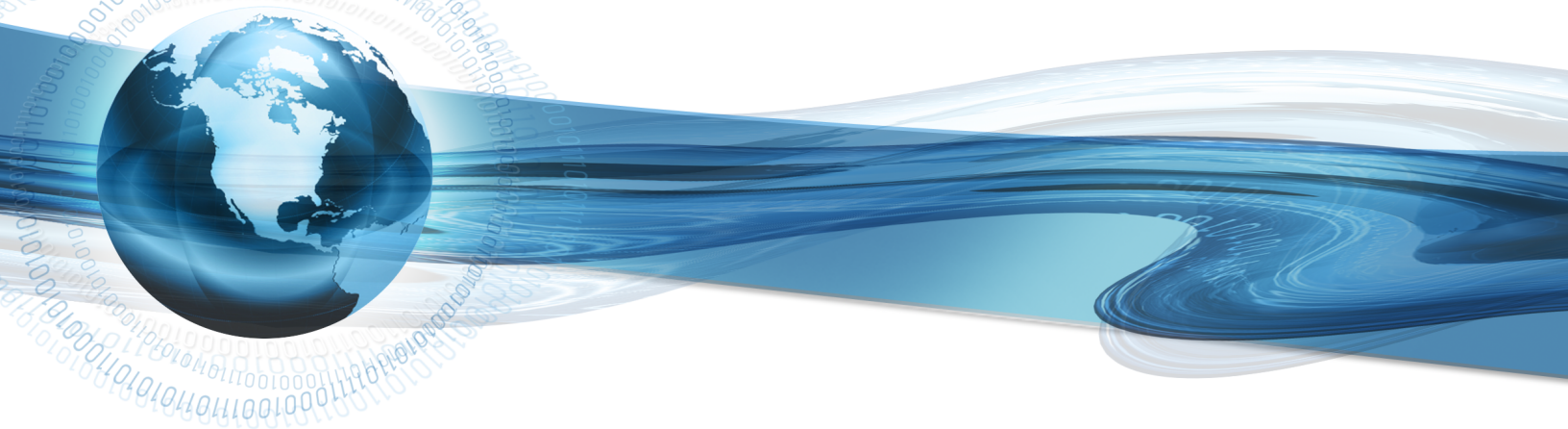
COURSE OFFERING

course title:

14/10nm FinFET Fabrication

FABRICATION DETAILS, ISSUES & SOLUTIONS



Fabricating 3D FinFET transistors presents a series of novel processing challenges ...

duration:

One Day

course brief:

This advanced course presents an accurate introducion to state-of-the-art silicon fabrication as well as a detailed step-by-step description of a 14/10nm FinFET fabrication process (both backend and fron-end processes).

Instructor:

Jerry Healey / Threshold Systems

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FinFET Fabrication

DETAILS, ISSUES, AND SOLUTIONS

course objectives:

1) to provide a detailed step-by-step description of the front-end and back-end manufacturing process flow for a 14/10nm FinFET
2) to present a detailed description of the unique structural characteristics and processing requirements for each fabrication module in a 14nm process flow
3) to introduce the changes that will be present at the 10nm node and to preview future nodes

appropriate for:

Research & Development, Device, test and process engineers, design engineers, equipment and failure anaylisis engineers, managers and other personnel who desire a deeper understanding 14nm FinFet processing.

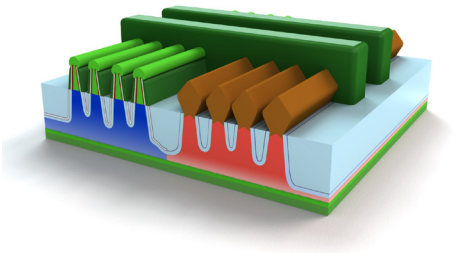
course outline:

14nm FinFET Fabrication:

- Introduction to the basic modules
- Shallow Trench Isolation & Well formation - the new reality
- Gate Fabrication: Self-Aligned Double Patterning (SADP)
- Fin Fabrication: Self-Aligned Quadruple Patterning (SAQP)
- FinFET gate-last Hi-k/Metal Gate integration methodology
- Replacement gate metallurgy & integration strategies for FinFETs
- Strained silicon using SiC and SiGe replacement Source/Drains
- Titanium "Salicidation" integration methodology
- Key FinFET fabrication issues and their solutions
- Litho-Etch-Litho-Etch (LELE) Double patterning
- SADP for the first four layers of metal
- Cobalt contacts and metal lines
- Air gap dielectrics
- Back-end capacitor formation details

The Future:

- How will the 10nm FinFET differ from the 14nm FinFET?
- What options are available for the 10nm node?
- 10nm Performance gains



The course content is presented in a clear, highly visual and easy-to-understand manner. It is taught by a world-class instructor who has 30 years of hands-on experience in the field of silicon fabrication and who is an award winning public speaker.

The course notes are technically current, reproduced in high resolution color and profusely illustrated with high-quality 3D graphics and TEMs of real-world devices.

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