

# Sun City Computer Club

Cyber Security SIG Seminar Series

## Semiconductor Chips



- [Audio Recording of this session](#)
- Use the link above to access MP4 audio recording



- Mostek 1974 – 1983 50 years ago
- BS Physics 1971
- MS Mathematics 1975
- Graduate Research Center of the Southwest 1972-1975  
Solid State Physics

**Me**



- Founded 1969
- Spin-off Texas Instruments NMOS  
Negative Metal Oxide Semiconductor
- Pure silicon weak electrical conductor  
Germanium Carbon
- Doping Phosphorus Arsenic N-type  
Boron Gallium P-type  
Wafer Diffusion Ion Implantation
- Calculators Memory Telecom
- DRAM SRAM ROM E-ROM
- Multiplex addressing CAS RAS

**Mostek**



- Telecom
- Microprocessor
  - Zilog Z-80
  - Second Source Intel 8086
    - Motorola 68000
  - Memory Systems - Printing Money
  - Plants Ireland & Malaysia
  - Own law department, travel, R&D
  - R & D
  - Single Board Computer
  - Edison

**Mostek**



- Creating Helpful Incentives to Produce Semiconductors for America (CHIPS) Act
- Silicon one of most abundant elements
- Spruce Pine, North Carolina
- Wafer Silicon + Boron + Phosphorus
- Boule extracted via seeding
- Sliced by wafer saw polished
- Thousands of steps Months
- Supervisory System
- Non-functional circuits
- Reverse engineering
- Isolated slab

## Making chips



- FAB lights – tuned for chip
- Humans are filthy
- Front end Back end Burn in
- Front end testing
  - Whole wafer Testing Alignment pads
  - Inking
- Back end testing
  - Binning

## Making Chips



- Design Rule checks
- Larger diameter wafers => more chips
- Layer on Layer on Layer ...

Disposition

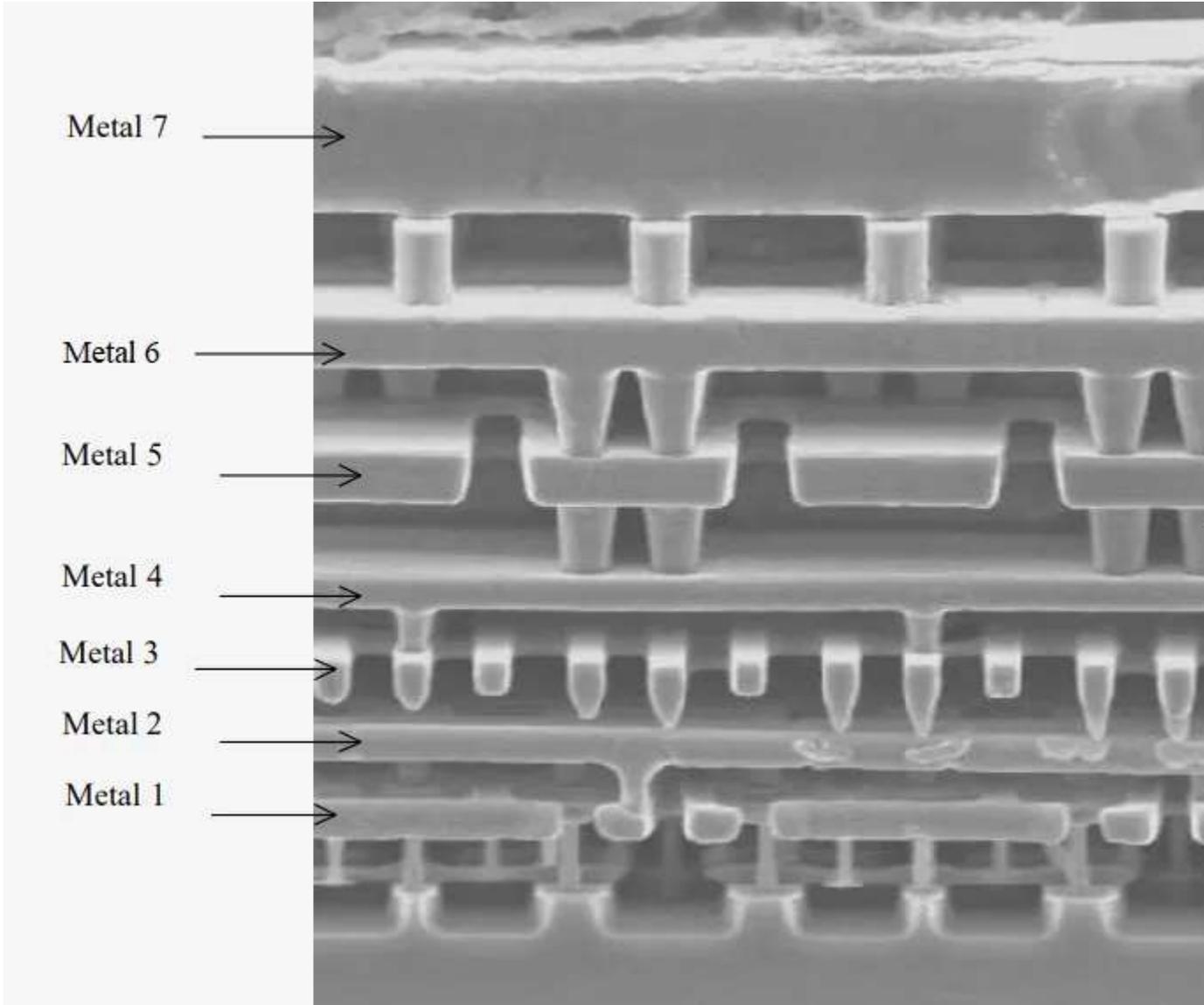
Photoresist

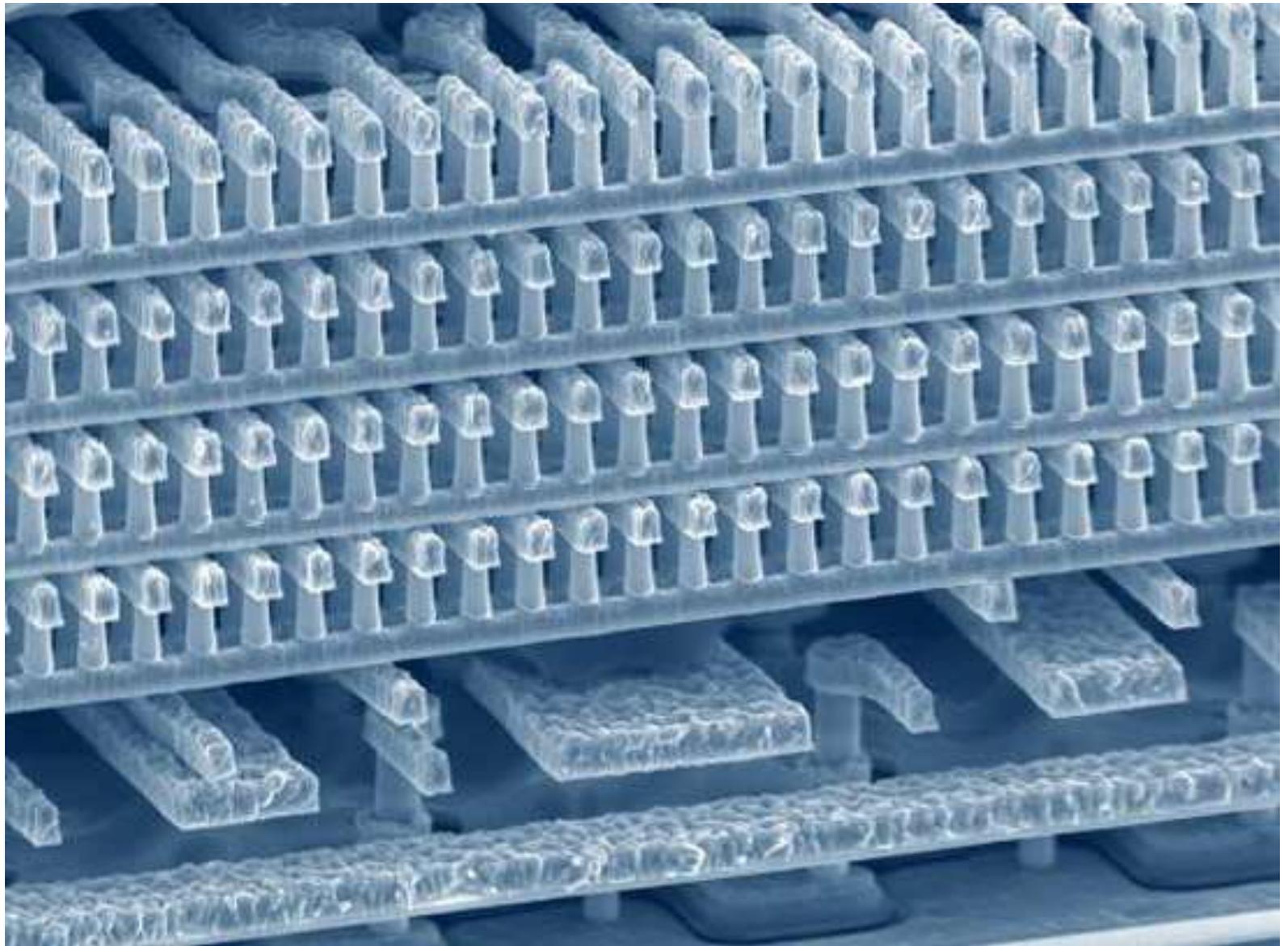
photolithography

# Making chips









- time equipment talent
- Gate Arrays
- Yield

**COMPLEX**



- Automotive tire pressure monitoring
- Chip
- And radio
- And semi unique radio Identifier
- Change tire    Change car monitoring
- Can be used to track or verify car

**Fun Fact**



- Our thanks for viewing a presentation  
In Cyber Security SIG Seminar Series
- Topic suggestions are most welcome
- Chromebook
- Survey of some social media outlets  
Which to choose for what & when

[sccocyber@gmail.com](mailto:sccocyber@gmail.com)

