

Energy band diagram and carrier concentration profile for a Si-Methane system.

Energy Levels (Eg): 2.0eV, 1.95 eV, 1.9eV, 1.65eV, 1.30eV.

Carrier Concentrations: n, i, i, p, i, i', i'', n.

Bandgap

Carrier Concentration Profiles:

- Topdiode:**
 - Layer 1: Si/Methan, $20\text{sccm}/20\text{sccm}$
 - Layer 2: Si/Methan, $4\text{sccm}/4\text{sccm}$ + 180sccm H_2
- Bottomdiode:**
 - Layer 3: a-Si(C)
 - Layer 4: a-Si_{1-x}Ge_x, x=5%
 - Layer 5: a-Si_{1-x}Ge_x, x=20%

Carrier Concentration Formulas:

- Topdiode:** $(\mu\tau)_{\text{Top}}^I < (\mu\tau)_{\text{Top}}^{II}$
- Bottomdiode:** $(\mu\tau)_{\text{Bot}}^{III} > (\mu\tau)_{\text{Bot}}^{IV} > (\mu\tau)_{\text{Bot}}^V$

Legend: $\mu\tau$ - Pr output, $\mu\tau$ - PRODUCT