ESD Design, Characterization, Failure Mechanism and Testing of RF Technologies

This program is sponsored by:

Kulim Hi-Tech Park

Conducted by:

DreamCatcher Consulting Sdn Bhd

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SYPNOSIS

In increasingly expanding wireless communication market, high speed wired communication, disk drive, and test, there is a large demand for high performance Radio Frequency (RF) technology. With the growth of RF technologies and volume of the market, electrostatic discharge (ESD) protection is becoming increasingly important in RF technologies from RF CMOS, RF Silicon Germanium and Gallium Arsenide.

ESD protection in RF technologies is a new and emerging design and reliability field. In this area, there is a need to understand the device physics, failure mechanisms, latent mechanisms, device testing techniques, new test systems and methods, ESD characterization, circuits, circuit design, computer-aided design (CAD) methods, and software. This course will focus on both on-chip and off-chip ESD protection solutions.

What previous participants say about this course
Answers to the question 'what did you like most about the course'

- "Very Practical" - 13 Mar 06
- "New approaches & insights in doing circuit design with ESD knowledge" - 13 Mar 06
- "ESD RF Design techniques/ RF ESD Design Systems" - 13 Mar 06
- "The presentation is simple and easy to understand" - 13 Mar 06
- "ESD structures, RF ESD Methods" - 13 Mar 06
- "ESD design (circuit) for CMOS digital tech" - 13 Mar 06
- "Up to date information" - 13 Mar 06
- "Some alternative solution in design to solve ESD issue" - 13 Mar 06
- "Innovative & creative way of looking at problems" - 13 Mar 06
- "ESD design & theory of various modeling (ESD modeling)" - 13 Mar 06

WHO SHOULD ATTEND

Technicians, engineers, circuit designers, ESD engineers, and managers involved in design, testing or reliability of analog, RF or Mixed Signal Semiconductors / circuits including:

- Design engineers
- Process engineers
- Test engineers
- Yield analysis engineers
- Product engineers
- FA engineers
- Reliability engineering
- Application engineering

PEREQUISITE

Participants should have a basic background and understanding of semiconductor technologies, device physics and some circuit design basics. Previous familiarity will be advantageous in maximizing the impact of the course on the participant. Nonetheless, these concepts will be quickly reviewed as needed.

COURSE METHODOLOGY

This course is presented in an interactive classroom style utilizing lecture, open discussion, and examples.

COURSE DURATION

2 days, 9am - 5pm

COURSE STRUCTURE

DAY 1

- RF Technology
- ESD Models and Mechanisms
- Latent Mechanisms
- Failure Mechanisms
- CMOS and ESD
- Silicon Germanium and ESD
- Gallium Arsenide and ESD

DAY 2

- RF ESD Design Methods
- RF ESD Characterization
- RF ESD Failure Criteria
- RF Testing Techniques
- RF ESD Circuits
- Circuit Design Techniques
- Computer Aided Design Methods

COURSE INSTRUCTOR(S)

Dr Steven H Voldman

Dr Voldman received his B.S. in Engineering Science from Univ. of Buffalo in 1979; Masters Degree in Electrical
Engineering (S.M. EE 1981) and the Electrical Engineer Degree (EE Degree 1982) from Massachusetts Institute of
Technology (M.I.T.); Masters of Science in Engineering Physics (MS 1986) and

Ph.D EE (1991) from University of
Vermont under IBM's Resident Study Fellow program.

Steven H. Voldman was recognized at the IBM Corporate Technical Recognition Event as a Corporate "Top Inventor"
in 2000, 2001 and 2003; as one of the top 10 inventors in IBM. In August 2002, EE Times People section discussed
his desire to invent. Steven was highlighted as the first inventor in IBM Burlington Vermont to achieve 100 patents in
2002. Steven H. Voldman was among the first groups to receive the Master Inventor Award at IBM Burlington
Vermont in 2006. In 2010, Dr. Voldman was a recipient of over 200 issued US patents, and the 67th IBM Invention Achievement Plateau Award. Dr. Voldman is a new member of InventVermont Inc., an invention organization in Burlington Vermont.

Dr Voldman is the first IEEE Fellow in the field of electrostatic discharge protection (ESD) of semiconductor devices.
He received his IEEE Fellow recognition for "contributions in ESD protection in CMOS, Silicon On Insulator and
Silicon Germanium Technology."

Dr. Voldman is an author of the five books ESD: Physics and Devices, ESD:Circuits and Devices, ESD: Radio Frequency (RF) Technology and Circuits, Latchup, and ESD: Failure Mechanisms and Models as well as a contributor to the book Silicon Germanium: Technology, Modeling and Design, and a new text Nanoelectronics: Nanowires, Molecular Electronics, and Nano-devices. Dr. Voldman also has written an article for Scientific American in October 2002.

In the ESD Association, Voldman initiated a new program called "ESD on Campus". "ESD on Campus" brings ESD
lectures to university faculty and students internationally from Malaysia, Singapore, Philippines, Thailand, Taiwan,
China and the U.S. visiting 30 universities in 3 years.

Steven Voldman provides tutorials and lectures on inventions, innovations, and patents; and has also founded a limited liability corporation (LLC) consulting business supporting ESD design, teaching, patents and patent litigation. S. Voldman served as the ESD expert witness for Acer vs Hewlett Packard.

REGISTRATION FORM
PUBLIC TRAINING PROGRAM

Course Title [Code]	**ESD Design, Characterization, Failure Mechanism and Testing of RF Technologies**		
Duration	**2 days**	Date	**2nd -3rd Aug 2010**
Venue	**Information Technology Centre, Kulim Hi-Tech Park Kulim, Kedah.**		
COMPANY INFORMATION			
Company Name / Address			
Contact Person			
Designation			
Tel			
Fax			
E-mail			

PARTICIPANT/S			
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Signature : _____ Company Stamp

Date: _____

Kindly fax / email your registration form before
For further information please call Eunice Ooi/ Celine Chang at 04-6407111/7112
Or email : euniceooi@dreamcatcher.asia/ celine@dreamcacther.asia or fax: 04-6407110