

Purely thermal deposition of polycrystalline gallium nitride films at 400 °C

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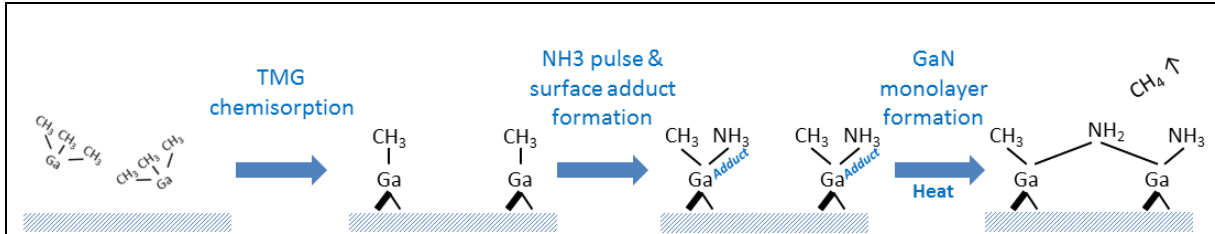


Fig. 1: A possible adduct-mechanism of thermal growth of GaN films from alternating TMG and NH₃ pulses via self-limiting surface reactions (suggested on the basis of [1, 2]).

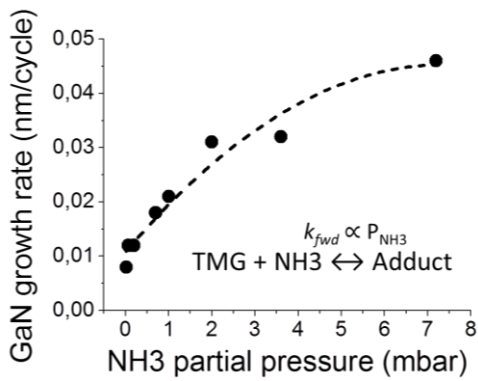


Fig. 2: Variation of GaN GPC with NH₃ partial pressure as monitored with in-situ SE.

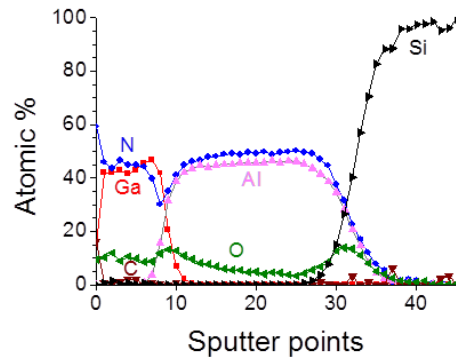


Fig. 3: XPS depth profile of a GaN-AIN-Si stack.

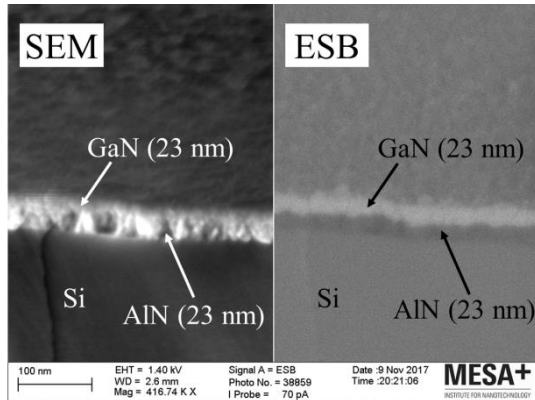


Fig. 4: SEM-ESB image of the GaN-AIN-Si stack.

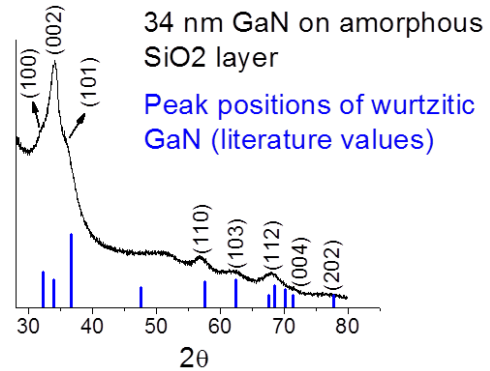


Fig. 5: GIXRD pattern of GaN film deposited on thermally-grown SiO₂, showing polycrystalline wurtzitic structure.

References:

- [1] M. E. Bartram, T. A. Michalske, J. W. Rogers, Jr. and R. T. Paine, *Chem. Mater.* 5, 1424 (1993).
- [2] J. Randall Creighton and George T. Wang, *J. Phys. Chem. A* 109, 10554 (2005).