

•ESD BASICS FOR THE PROGRAM MANAGER• •HOW TO'S OF INPLANT ESD SURVEY AND EVALUATION MEASUREMENTS•

Dates: March 9-10, 2010, Austin, TX
3M Innovation Center • Lunch and refreshments provided

ESD BASICS FOR THE PROGRAM MANAGER

March 9, 2010, 8:30 a.m. - 4:30 p.m.

Instructor: Steve Halperin, Stephen Halperin & Associates, Ltd.

This tutorial provides the essentials for understanding electrostatics and ESD impact in electronic product manufacturing, system maintenance, and repair operations. It addresses the various threats of damage during handling and processing ESD sensitive devices and assemblies. The fundamental properties of charge, electrostatic fields, voltage, capacitance and induction are discussed and demonstrated in detail. ESD failure mechanisms are defined, and how to use your ESD Control Program to prevent damage is explained. The course provides an overview of Electrostatic Protected Area design, important considerations when specifying ESD control materials and products, and provides an overview of ESD S20.20 program requirements. This highly engaging presentation includes many in-class demonstrations and animated slides.

Some sample topics covered in this course are:

- ▲ Definitions of Important Electrical Properties
- ▲ Causes of Charge Generation and Discharge
- ▲ Explanation of Electrostatic Fields and Voltage
- ▲ Parallel Plate Capacitance and its Relationship to Charge & Voltage ($Q=CV$)
- ▲ Electrostatic Induction & Related Risks
- ▲ Overview of Material Resistance, Field & Charge Measurements
- ▲ Electrostatic Measurements of Devices & Subassemblies
- ▲ How ESD Causes Device Damage: 4 Basic ESD Failure Models
- ▲ Electrostatic Discharge Energy & Establishing ESD Control Limits
- ▲ How to Select Effective ESD Control Products and Materials
- ▲ Overview of ANSI/ESD S20.20 ESD Program Development Requirements

NOTE

This class is part of The Program Manager Certification curriculum. More details on the Professional Certification Programs offered by ESDA are on our website at www.esda.org/certification.html

Co-sponsored by the Texas Chapter ESD Association

ESD Association • 7900 Turin Rd Bld 3 • Rome NY 13440
Phone 315-339-6937 • Fax 315-339-6793
info@esda.org • www.esda.org



•ESD BASICS FOR THE PROGRAM MANAGER• •HOW TO'S OF INPLANT ESD SURVEY AND EVALUATION MEASUREMENTS•

Dates: March 9-10, 2010, Austin, TX

3M Innovation Center • Lunch and refreshments provided

HOW TO'S OF IN-PLANT ESD AUDITING AND EVALUATION MEASUREMENTS

March 10, 2010, 8:30 a.m. - 4:30 p.m.

Instructor: Steve Halperin, Stephen Halperin & Associates, Ltd.

This program reviews the evaluation and periodic verification (audit) measurement procedures for the technical requirements specified in the ANSI/ESD S20.20 ESD program development standard. Detailed explanation of instruments, fixtures and accessories function and usage are provided. Then the details of "How to" measure are explained and demonstrated. Measurements include those listed in Table 1: Grounding/Equipotential Bonding Requirements, Table 2: Personnel Grounding Requirements, and Table 3: EPA/ESD Control Items. These recommended measurement procedures confirm the proper operation and use of ESD control products and materials selected as part of a facility's S20.20 ESD control program.

Some sample topics covered in this course are:

- ▲ ANSI/ESD S20.20 Technical Control Requirements
- ▲ Program Manager's Approach to Instrumentation and Applications
- ▲ Testing Ground Circuits & Assessing Connections
- ▲ Essential Resistance Measurement Procedures & Concerns
- ▲ Electrostatic Field & Voltage Measurements
- ▲ Personnel Grounding Considerations vs. ESD Control Points
- ▲ Product Installation Baseline Measurements
- ▲ Evaluation, Acceptance, and Audit Procedures for: Ground Systems, Floors, Worksurfaces, Equipment, Personnel Grounding, Garments, Materials, Production Aids, Packaging and Ionization Devices.
- ▲ Electrostatic Analysis Measurements including Worksurface Suppression, Footwear/Flooring, and Ionization decay.

NOTE

This class is part of The Program Manager Certification curriculum. More details on the Professional Certification Programs offered by ESDA are on our website at www.esda.org/certification.html

ABOUT THE INSTRUCTOR STEPHEN HALPERIN

Stephen Halperin has over 30 years of industrial ESD experience and is known for his work in process evaluation, control of sensitive environments, and his many contributions to the electrostatics industry and ESD Association. He served two terms as ESDA president, and chaired Standards, Local Chapter Development, Education, and Professional Certification committees. Mr. Halperin is a recipient of the Symposium's Outstanding Paper Award, the Association's Outstanding Contribution Award for his work on behalf of industry and the Joel Weidendorf Memorial Award for his extensive contributions to ESD standards development. He formed Stephen Halperin & Associates (SH&A - 1983), an international electrostatic consulting firm, and established Prostat Corporation (1992) for design of high performance electrostatic instruments. Mr. Halperin has delivered several papers and authored over 100 articles on ESD related subjects.

**•ESD BASICS FOR THE PROGRAM MANAGER•
•HOW TO'S OF INPLANT ESD SURVEY AND
EVALUATION MEASUREMENTS•**

Dates: March 9-10, 2010, Austin, TX

3M Innovation Center • Lunch and refreshments provided

Registration Form

First Name: _____ Last Name: _____

Company Name: _____

Street: _____ City: _____

State/Province: _____ Country _____ Zip/Postal Code: _____

Is Address (please circle the one that applies) Home or Company

Phone: _____ Fax: _____ Email: _____

Course Selection

- March 9, 2010 ESD Basics for the Program manager
- March 10, 2010 How to's of InPlant ESD Survey and Evaluation Measurements

	Cost before 2/15/10		Cost after 2/15/10	
	Members	Non-Members	Members	Non-Members
1 Full Day	\$495	\$595	\$695	\$695
Both days	\$990	\$1190	\$1390	\$1390

Payment Information

Payment is required at time of registration. Only checks drawn in U.S. currency on a U.S. bank that is a member of the Federal Reserve will be accepted; make checks payable to ESD Association. Visa®, Mastercard®, and American Express® and Discover® are accepted.

Amount enclosed \$ _____ Check Credit Card

Credit card type: Visa® Mastercard® American Express® Discover®

Credit card number: _____ Expiration date: _____

Name on card: _____ Security code: _____

Cardholder's signature: _____

Accommodations

Homewood Suites by Hilton®
10925 Stonelake Blvd, Austin, Texas, 78759
Tel: 1-512-349-9966 Fax: 1-512-349-9995

Staybridge Suites
10201 Stonelake Blvd. Austin, TX 78759
Tel: 1-512-3490888 Fax: 1-512-3490809

**For more information on accomodations visit:
centxesdassoc.homestead.com/3MInnovationDirections.html.**

Mail, or fax this form with payment to:

ESD Association • 7900 Turin Rd Bld 3 • Rome NY 13440
Phone 315-339-6937 • Fax 315-339-6793
info@esda.org • www.esda.org



REGIONAL TUTORIAL