

APPLICATION NOTE

AlGaInP / GaInP MQW SHOWS EXCELLENT UNIFORMITIES

MBE49 Production System

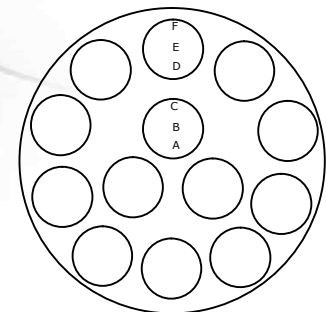
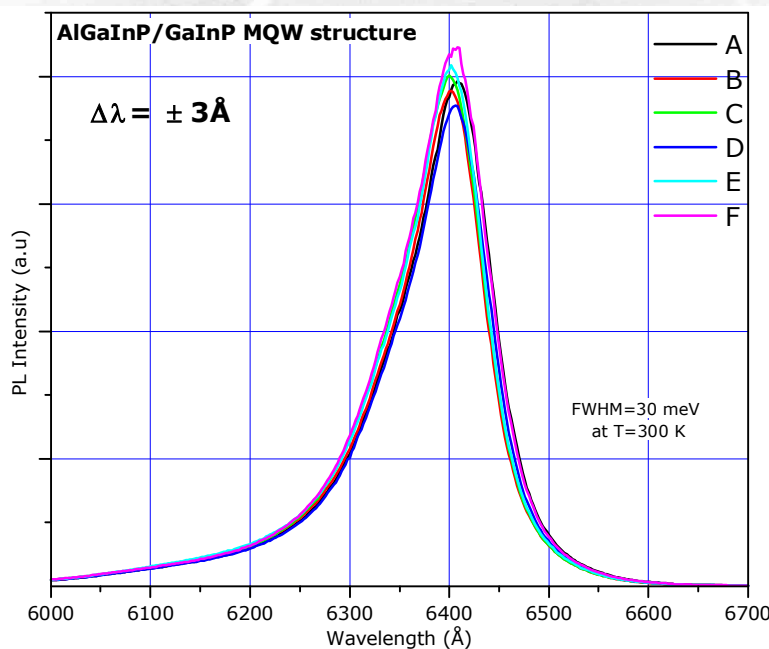
AlGaInP quaternary alloy, due to its wavelength emitting range (630-690 nm), is a key material in the growth of CD and DVD laser diodes.

Growth and structure characterization were performed by the Riber Application Laboratory, using the Riber MBE49 (multi-4") production system, equipped with the double filament effusion cell, Model ABN700DF, for Ga, Al, In, and with the phosphorus valved cracker cell, Model KPC1200.

Results:

The AlGaInP/InGaP multi-quantum wells were grown on 2", GaAs(Si) substrates, at 480 °C. Based on photoluminescence measurements over the entire 13x2" platen, the structure exhibits:

- $\Delta\lambda/\lambda = \pm 0.06\%$ demonstrating the excellent thickness and composition uniformities of the samples.



13x2" platen

Platen position	Wavelength (Å)
15	6404
32.5	6402
47	6402
70	6408
88	6402
102	6406

Distance from center to edge

Ga _{0.51} In _{0.48} P	Q.0.7
(Al _{0.2} Ga _{0.3}) _{0.51} In _{0.48} P	Q.0.7
AlGaInP	Q.0.5
AlGaInP	Barrier
GaInP	Strained QW
AlGaInP	Barrier
GaInP	Strained QW
AlGaInP	Barrier
GaInP	Strained QW
AlGaInP	Barrier
GaInP	Strained QW
AlGaInP	Q.0.5
Q.0.7 → Q.0.5 gradual layer	
(Al _{0.2} Ga _{0.3}) _{0.51} In _{0.48} P	Q.0.7
GaAs	
GaAs(Si)	

For more information please contact info@riber.com