

Physics of Failure 4-day Webinar by Dr. Abhijit Dasgupta

Join us for a four day webinar on September 25-27 and October 2-4, 2018 Tuesday/Thursday 8:00 - 11:30 am PDT time each day (California time) Cost \$850 per person, Group discounts available for 5 or more from same company! You must participate in all 4 days

[Register here and pass this on to your colleagues!](#)

Webinar Objective:

This is a 14 hour webinar (broken down into 4 half days) which costs \$850. This course offers an introductory understanding of some of the key engineering accelerated test techniques needed to develop reliable electronic products. Participants are presented with various physics of failure methods to design and test for reliability.

Participants will . . .

- Learn how products really fail and understand key reliability issues.
- Become acquainted with the failure modes and mechanisms associated with various electronic devices and assemblies.
- Determine the stresses associated with the qualification of reliable electronic equipment and examine techniques to address problems of reliability.
- Investigate the usage and applicability of reliability standards and handbooks.

Course Outline:

Why Do Electronics Really Fail?

Do the Old Standards Do the Job?

The Physics of Failure Approach

Stress Analysis Approaches

Failure Models

Case Studies

Ball Grid Array Interconnect Reliability

Vias and PTHs

Conductive Filament Formation

Wire Bond Failures in Glob-Top Chip-On-Board Packages

PoF Approach for Accelerated Qualification

The 5-Step Approach for Accelerated Life Testing

Virtual Qualification and Stress Margins

Acceleration Transforms

Testing and Data Post-Processing

Case Studies:

Thermal & Power Cycling

Vibration and Mechanical Shock

Combined Thermal Cycling and Vibration

Combined Temperature and Humidity

The PoF Approach for Process Verification Testing

Types of Screens:

Non-Destructive Screens

Proof Tests

Accelerated Wearout Screens

The two-step approach for Screening Summary

Who Should Attend:

This course is intended for those who are involved in the design, analysis, material selection, manufacture and test of microelectronic components, printed circuit/wiring boards and assemblies. Participants will receive an understanding of the various reliability tradeoffs in electronic packaging.

About the Instructor:

Abhijit Dasgupta, Professor of Mechanical Engineering at the University of Maryland, has conducted over 30 years of research on Physics of Failure (PoF) approaches for developing reliable, complex multi-functional systems that perform electronic, photonic, and mechanical functions. This research, sponsored by a consortium of leading electronics builders/users at the Center for Advanced Life Cycle Engineering (CALCE), focuses on industry-relevant projects in reliability assurance of electronic systems, MEMS, sensors, actuators, and 'smart' composite systems. Examples include avoidance of failures caused by thermal and power cycling, multi-DoF vibration, shock/drop, humidity and combined stresses. He applies these PoF principles for effective virtual qualification, for optimizing manufacturing process windows, for real-time health monitoring and prognostics, and for devising quantitative accelerated testing strategies used in qualification and quality assurance of complex electronic and electromechanical systems. He has consulted for many major electronics manufacturers, published over 250 journal articles and conference papers on these topics, presented over 35 short workshops nationally and internationally, served on the editorial boards of three different international journals, organized several national and international conferences, and received seven awards for his contributions in materials engineering research and education. He has critically evaluated the use of HALT/HASS test methods and has presented PoF seminars and workshops at Hobbs Engineering since 1995.

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After registering, you will receive a confirmation email containing information about joining the webinar.

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