

CHARACTERIZATION OF ZnS/ZnSe QUANTUM
WELLS GROWN BY PHOTOASSISTED VAPOUR
PHASE EPITAXY

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Research into light emitting applications for ZnSe/ZnS materials presently centers on the materials grown epitaxially by either MOVPE or MBE techniques. If a simpler technique could be found to reproduce the material quality obtained by MBE or MOVPE, this would be preferred. This paper reports the growth of good quality ZnS/ZnSe quantum well structures on GaAs at very low temperatures by the technique of photoassisted vapour phase epitaxy (PAVPE). The structures were assessed by low temperature photoluminescence and Raman spectroscopy. Both techniques show the effects of reduced dimensionality. A new lattice dynamic model appropriate for strained systems is used to derive the ZnSe strain state and well width for the samples studied.