Geneva College Speaker Series

Joshua Tygert: Computer Engineering

Sr. Applications Engineer, Cadence Design Systems

4/13/2021

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Industries

Technologies

Learn about the solutions to these industries' leading design challenges

5G Communications

Aerospace and Defense

Automotive

AI / Machine Learning

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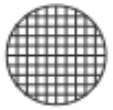
Industries

Technologies

Learn about technologies that address the industry's leading design challenges

3D-IC Design



Advanced Node

Arm-Based Solutions

Cloud Solutions

Low Power

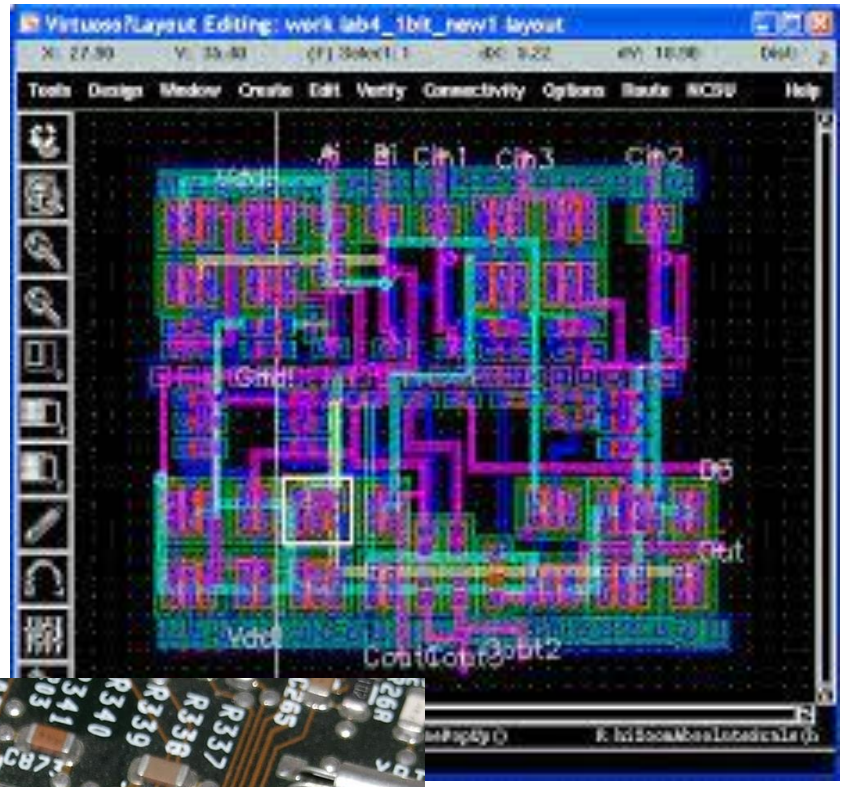
Mixed Signal

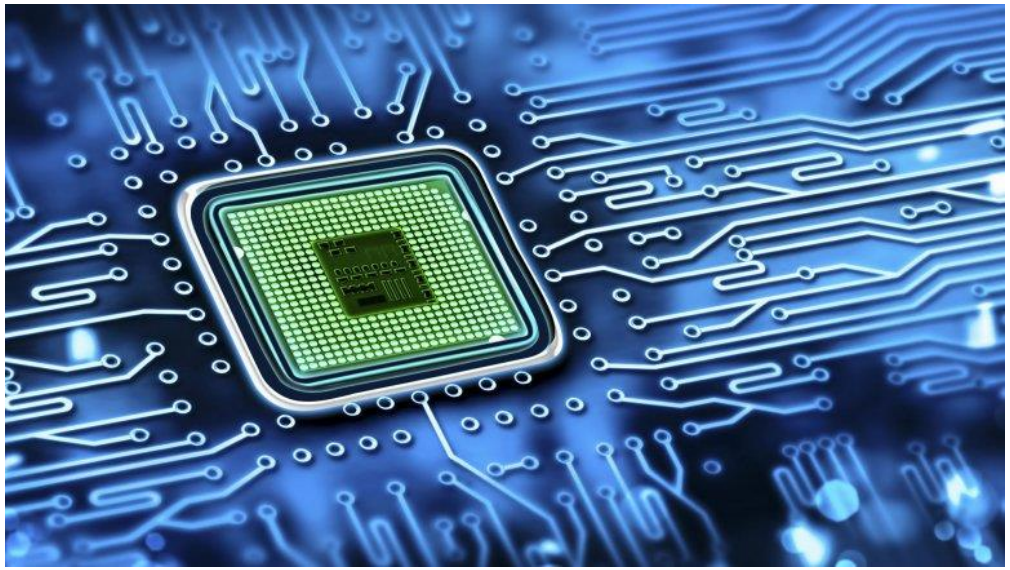
Photonics

RF/Microwave

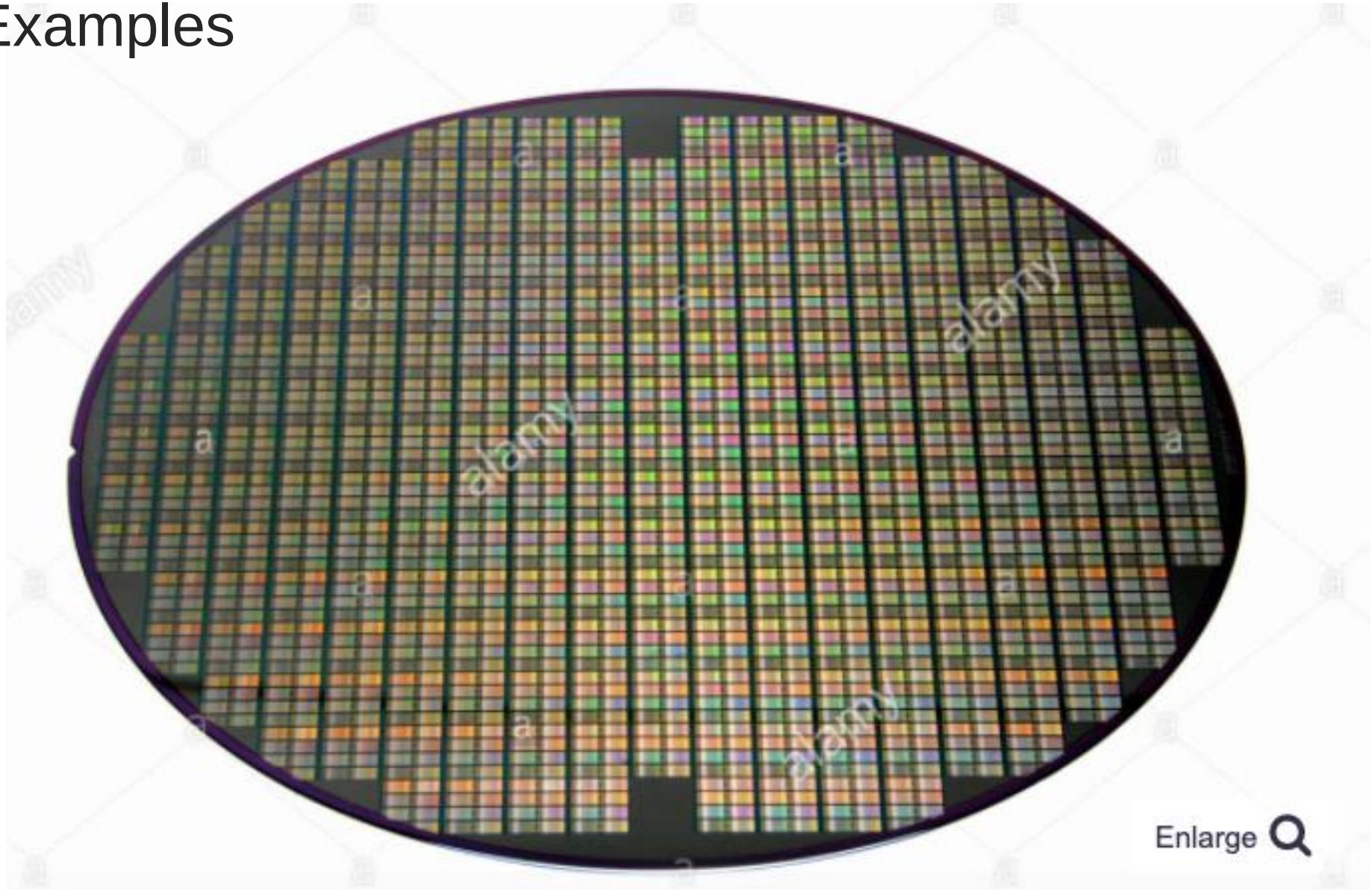
Very Large Scale Integration

Very large-scale integration is the process of creating an integrated circuit by combining millions of MOS transistors onto a single chip. VLSI began in the 1970s when MOS integrated circuit chips were widely adopted, enabling complex semiconductor and telecommunication technologies to be developed.

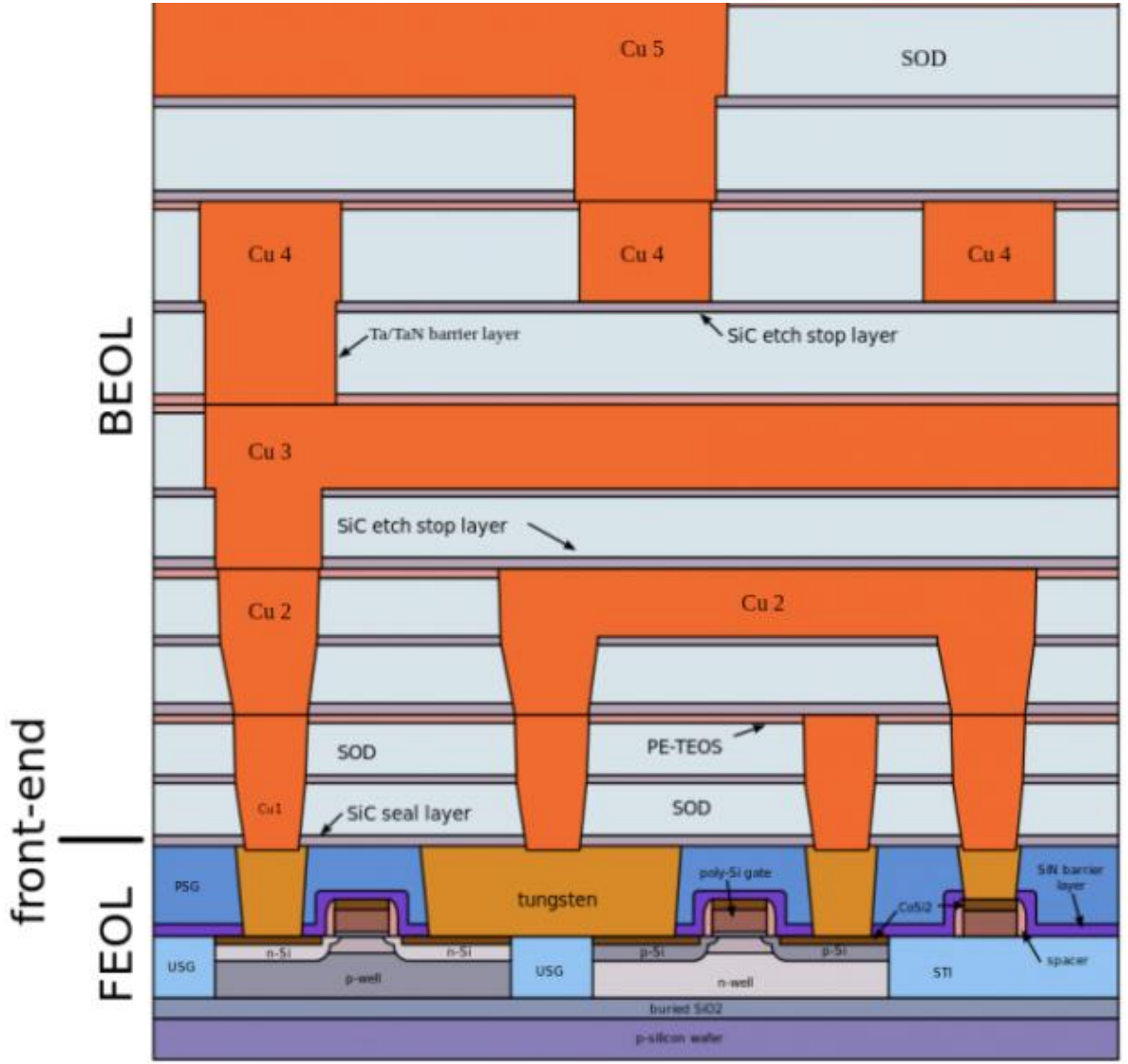




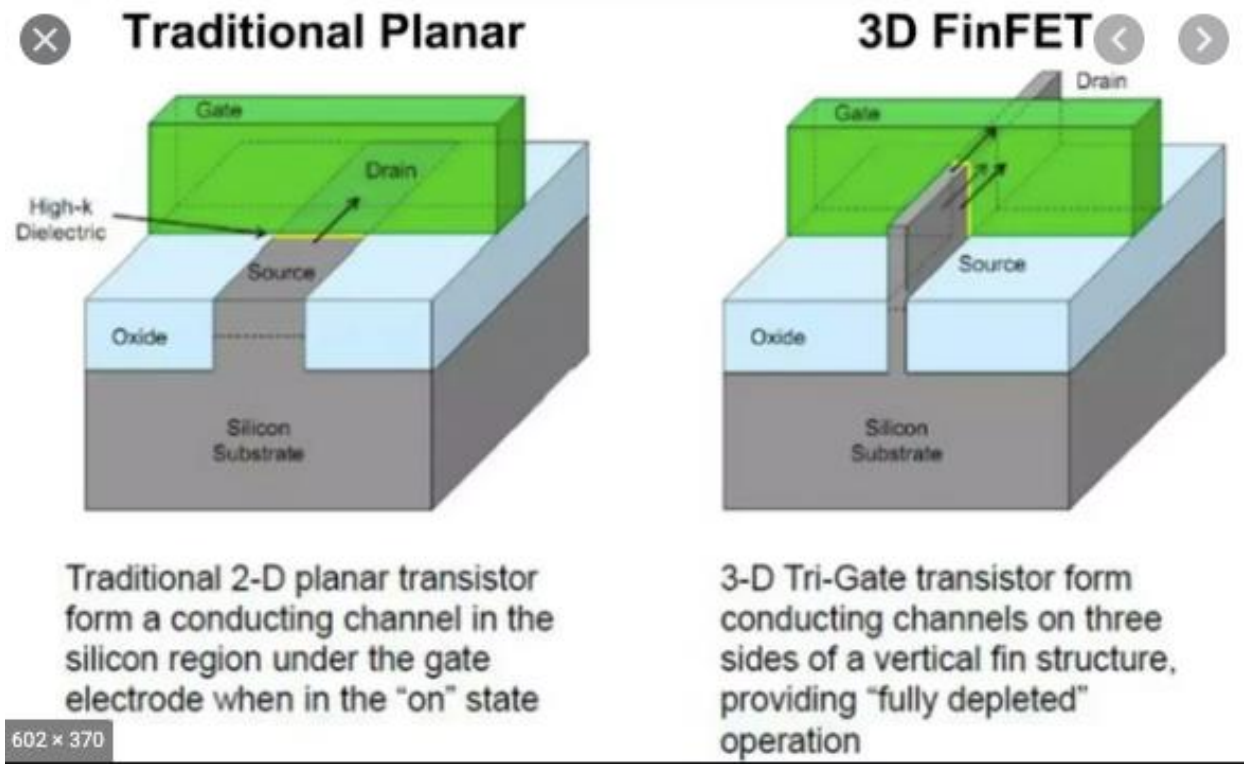
VLSI: Examples

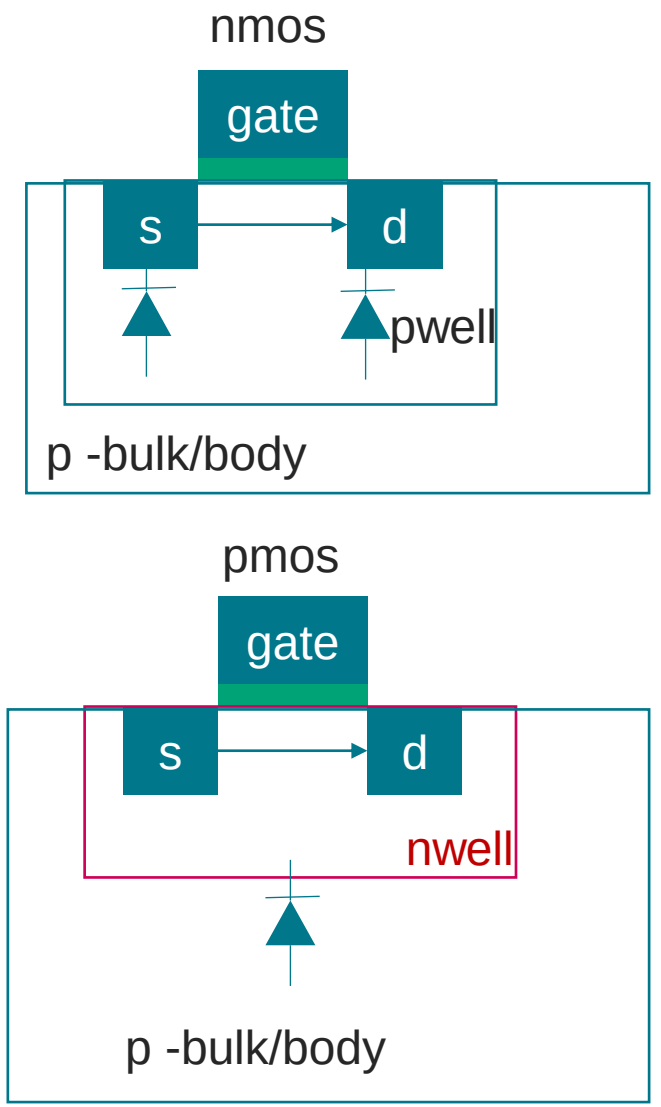


The stack



Planar vs Fin FETs





Semiconductor processing

An etch system shapes the thin film into a desired patterns using liquid chemicals, reaction gases or ion chemical reaction. An etch system is used in manufacturing lines for semiconductors and other electronic devices.
Fig. 7-1 shows the flow of the etching process.

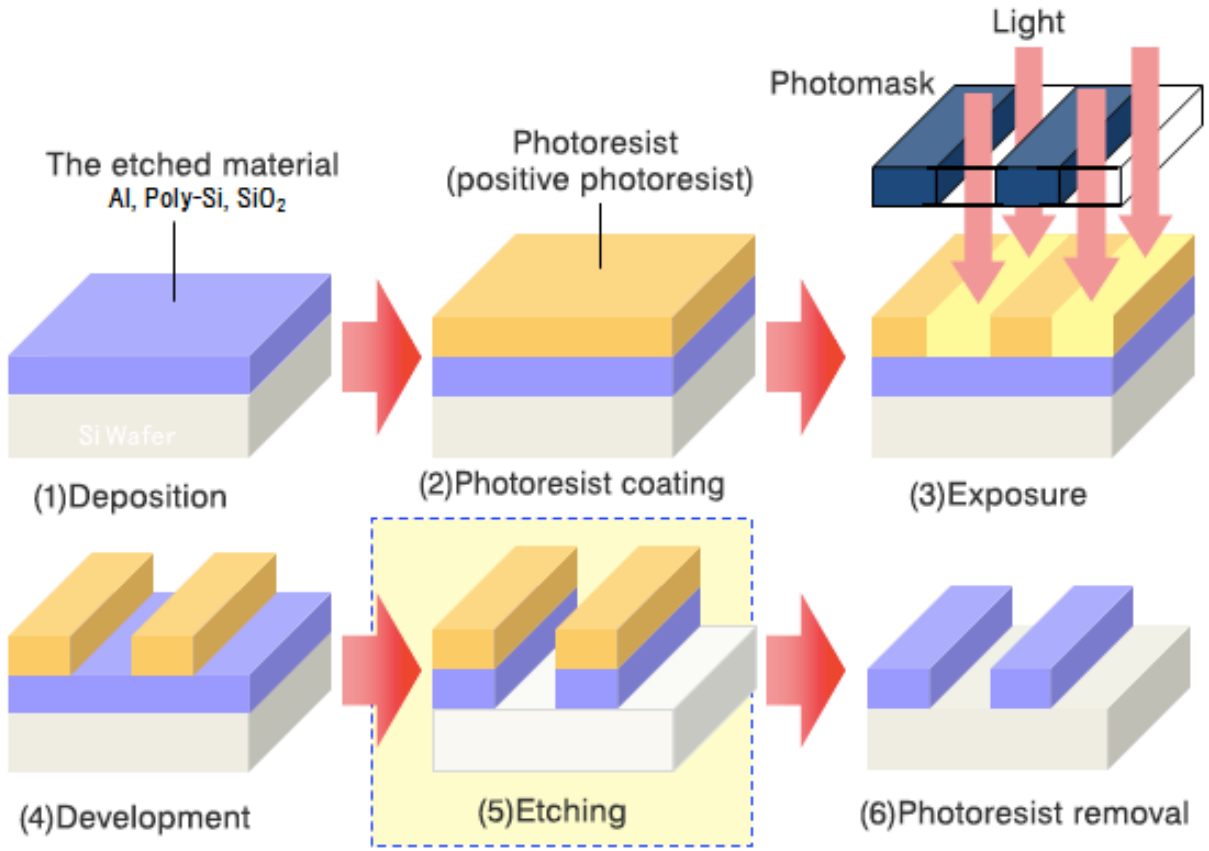
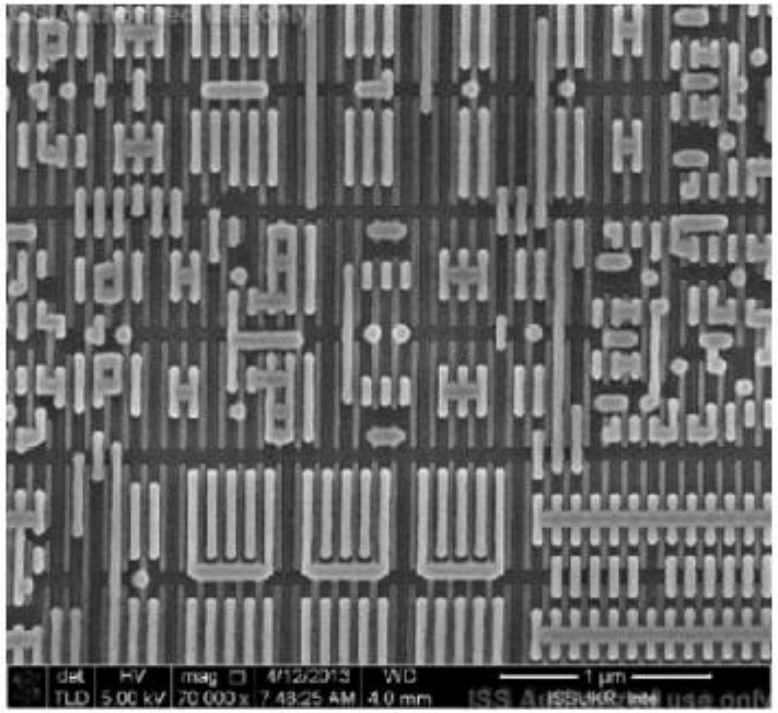
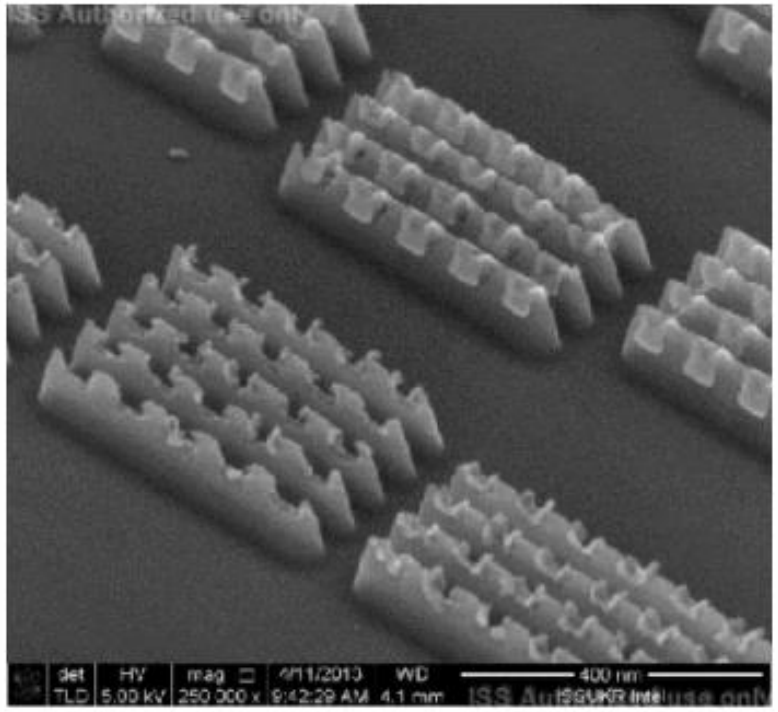


Fig.7-1. Flow of the etching process

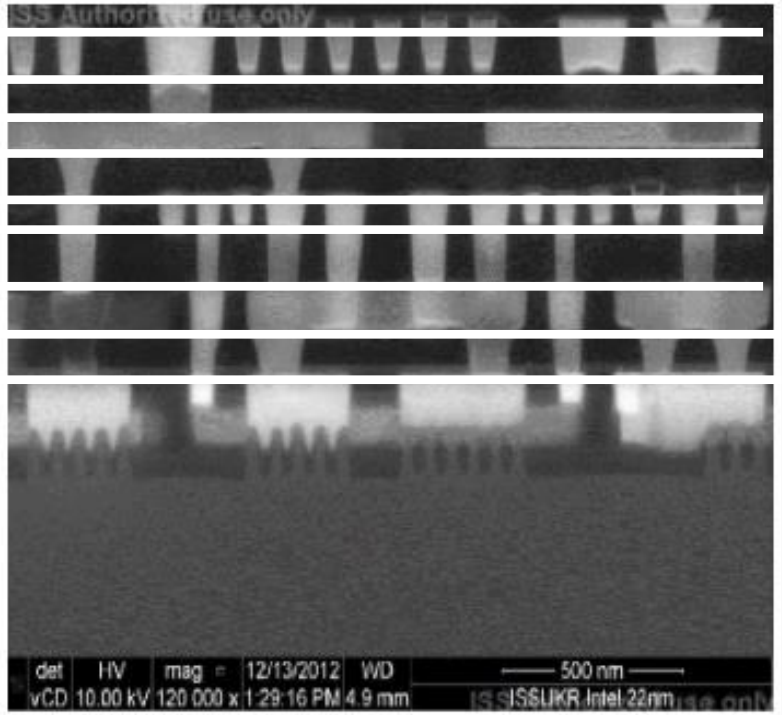
Scanning Electron Microscope Images



SEM top-down view of redistributive tungsten layer



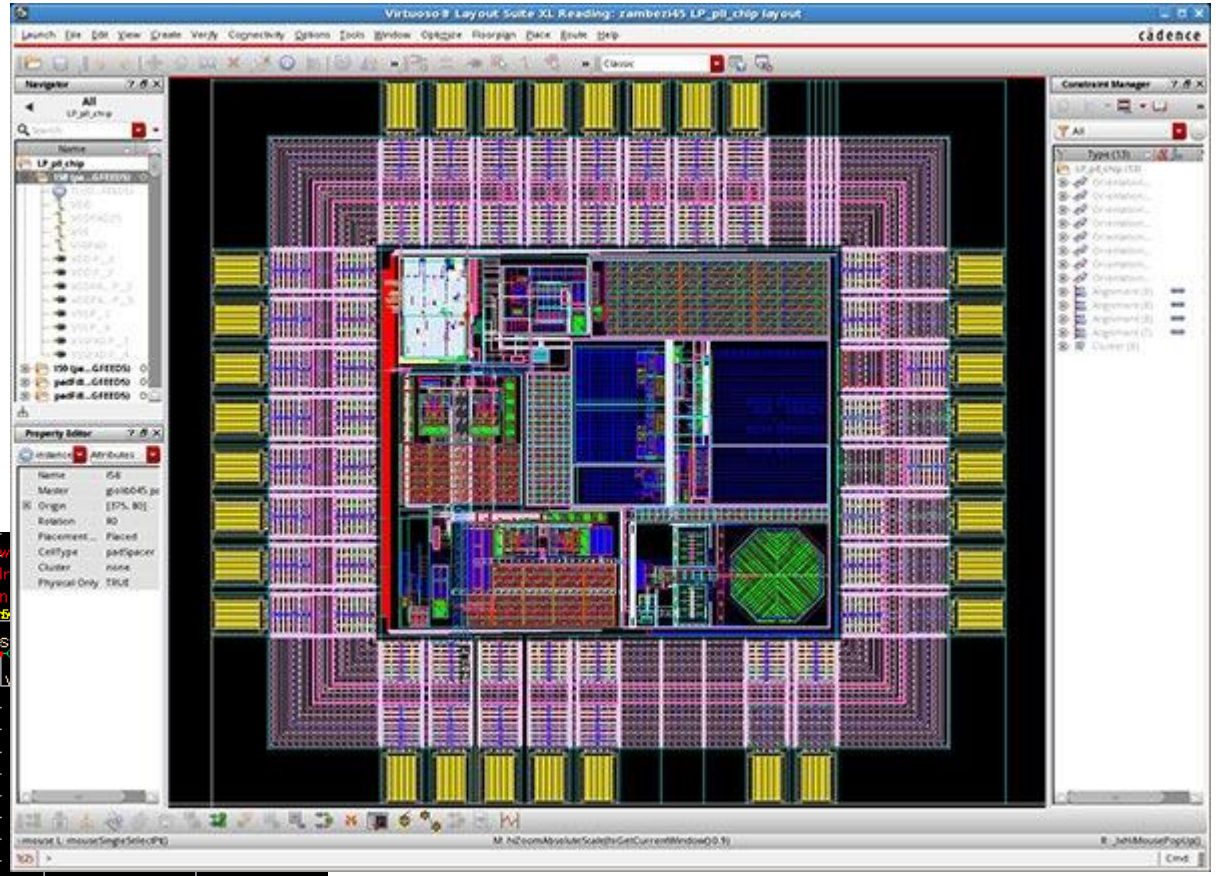
SEM tilted view of Tri-gate fingers

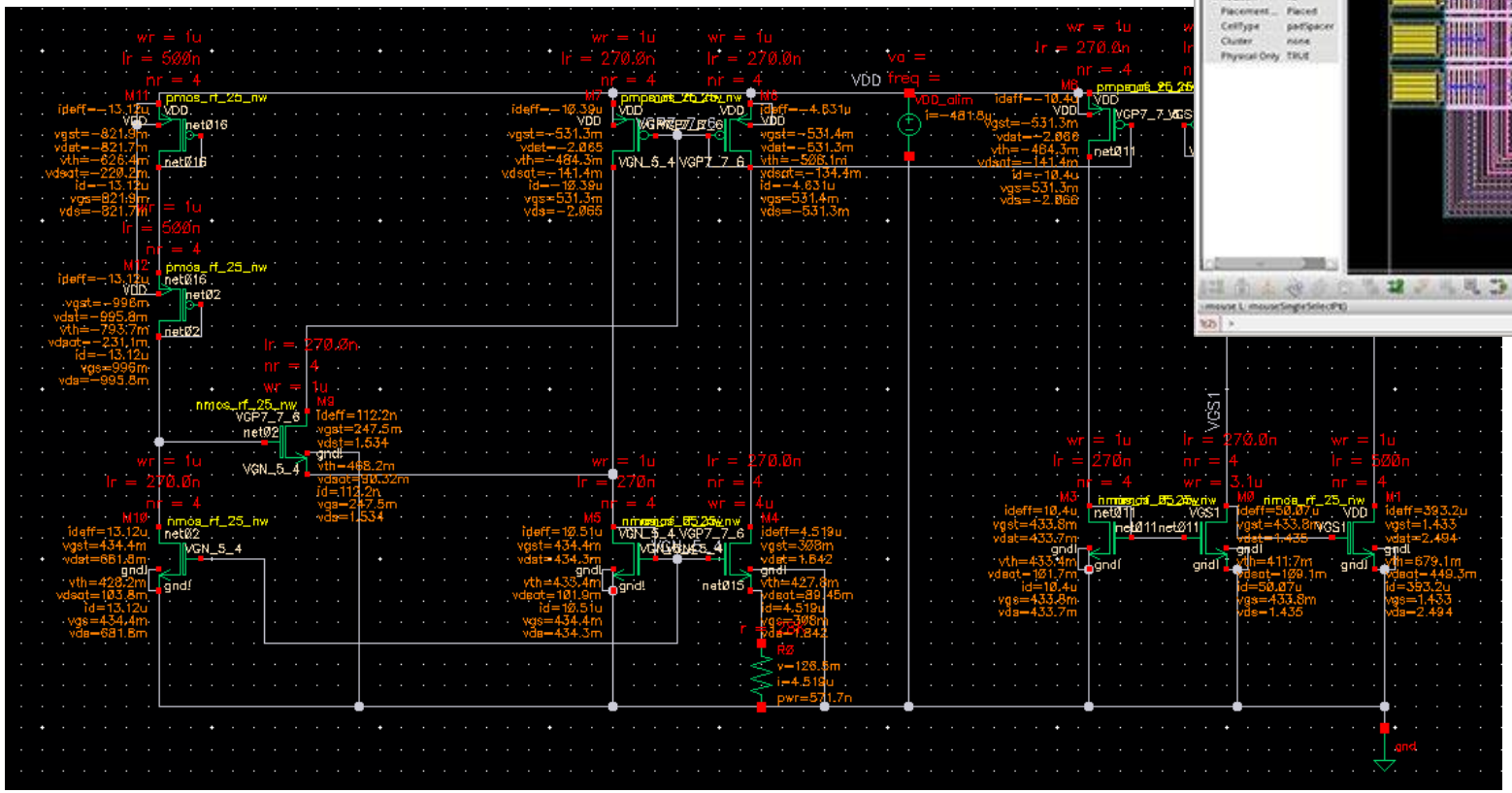


SEM section of Tri-gate transistors across fins

Virtuoso:

Schematic and Layout Editor





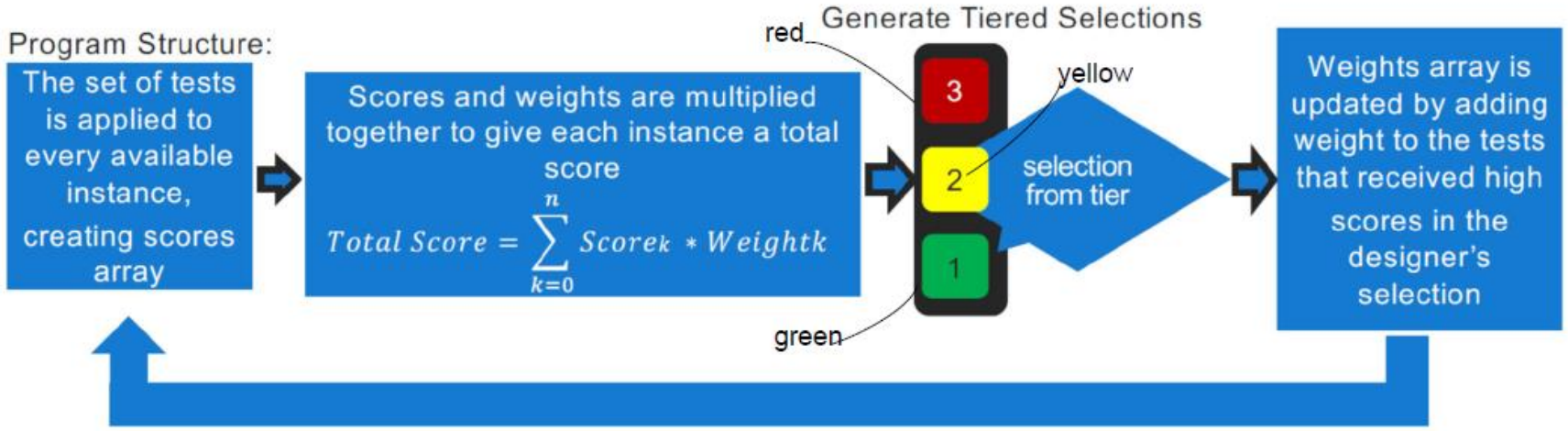
North America: FAST

Focused Accounts Solutions Team

Intern -> Sr. Application Engineer

Writing software and programs for various customer needs

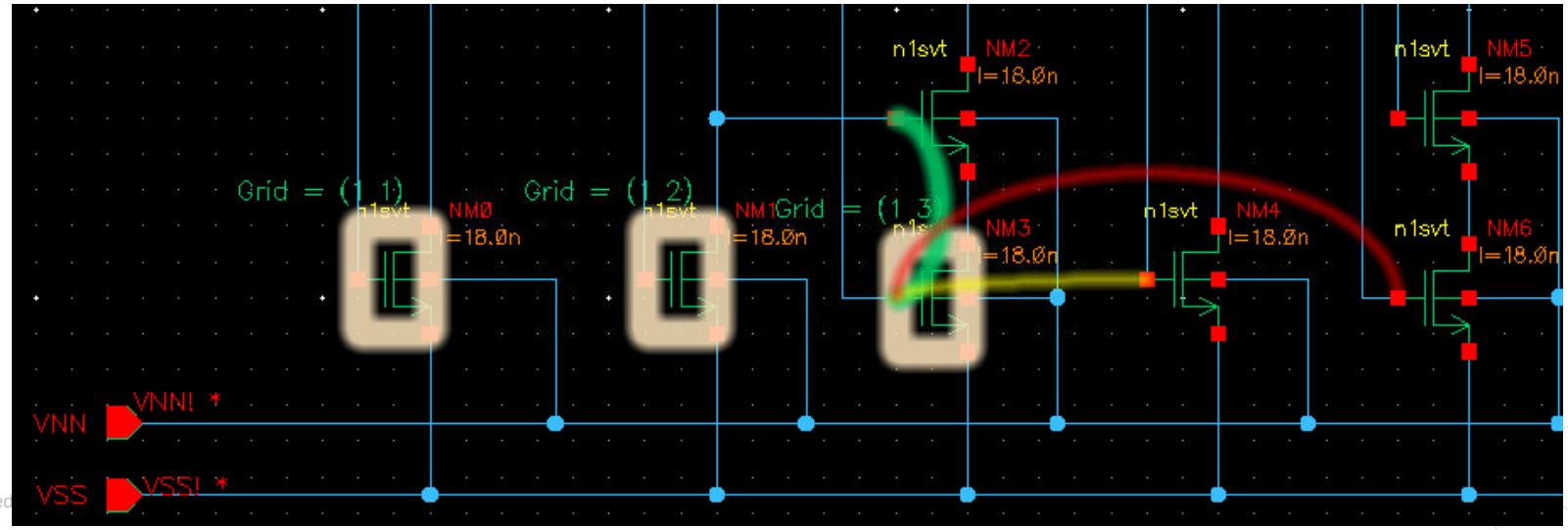
Machine Learning Project



Patent Pending:

"System and Method for Device Placement"

Data Set					
scores	Score 1	Score 2	Score 3	Score 4	Score 5
weights	Weight 1	Weight 2	Weight 3	Weight 4	Weight 5



Getting That First Job: Tips and Tricks

1. Network
2. Side Projects
3. Network (more)
4. Interview: Prepare personal summary, be passionate, honest, Get to Know Company, have good questions,