

Abstract Submitted
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Growth and Investigation of Mn delta-doped superlattices in w-GaN(000-1) MENG SHI, ABHIJIT CHINCHORE, KANGKANG WANG, JEONGIHM PAK, ARTHUR SMITH, Ohio University, DAVID RENCH, NITIN SAMARTH, Penn State University, PENN STATE UNIVERSITY COLLABORATION — It is of great interest to form novel spintronic systems involving magnetic layers in semiconductor hosts. Recently, the possibility to form delta-doped magnetic layers in wurtzite GaN has been postulated theoretically [1]. In this work, we deposit single Mn monolayers on w-GaN(000-1) followed by a thin spacer layer of GaN, and then this process is repeated many times in order to form a superlattice of the form Mn/GaN/Mn/GaN/Mn? Samples having different GaN interlayer spacings and repetitions of 50 to 100 have been grown. Reflection high energy electron diffraction data acquired during deposition indicates good quality growth for many repetitions. Magnetic property measurements are currently in progress, and results will be presented. This work has been supported by DOE (Grant No.DE-FG02-06ER46317) and NSF (Grant No.0730257). Equipment support from ONR is also acknowledged.

[1] Cui X.Y. et al, JAP 106, 043711 (2009)

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