

Abstract Submitted
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Improvement of *M*-plane GaN thin film grown on pre-annealing β -LiGaO₂ (100) substrate¹ CHIA-HSUAN HU, CHENG-HUNG SHIH, IKAI LO, YING-CHIEH WANG, CHEN-CHI YANG, Department of Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan, MITCH CHOU, Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Kaohsiung, Taiwan — *M*-plane GaN thin films have been grown on β -LiGaO₂ (100) substrates by plasma-assisted molecular-beam epitaxy. In order to improve the quality, we tried to grow *M*-plane GaN thin films on pre-annealed in vacuum and in air ambient LiGaO₂ (100) substrates. X-ray diffraction data indicated that the *M*-plane GaN thin film grown on the LiGaO₂ (100) substrate pre-annealed in air ambient has better crystal quality than that grown on the LiGaO₂ (100) substrate pre-annealed in vacuum. In addition, we found that the strain between GaN and LiGaO₂ substrate can be relaxed by growing GaN thin film on pre-annealed LiGaO₂ substrate in air. It reveals that LiGaO₂ substrate annealing in air ambient can suppress the formation of lithium-rich surface effectively to grow a high quality *M*-plane GaN thin film on the LiGaO₂ substrate.

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