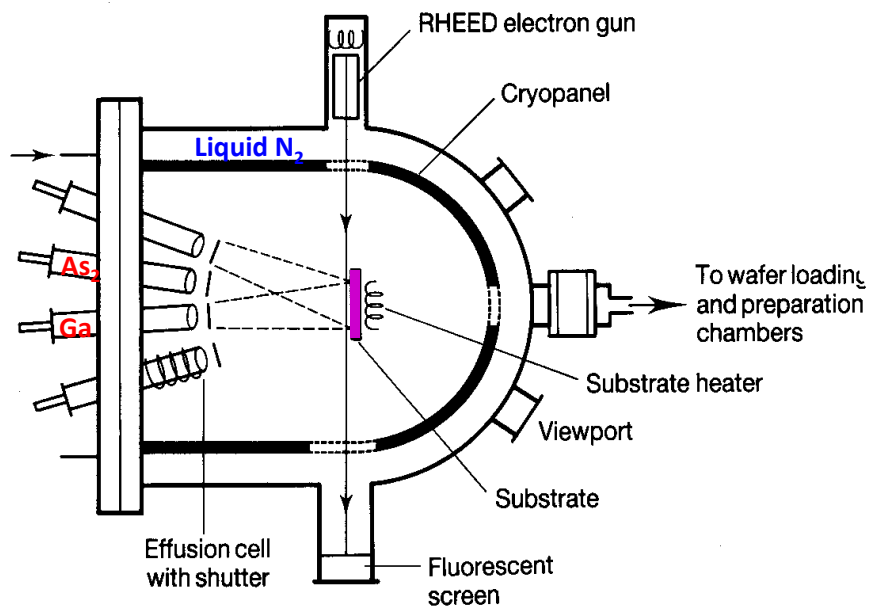
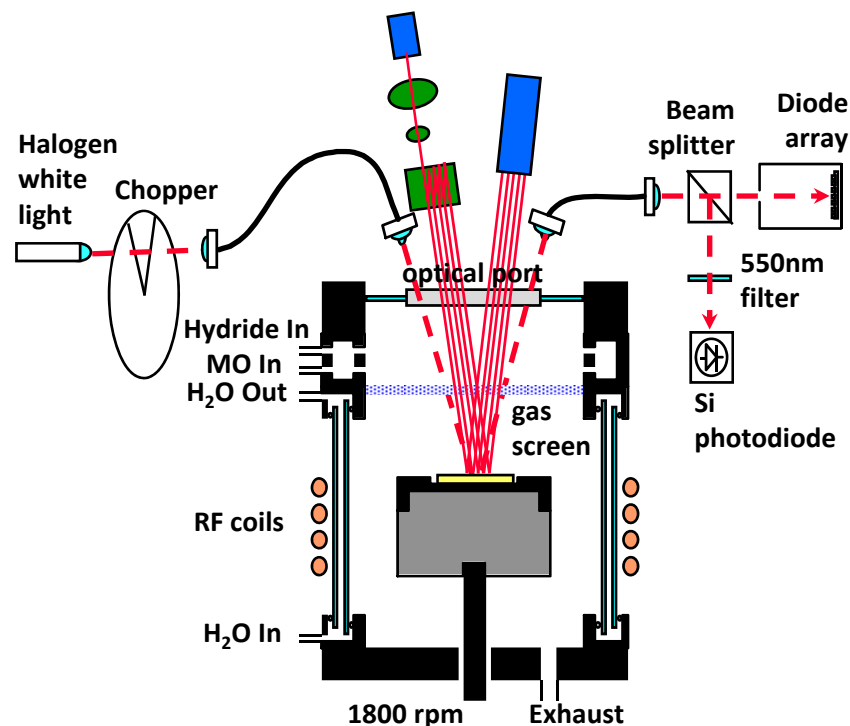


Precision epitaxy is the key to III-V compound semiconductor devices

Molecular Beam Epitaxy (MBE)



Metalorganic Chemical Vapor Deposition (MOCVD)



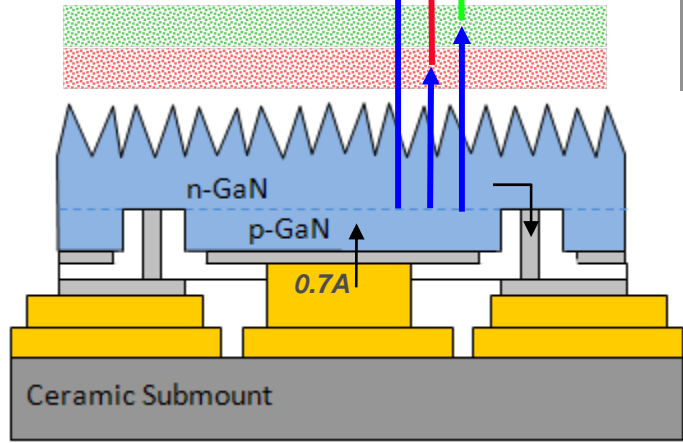
Anatomy of state-of-art solid-state lighting chip

Efficiency	= 16%
Luminous efficacy	= 66 lm/W
CRI	= 85
CCT	= 3,100K



Spectral	78%
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Phosphor/Package	54%
Internal quantum effic	90%
Stokes deficit	76%
Scattering/absorption	80%



Thin-Film Flip Chip (TFFC)
schematic courtesy of Jon Wierer

Blue LED	38%
Joule	90%
IQE at low power	75%
Droop at high power	70%
Light extraction	80%

Solid-state lighting is coming: watch out...!

