

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Evolution of interface and surface structures of ZnO\Al₂O₃ multilayers upon rapid thermal annealing H.H. LIU, Q.Y. CHEN, C.F. CHANG, W.C. HSIEH, National Sun Yat-Sen University, Taiwan, P.V. WADEKAR, University of Liverpool, UK, H.C. HUANG, National Sun Yat-Sen University, Taiwan, H.H. LIAO, Enli Technology Inc., Taiwan, H.W. SEO, University of Arkansas, USA, W.K. CHU, University of Houston, USA — ZnO\Al₂O₃ multilayers were deposited on sapphires by atomic layer deposition at 85°C. This low substrate temperature ensures good interface smoothness useful for study of interfacial reaction or interdiffusion. Our study aimed at the effects of rapid thermal annealing at different annealing temperatures, times and P_{Ar}:P_{O₂}. XRR and XRD techniques were used to investigate the kinetics from which various terms of the activation energies could be determined. HR-TEM and electron diffraction were carried out to correlate the microstructures and interfacial alignments as a result of the reactions. AFM were used to assist SEM profiling of the surface morphological evolution in association with the TEM observations.

H.H. Liu
National Sun Yat-Sen University, Taiwan

Date submitted: 14 Nov 2014

Electronic form version 1.4