

Picosun's ALD encapsulation prevents electronics degradation

ESPOO, Finland, 14th February 2019 – Picosun Group, a leading supplier of ALD (Atomic Layer Deposition) thin film coating solutions for global industries, reports unprecedented results in high reliability electronics protection with ALD.

Hermetic encapsulation by ALD nanolaminates developed by Picosun has been proven to block tin whisker formation on PCB (printed circuit board) assemblies completely(*). During the observation period of over one month to three years, ALD-protected samples showed no tin whisker growth at all, whereas on non-protected samples tin whisker density of over 1000 pcs/cm² was measured. In addition to blocking tin whiskering, Picosun's ALD nanolaminates help to protect the PCBAs against other key degradation phenomena such as various forms of corrosion and oxidation. Hermetic ALD coating works efficiently even against moisture and gaseous sulfur in polluted atmosphere. Due to its nanometer-scale thickness, the ALD film has no effect on the PCBA functionality, mass or dimensions and it allows reworking of the PCBA.

Tin whisker formation and corrosion are particularly fatal in several high reliability electronics applications such as data centers, space, aviation, military, medical and industrial control systems. Picosun's revolutionary ALD encapsulation method offers now safety improvement, product lifetime lengthening, and even long-term cost savings to these manufacturers. Fast, cost-efficient processing of large amounts of PCBAs can be realized in **PICOSUN™ P-1000** and **P-300B** high volume batch ALD systems with production-proven, industry-optimized processes.

“We are happy to announce these groundbreaking results obtained with our ALD encapsulants in protection of specialty electronics. This is a new, potentially huge market for ALD. There has already been lots of interest towards our turn-key coating solutions for large scale PCBA protection from the corresponding industries. This shows again the versatility of ALD and its power to disrupt near all fields of today's industrial manufacturing”, says Dr. Jani Kivioja, CTO of Picosun Group.

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. Visit www.picosun.com.

(*). Results obtained in Picosun's collaboration project with the European Space Agency (ESA): “Evaluation of Atomic Layer Deposition (ALD) Conformal Coating to Mitigate Tin Whiskering” (4000113005/14/NL/PA), 2015-2018.

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