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Ferromagnetic $\delta - MnGa$ On Wurtzite GaN(0001): Interface Formation And Film Properties KANGKANG WANG, ABHIJIT CHINCHORE, WENZHI LIN, JEONGIHM PAK, ARTHUR SMITH, Department of Physics and Astronomy, Ohio University, KAI SUN, Department of Materials Science and Engineering, University of Michigan — Ferromagnetic (FM) metal/wide band-gap semiconductor contacts are of great interest due to their potential for novel spintronics applications, such as blue and ultra-violet spin light-emitting diodes[1]. One promising candidate is $\delta - MnGa$ on wurtzite GaN, whose epitaxial growth has recently been reported[2] , with controllable magnetism via controlling of the Mn:Ga flux ratio. Here we report further studies on MnGa/GaN system grown by N_2-plasma equipped molecular beam epitaxy (MBE). Reflection high-energy electron diffraction (RHEED) data suggests a quicker and more abrupt interface formation when grown on Ga-polar GaN surface as compared to N-polar. *In-situ* scanning tunneling microscopy (STM) measurements on the first few monolayer's as well as thicker MnGa films will be presented, revealing details of interface formation and other film properties. Stoichiometry dependence of the growth and magnetic properties will also be discussed. This work is supported by DOE (Grant No.DE-FG02-06ER46317) and NSF (Grant No. 0730257). Equipment support from ONR is also acknowledged. [1] S.A.Wolf *et al*, Science **294**, 1488 (2001) [2] E.Lu *et al*, Phys.Rev.Lett. **97**, 146101 (2006)

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