



# Silicon Valley Technical Institute

1762 Technology Drive

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[www.svtii.com](http://www.svtii.com)

## ADVANCED SEMICONDUCTOR TECHNOLOGY & FABRICATION

June 19-20, 2008

9am-4pm

Aggressive scaling of semiconductor process technology over the last several decades has resulted in creation of many new products, such as computers, camera, cell phones and information appliances. The trend is expected to continue for the next 10 years and create countless opportunities and challenges. This seminar is intended for Design, Product, Reliability, Failure Analysis, and manufacturing engineers and managers who want to increase their skill level in the Process Technologies for the coming next decade. This two day comprehensive seminar explores will cover the following topics:

### Industry background and Basic Fundamentals

- Background of Semiconductor Industry and its importance
- Moore's law and Industry Roadmap
- Fundamentals of Semiconductors
- Basic Device Physics (MOS devices and scaling)

### Front- end Processes

- Raw wafer preparation and Silicon Properties
- Oxidation
- Shallow Trench Isolation (STI)
- Deposition/Etchings of Poly and Dielectric Films

### Lithography

- Basics of Lithography
- Steppers/Scanners
- OPC/PSM
- EUV/Immersion Lithography

### Diffusion/Ion & Implantation

- Diffusion
- Ion Implantation
- Annealing and profiles

### Back End Processes

- CMP
- Silicides
- Metallization & Barrier layers( Al with Cu, and Copper)
- Via formation
- Passivation

### Value added Processes for "niche" applications

- DMOS-High Voltage
- Bi-CMOS (Si-Ge)-RF processes
- Passive components for analog/Mixed-signal usage

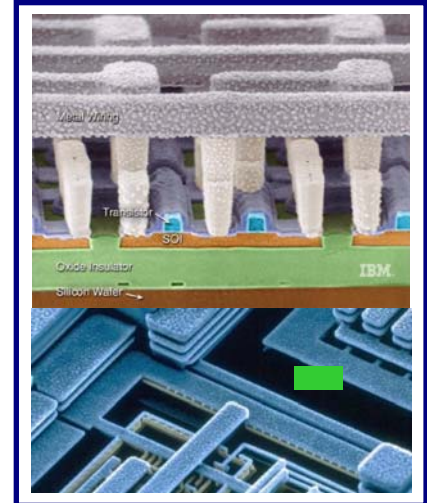
### Wafer Manufacturing (200,300mm) Foundries

- World wide Foundries
- How the chips are manufactured?
- Wafer Capacity for various Technology nodes(CMOS)
- Wafer Economics

### Emerging Processes and Devices

- High K gate oxide
- Strain Silicon and Channel Engineering
- Silicon On Insulator (SOI)
- Novel Devices

### Applications of the Silicon Technology - Current & Future



### About the Instructor:

**Dr. Kris Verma** has received Ph.D. and MBA from the university of Utah and university of Portland respectively. He is a Semiconductor industry veteran and IEEE millennium medal winner. Dr. Verma has extensive experience in semiconductor technology development and has been involved with high tech companies such as HP, Seagate, and National Semiconductor.

### Schedule

Check-in: 8:30 am –9:00 am

Lecture: 9:00 am - 5.00 pm

Lunch: noon-1:00 pm

### Tuition

Fee for the seminar is **\$760**. Group registration discounts and on-site training at your facility are also available (Call SVTII for details). The registration fee includes:

- Two days of instruction
- Seminar notes
- Certificate

**(Lunch and refreshments are provided at no extra cost)**

### Location

1762 Technology Drive, STE 227, San Jose, CA

Seating is limited. Please register in advance.

Register on-line at [www.svtii.com](http://www.svtii.com) or call

408-573-0100