

Supplementary informations: Structural, optical and electronic properties of Mg incorporated GaN Nanowall Network

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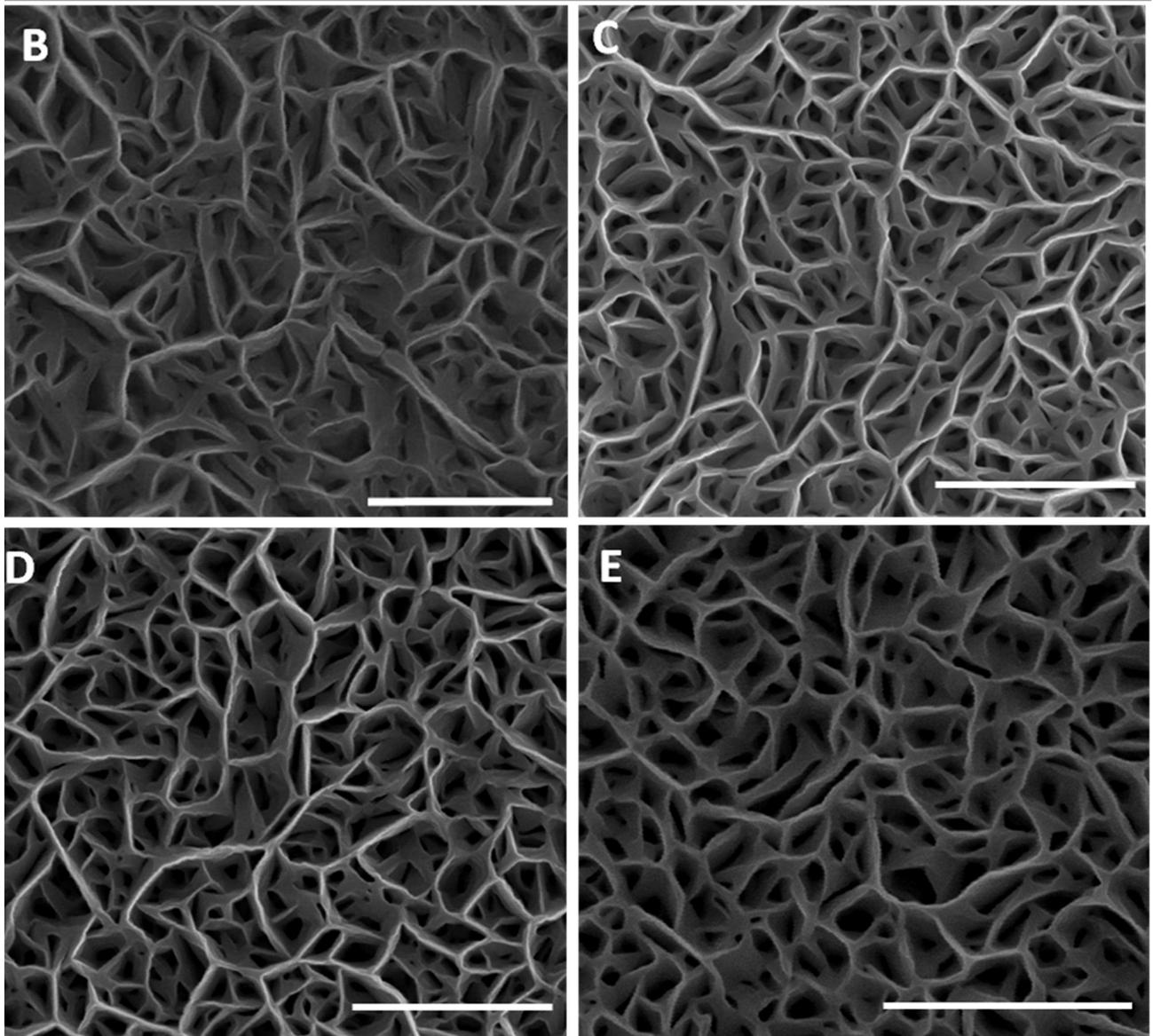


FIG. S1. FESEM image of different Mg incorporated GaN NwN. The labels on the SEM represent the sample name used in main manuscript. The scale bar is 500 nm.

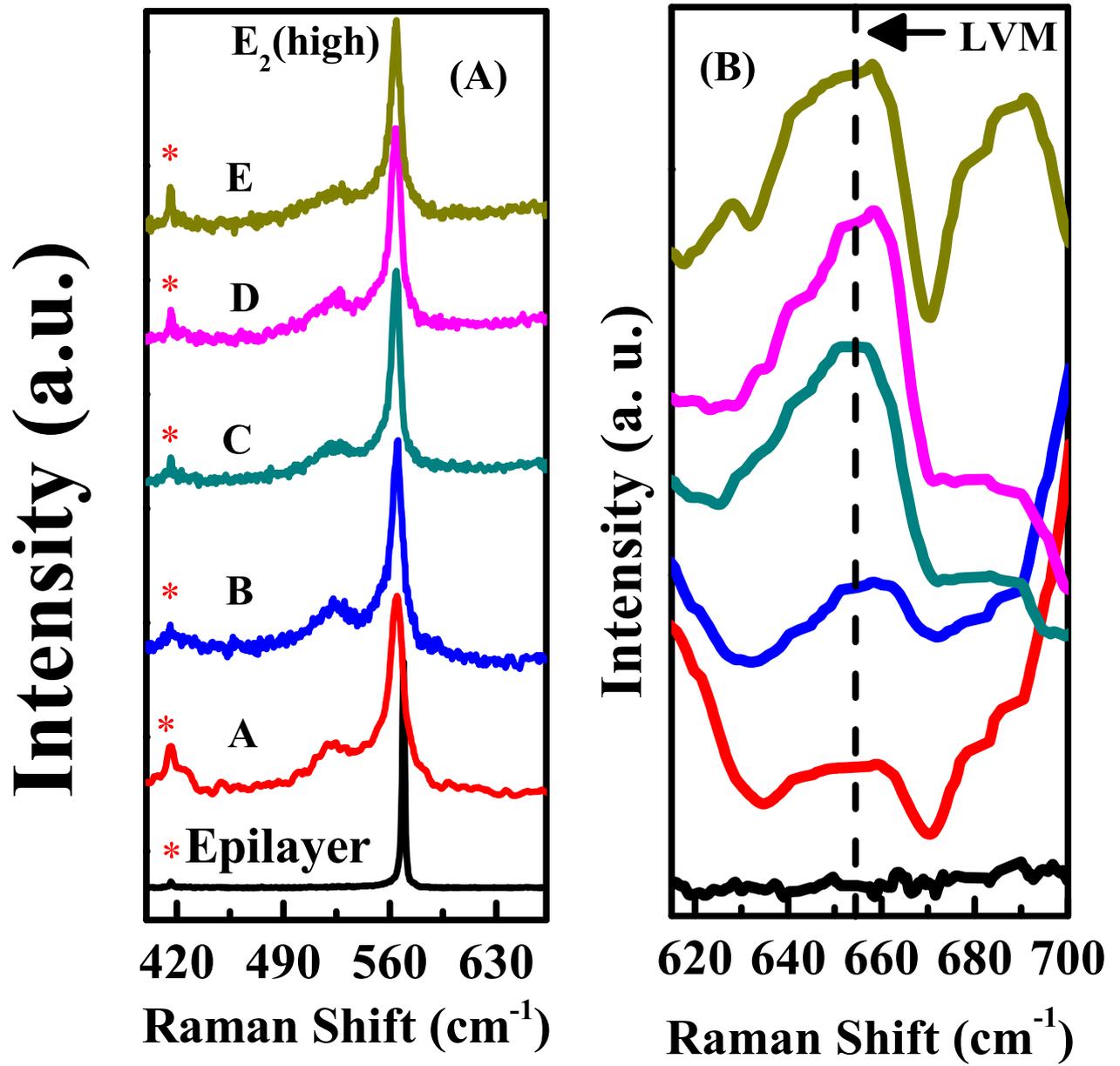
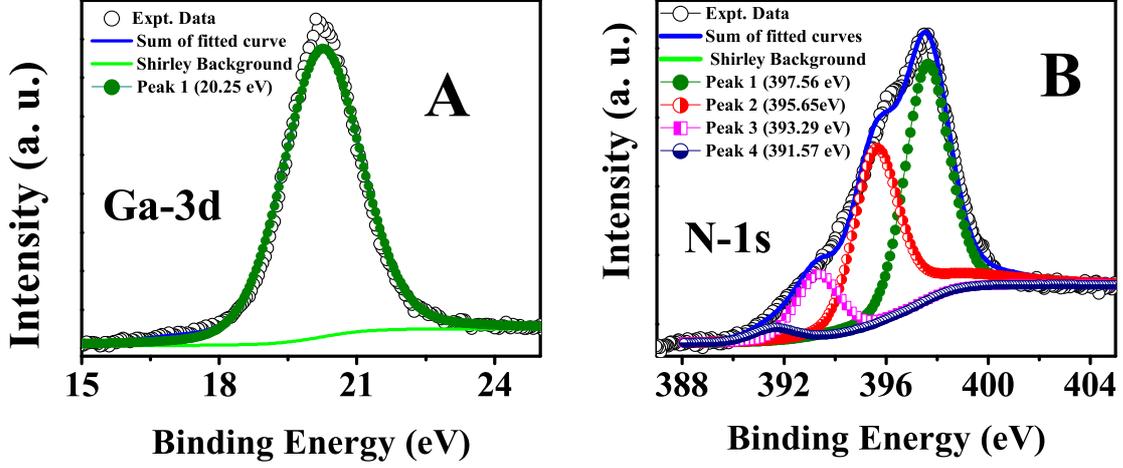


FIG. S2. Raman spectroscopic data of all the samples. (A) and (B) represent E₂ (high) mode and Mg related LVM, respectively. Please note that LVM were plotted after smoothing the experimental data.

Sample C



Sample D

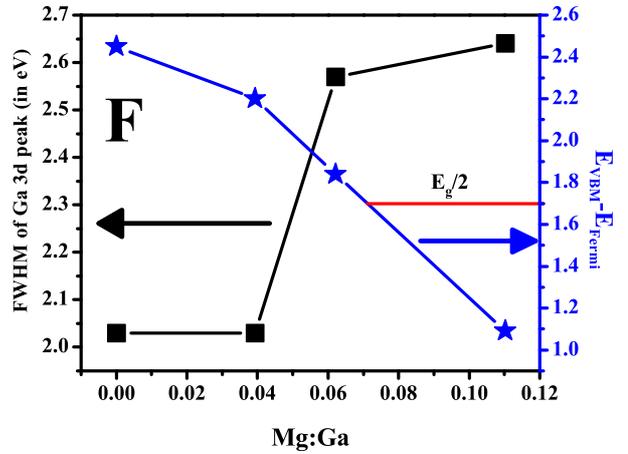
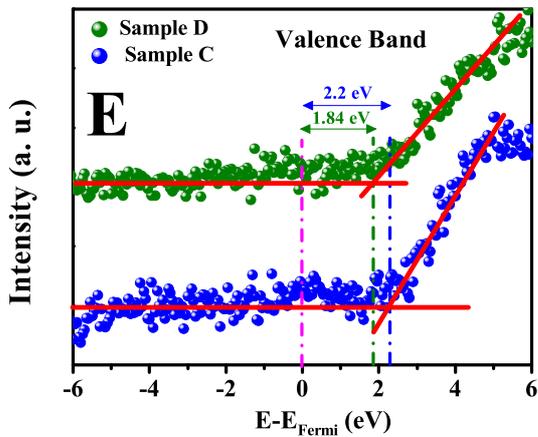
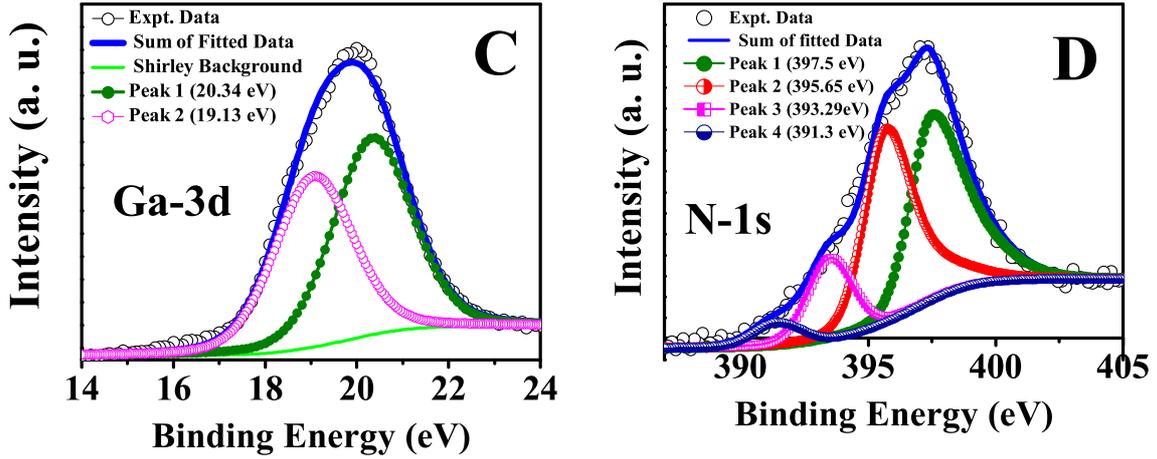


FIG. S3. XPS of the sample C and D, which is grown at a Mg k-cell temp of 320°C and 340° C, respectively. Fig. A and B represent Ga-3d and N-1s core level spectra of sample C, respectively. C and D represent Ga-3d and N-1s core level spectra of sample D, respectively. E represent valence band spectra of sample C and D. F represent ⁴ broadening of Ga 3d peak and $E_{VBM} - E_{Fermi}$ as a function of Mg:Ga.