



# Wright State University

EE480/680

Micro-Electro-Mechanical Systems (MEMS)

Summer 2006



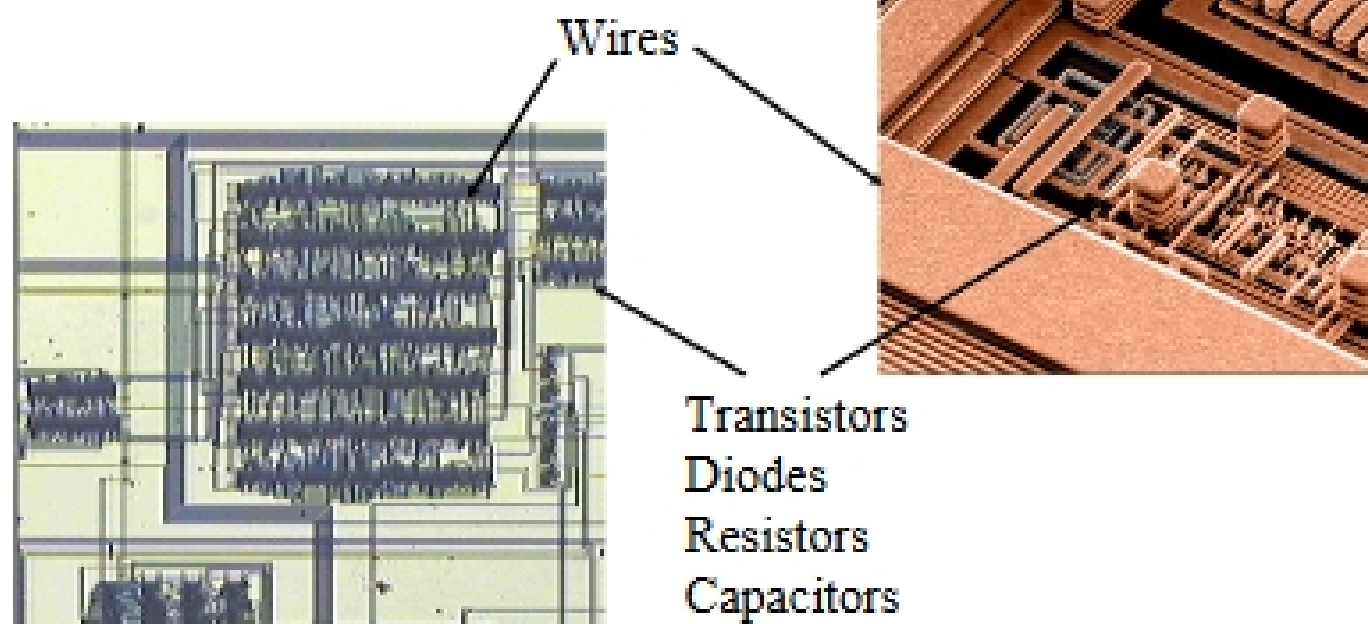
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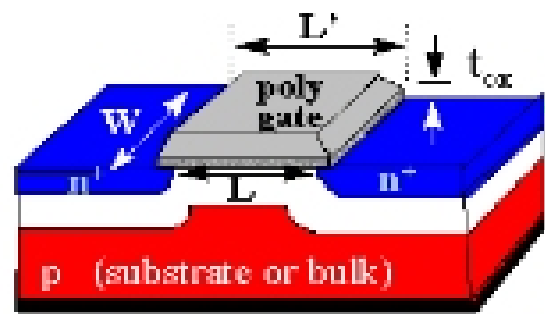
## Microelectronics/MEMS

IBM

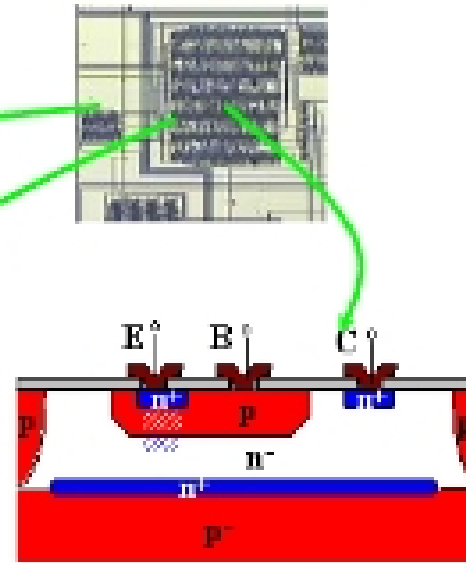
- How are they made?
- What are they made out of?
- How do their materials behave?



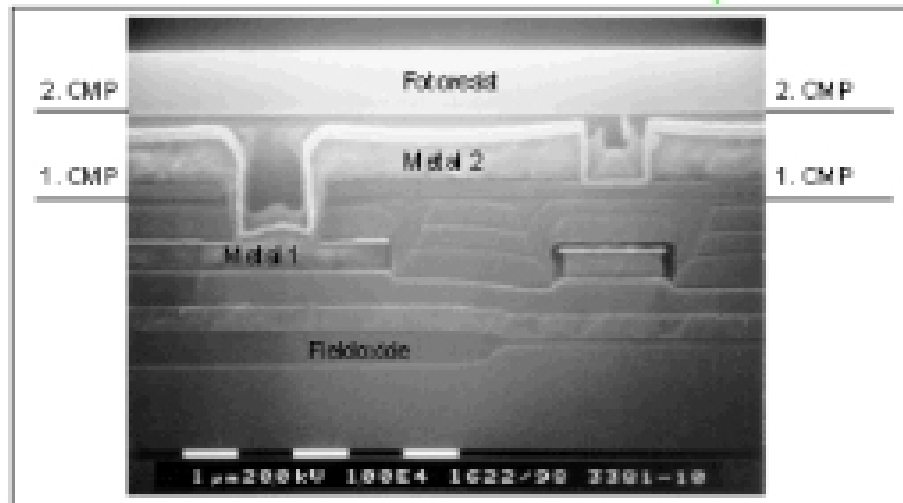
# Microelectronics



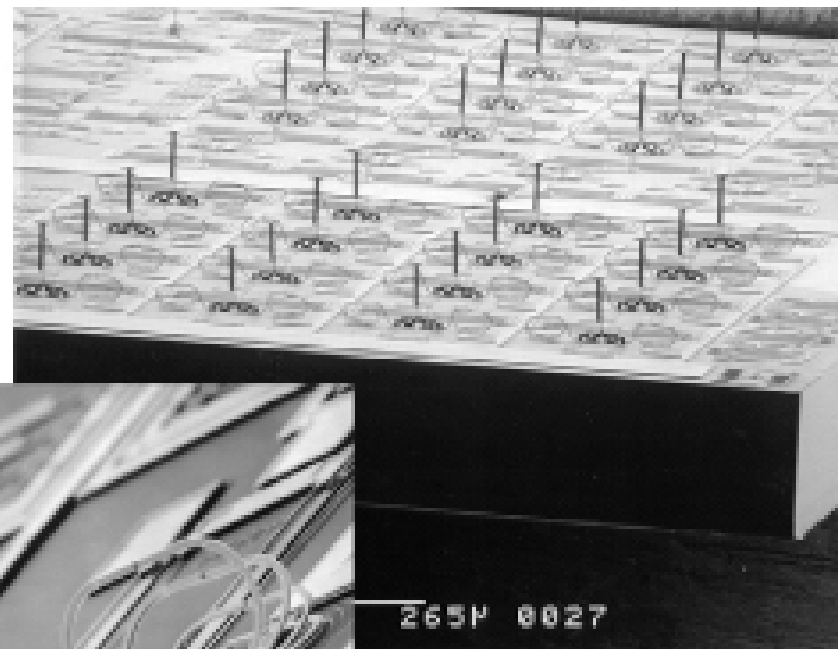
Si MOSFET



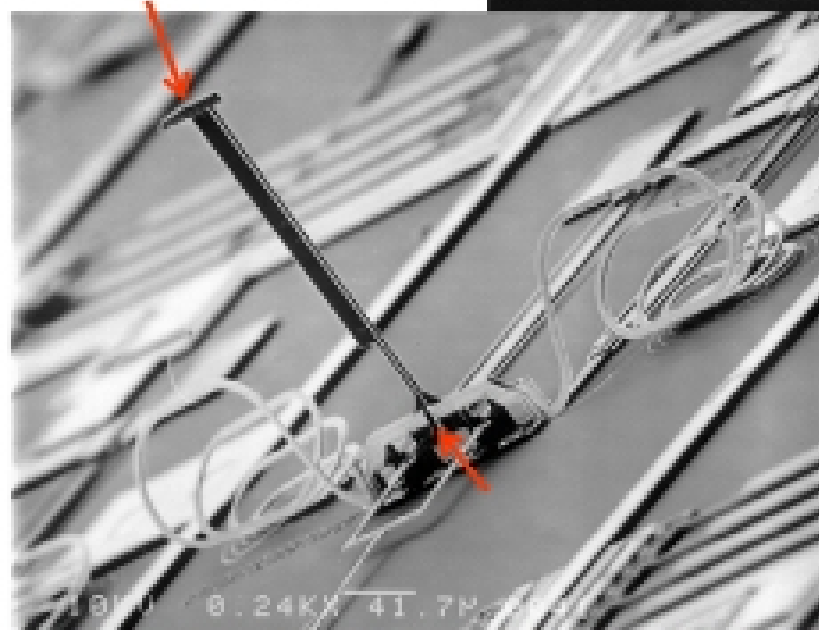
Si BJT



# MEMS



270 μm



## Course Outline

- Semiconductor Materials
- Crystal structure, growth, & epitaxy
- Film formation – oxidation & deposition
- Metalization
- Lithography & etching
- Impurity doping – diffusion & implantation
- Lithography
- Etching
- Resistivity Measurement
- Other Techniques

## Periodic Table of the Elements

The periodic table is color-coded by groups and states of matter. The legend indicates the following categories:

- Alkali metals:** Orange
- Alkaline earth metals:** Yellow
- Transition metals:** Pink
- Lanthanide series:** Light blue
- Actinide series:** Purple
- Post metals:** Light green
- Nonmetals:** Green
- Noble gases:** Cyan
- Solid:** White box
- Liquid:** Green box
- Gas:** Red box
- Synthetic:** Black box

Atomic masses in parentheses are those of the most stable or common isotope.