

4.2.3 Summary to: 4.2 Other Semiconductor Growth Technologies

▶ Growing single crystals of compound semiconductors is far more difficult than for elemental semiconductors

- Precise stoichiometry is important
- Vapor pressures of the constituents at the melting point might be very different
- New kinds of defects might be encountered
- Polytypes might be encountered

▶ Major techniques are

- Encapsulated CZ
- Sublimation growth

GaAs:
150 mm wafers, encapsulation technique, disl. density ($10^3 - 10^6$) cm^{-2}

GaP, InP
as **GaAs** but smaller and more expensive

SiC:
100 mm wafers, sublimation technique, several polytypes available, "pipe" defects

Exercise 4.2-1

All Questions to 4.2