

Oral Qualifying Exam - Electronic Materials Processing

The material covered for the Electronic Materials Processing Oral Exam include topics covered by the following texts and a partial list given below.

Recommended texts for review:

G. E. Anner, Planar Processing Primer (ECE 444 textbook)
Angus Rockett "The Materials Science of Semiconductors" (Springer, 2008)

Topics

Properties and operating principles of semiconductor devices
Fabrication of semiconductor wafers
X-ray and electron diffraction for electronic materials
Electronic structure of semiconductors
Semiconductor alloys
Defects in semiconductors and their electronic effects
Amorphous semiconductors
Organic electronic materials
Process integration
Oxidation
Photolithography
Etching processes
Junction diffusion
Chemical vapor deposition
Sputter deposition
Molecular Beam Epitaxy