



## The Packaging Workshop

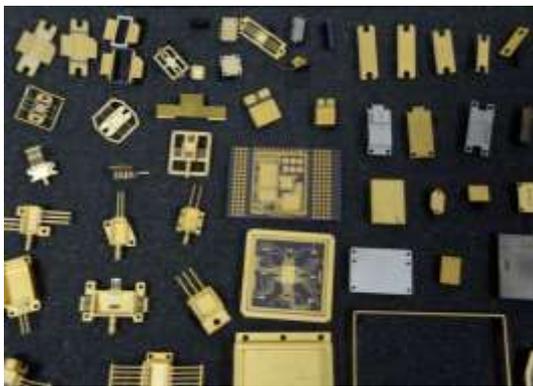
Airbus Defence and Space, Portsmouth. Thu 28<sup>th</sup> Sept 2017



After a selling-out rapidly, 48 people attended The Packaging Workshop on the 28<sup>th</sup> September 2017. Employees of the host organisation, Airbus Defence and Space welcomed all attendees and ensured an efficient transfer to the meeting suite where the workshop was held. The day commenced with coffee and an overview of IMAPS-UK. Attendees were then welcomed to the workshop and provided with an overview of the agenda for the day.



The day started with an Introduction to Die Attach and Flip Chip Attach Technologies given by Alastair Attard from BEI. As well as a brief introduction to packaging styles, Alastair covered epoxy die attach and flip chip, the range of production equipment and tooling available. The next speaker was Steve Riches from Tribus-D who spoke on the subject of metallic attachment. Steve covered the pros and cons of a variety of solder alloy options as well as sintered and transient liquid phase materials. He also introduced some aspects of joint quality assessment and common failure modes. The session was rounded off with two case studies. Mark Thorne detailed how ULTRA CEMS approached the conversion of an existing, qualified aerospace PCB assembly into a high density, multichip module, overcoming obsolescence whilst simultaneously improving performance and reliability. Tony Winstler detailed how Henkel had responded to a recent request for a thermally conductive adhesive for use on organic substrates with experimental work to confirm product suitability.



The second session of the day took place after a coffee break and covered wire bonding. Steve Riches of Tribus-D started proceedings with a general introduction to wire bonding. His tutorial gave some historical background and introduced different wire types such as copper, gold, silver and aluminium. A good overview of the subject was provided which set the tone well for the next two tutorials on ball bonding and wedge bonding. Simon Broadhurst of Kuliccke and



Soffa gave a fascinating insight into the latest developments with auto ball bond machines and the changing demands of the market place. The final tutorial of the morning on wedge bonding was by Michael Brökelmann of Hesse. He explained the wedge process in detail with the aid of animations. The specialist applications of wedge bonding were discussed, and he explained the limits of the process from fine pitch to heavy wire.



After lunch, attendees were treated to a brief window tour of the Airbus Defence and Space clean assembly rooms, with a quick overview of some of the products which have already been produced and some of the future trends which are unfolding and shaping future work. The tours were followed by The Packaging Surgery. Each of the morning speakers became packaging surgeons for an hour, and sat on a panel to answer a range of packaging questions from the audience. Most questions were generic on how to make good design or process choices, but there were also a couple of questions which focussed on specific issues encountered by audience members. Enthusiastic responses were given by surgeons and other audience members and some questions even triggered some lively debate. The following coffee break allowed everyone to digest the new things they'd been exposed to in the surgery.



The final session of the day focused on Advanced Packaging, building upon many of the topics discussed earlier in the day. Piers Tremlett presented a fascinating review of the ever-advancing packaging technology developments linked to the evolution of the mobile phone. Our next speaker, John Maguire from Nordson March, revealed the chemistry behind Plasma treatment of semiconductor packages and shared a little of the techniques used to improve adhesion or remove contaminants via plasma

technology. Our final speaker of the day, Goo Lee from Stats ChipPac, provided an insight into the technologies and challenges faced by one of the world's largest 'System In Package' assembly houses. Goo shared how some of the technologies discussed throughout the day are implemented by Stats ChipPac and provided some amazing examples of the continued miniaturisation that exists in the world of advanced packaging.

Keith Arber, John Lipp, Martin Wickham & Scott Wood

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Event Sponsor:

