

APPLICATION NOTE

# EXCELLENCE IN OPTICAL QUALITY PERFORMANCES

## MBE49 Production System

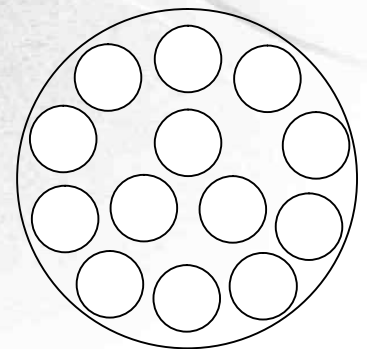
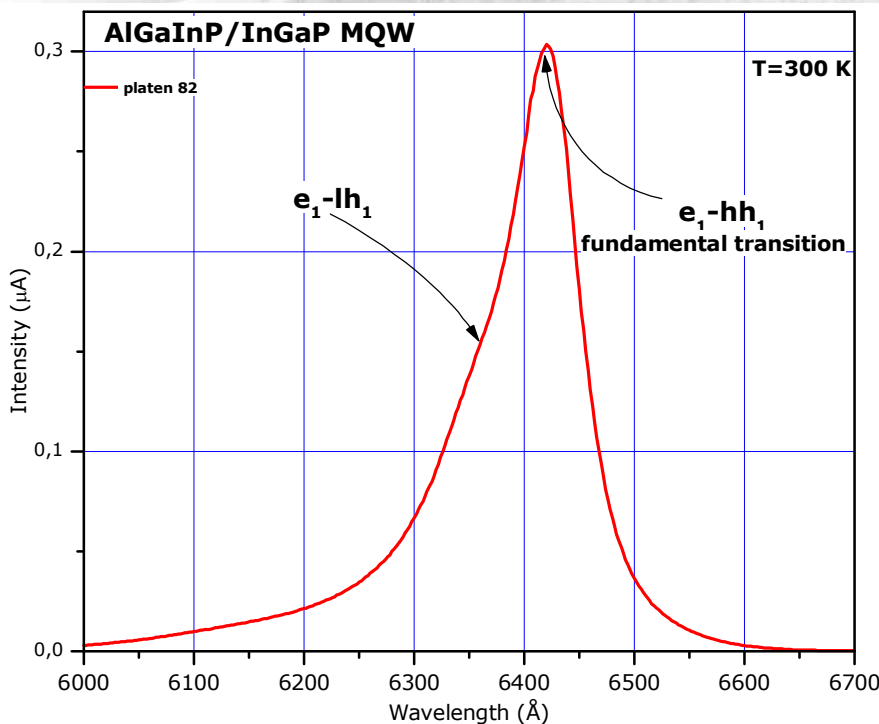
AlGaInP quaternary alloy, due to its wavelength emitting range (630 – 690 nm), is a key material for the growth of CD and DVD laser diodes

Growths and structure characterizations were performed by the Riber Application Laboratory, using the Riber MBE49 system with ABN700 effusion cells (Ga, In, Al) and the KPC1200 phosphorus valved cracker cell.

**Results:**

AlGaInP/GaInP quantum well structures were grown on 2", GaAs(Si) substrates. Based on photoluminescence measurements on a 13x2" platen, the structure exhibits:

Optical transitions involving fundamental and higher interband excitons ( $e_1hh_1$  &  $e_1lh_1$  respectively) demonstrating the excellent optical quality of the wafers.



13x2" platen

Ga <sub>0.515</sub> In <sub>0.485</sub> P	
(Al <sub>0.7</sub> Ga <sub>0.3</sub> ) <sub>0.515</sub> In <sub>0.485</sub> P	Q.0.7
Q.0.5 → Q.0.7 gradual layer	
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 <sub>0.7</sub> Ga <sub>0.3</sub> ) <sub>0.515</sub> In <sub>0.485</sub> P	Q.0.7
GaAs	
GaAs(Si)	

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