

MOVPE growth of high-quality ZnO

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ZnO is a promising semiconductor for short wavelength light emitters and sensors. We present the growth of ZnO by metalorganic chemical vapor phase epitaxy using a two step growth process on GaN on Si or GaN on sapphire templates. For the growth of ZnO we grow a low–temperature buffer layer using tert–butanol at 450°C and a second high–temperature ZnO layer is grown at 850–950°C using N₂O. In cathodoluminescence measurements at 5 K dominant emission from the (A₀,X) exciton with a FWHM of 1.4 meV is observed. We will discuss the influence of the buffer growth parameters and of the main layer on the optical and microstructural quality of the films.