

Abstract Submitted
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Growth and Characterization of Multilayer Structures¹ KUNAL BHATNAGAR, Angelo State University - Department of Physics, RAVI DROOPAD, Texas State University, TONI SAUNCY, Angelo State University - Department of Physics — Molecular Beam Epitaxy (MBE) is an advanced atomic precision epitaxial deposition technique that utilizes Ultra High Vacuum conditions for optimal crystal growth. Recently, new MBE facilities have been installed at Texas State University. The facility includes growth chambers for III-V compound semiconductor, Si, II-VI semiconductors and analysis chambers for SEM, XPS, LEED and other characterization techniques. Several novel structures have been produced and analyzed using characterization facilities at Angelo State University, namely Spectroscopic Ellipsometry(SE). SE is a non-destructive thin film characterization technique used for determining film thickness, interfacial roughness and optical properties of multilayered structures. Gadolinium Gallium Oxide(GdGaO₃) is one material that is important as a high-k dielectric in compound semiconductor MOSFET application and has not been characterized very well using ellipsometry. Ellipsometric data will be presented for GaGdO₃ on GaAs and optical properties will be discussed.

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