Low-temperature plasma-enhanced atomic layer deposition of crystalline GaN thin films using monovalent organogallium precursor

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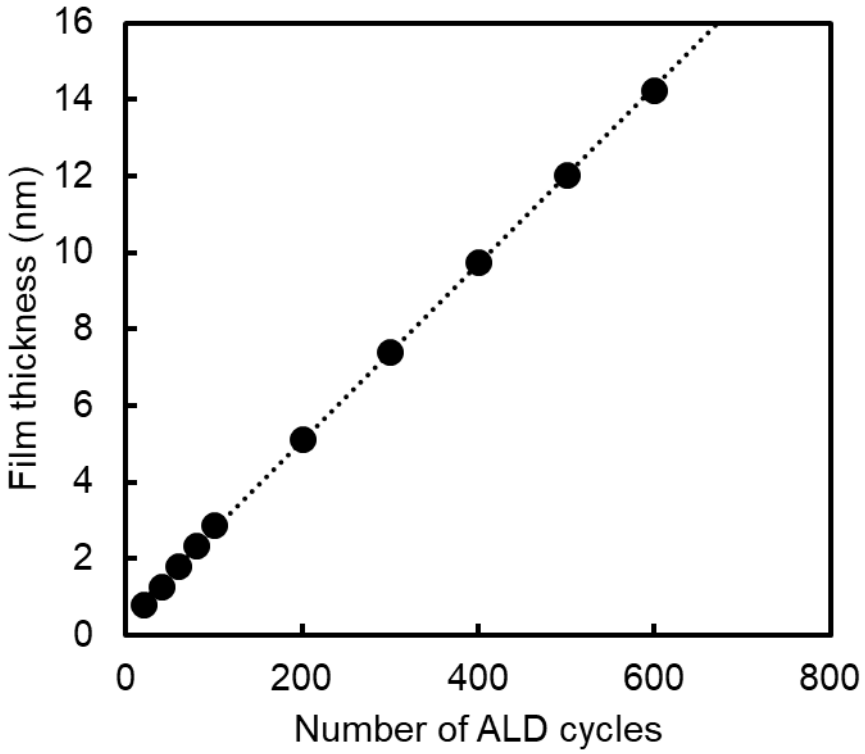
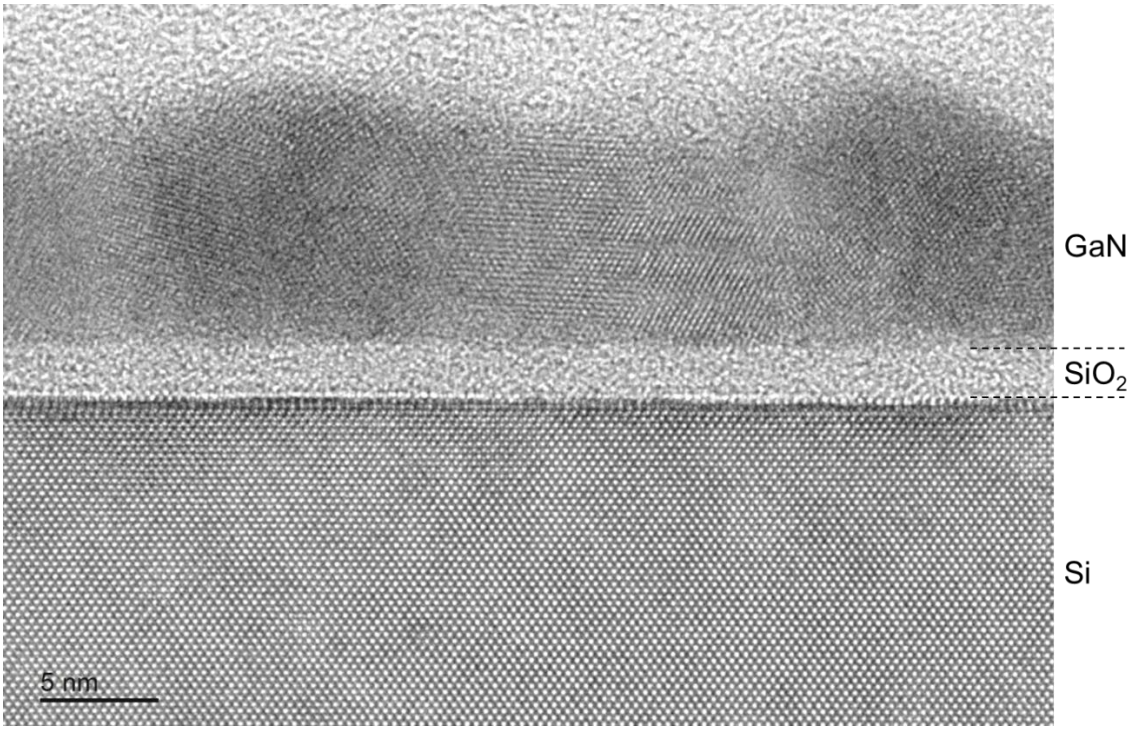


GaN film thickness as a function of the number of ALD cycles. The ALD process consisted of a GaCp* pulse time of 0.5 s, H_2 plasma pulse time of 20 s, and N_2 plasma pulse time of 20 s.



Cross-sectional TEM image for the GaN film grown with the substrate temperature: 200 °C, number of ALD cycles: 600, GaCp* pulse time: 0.5 s, H_2 plasma pulse time: 20 s, and N_2 plasma pulse time: 20 s.