years Volunteering Award – Shaw Fong WONG

Shaw Fong Wong of Intel Technology Sdn Bhd, currently part of the Assembly & Manufacturing Technology (AMT) sub-committee which he has started volunteering approximately 10 years ago to ECTC. In fact, he had been engaging in a few APAC regional conferences even earlier than that, like IEMT/ EMAP/ IMPACT/ ICEP/ EPTC and etc., which had shaped him in developing his volunteering spirit for IEEE related events. The ability for Shaw Fong to continue volunteering in IEEE conferences especially for ECTC has rewarded him with a greater "Degree of Happiness" (technically). It had also enhanced his professional skills and to continuously engaging in an ever-fast pace of technology world. To Shaw Fong, all this volunteering has been an invaluable experience (definitely) to contribute to the development of the local technical society, focusing on building up more pipeline to expand the semiconductor and electronic packaging society.

