

Advanced Failure Analysis of Semiconductor Packaging



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Objectives of this Course: Integrate circuit failure analysis is developed with semiconductor industry growth. It is an essential part of the semiconductor technology, as the physical failure root cause and mechanism finding is the key for break through the barrier in technology innovation. Every break-through of FA tool or technique brings forward the semiconductor development and enables continuously semiconductor industry growth. The goal of this short course is to address the state-of-the-art of semiconductor failure analysis from various aspects, its 60 years history, the latest equipment, broad cross-field transfer know-how, novel failure mechanisms and its future challenges.

What You Will Learn:

1. The Present and Next Generation of Failure Analysis Equipment
2. The Application of IC Failure Analysis in advanced electronic packaging
3. Failure Mechanisms in advanced IC packaging

COURSE OUTLINE:

- 1) Overview Electronic Packaging Failure Analysis equipment: 60 years and beyond
- 2) Advanced Failure Analysis tools and techniques
 - .Electrical fault localization,
 - .Sample preparation,

.Imaging and
.Material Characterization

- 3) Novel Failure Mechanism of advanced IC packaging
- 4) Future Failure Analysis Challenges in 3D packaging

WHO SHOULD ATTEND:

Engineers and managers involved in the design, process and manufacturing of IC electronic components and packaging, electronic material suppliers involved in materials manufacturing and research & development. It is tailored for those who would like to have an overview of cross field transfer know how in the world-class advanced semiconductor failure analysis for latest front-end and back-end process technologies.

ABOUT THE INSTRUCTOR:

Mr. Ming XUE, head of the failure analysis lab of Infineon Asia Pacific, principal in IC package failure analysis. He obtained a degree in radio technology, JaoTong University, Xian in 1982. He started work in Navigational Aids International, Shanghai in 1982, where he worked 10 years as a product designer / project manager for products in radio receiver, radio transmitter, and wireless remote control system of navigational aids signal. In 1992, he joint Seagate technology international Singapore as a product engineer, and worked 4years in PCBA process and FA lab. In 1995, he joint Siemens Component, now, Infineon Technologies Singapore as Senior FA engineer. Currently, he is head of the failure analysis lab of Infineon Asia Pacific, principal in IC package failure analysis. In his 18 years semiconductor backend experience, he authored or co-authored more than 30 paper publications and invented numbers of patents.

His work widely across electronics product and system design, advanced IC chip and package failure analysis, package reliability characterization, process quality risk management, qualification, new package reliability and quality control method development, customer return and printed circuit board assembly failure analysis.