

Picosun's ALD nanolaminates improve lifetime and reliability of electronic circuit boards

ESPOO, Finland, 24th October, 2017 – Picosun Oy, leading provider of advanced Atomic Layer Deposition (ALD) solutions for global industries, has invented an ALD-based method^(*) with which the operational lifetime and reliability of printed circuit board assemblies (PCBA) can be efficiently improved.

Metal whisker formation and corrosion are some key factors that cause PCBA performance degradation over time. Metal whiskers are thin filaments or threads growing out from solders, components, and interconnects on the PCBA, and they can cause short-circuiting that leads to a system failure. This is particularly fatal in several sensitive applications such as medical, automotive, space, aviation, military, and industrial control electronics.

Previously, lead has been added to solder alloys to prevent whisker formation, but the current environmental regulations prohibit its use. This is why novel methods, such as the ALD-based surface protection technique developed and now industrially enabled by Picosun are very much sought after amongst the electronics manufacturers. In Picosun's approach, application-specifically tailored ALD nanolaminate forms a dense, conformal, and hermetic seal on the PCBA. This seal protects the PCBA components from the corrosion caused by moisture and impurities in the ambient air and blocks the metal whisker propagation. As ultra-thin films, ALD coatings have the additional benefit of allowing postprocessing of the PCBA, and they do not increase its mass or dimensions. Furthermore, as a gas-phased technique, ALD is gentle to the surface, it can be applied at moderate temperatures, and it is environmentally friendly.

"Our PCBA protection technology has gained lots of interest amongst our clients both in industries and in R&D, and many are eager to start applying it in their manufacturing processes. Electronic circuit board industry is a vast, global market, where we are happy to utilize our ALD knowhow to enable products of extended lifetime and improved safety and reliability. Our comprehensive selection of industrial ALD systems guarantees an optimal solution to every customer, allowing fast and economic processing of even large area PCBAs in just one process run," states Juhana Kostamo, Managing Director of Picosun.

Picosun provides the most advanced ALD thin film coating technology to enable the industrial leap into the future, with turn-key production solutions and unmatched expertise in the field. Today, PICOSUN™ ALD equipment are in daily manufacturing use in numerous major industries around the world. Picosun is based in Finland, with subsidiaries in Europe, North America, Singapore, Taiwan, China, and Japan, and a world-wide sales and support network. For more information visit www.picosun.com.

^(*) Pat. pending

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