

Supporting Information

AlGaN-based solar-blind UV heterojunction bipolar phototransistors: structural design, epitaxial growth, and optoelectric properties

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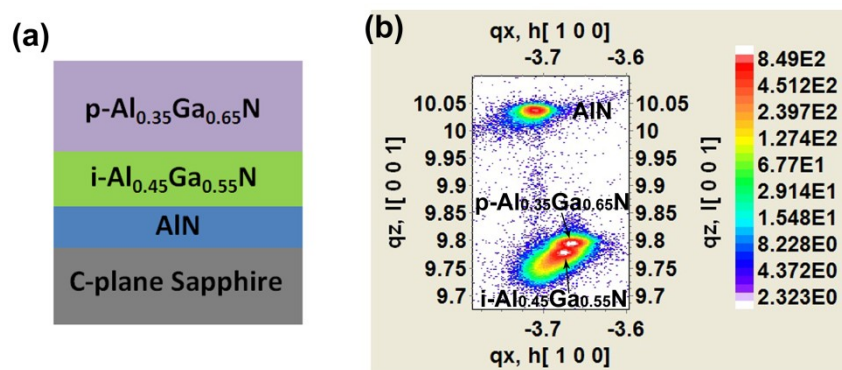


Fig. S1. (a) The epitaxial structure of p-AlGaN based on single uniform Mg doping. (b) The asymmetrical RSM around (105) reflection of the p-AlGaN material.

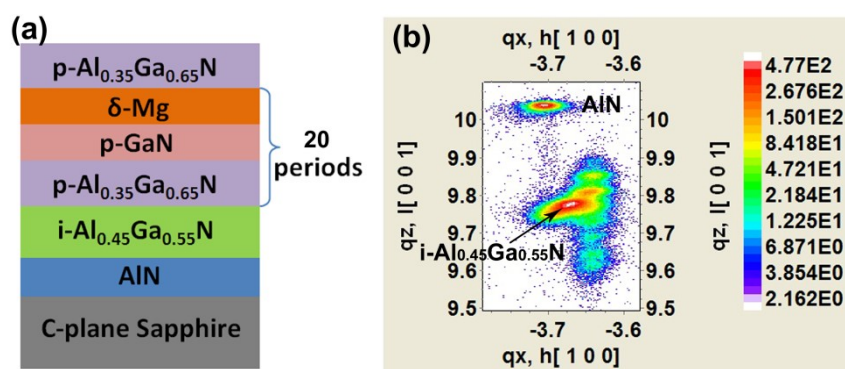


Fig. S2. (a) The epitaxial structure of p-AlGaN based on periodic uniform Mg doping and δ -Mg doping. (b) The asymmetrical RSM around (105) reflection of the p-AlGaN material.

Table I. The electrical parameters of the two p-type doping AlGaN measured by Hall testing

Sample	Epitaxial structure	Carrier concentration (cm^{-3})	Hall mobility ($\text{cm}^2/\text{V}\cdot\text{s}$)
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Fig. S1	uniform Mg doping	NA	NA
Fig. S2	periodic uniform Mg doping and δ -Mg doping	2.16×10^{18}	0.4602

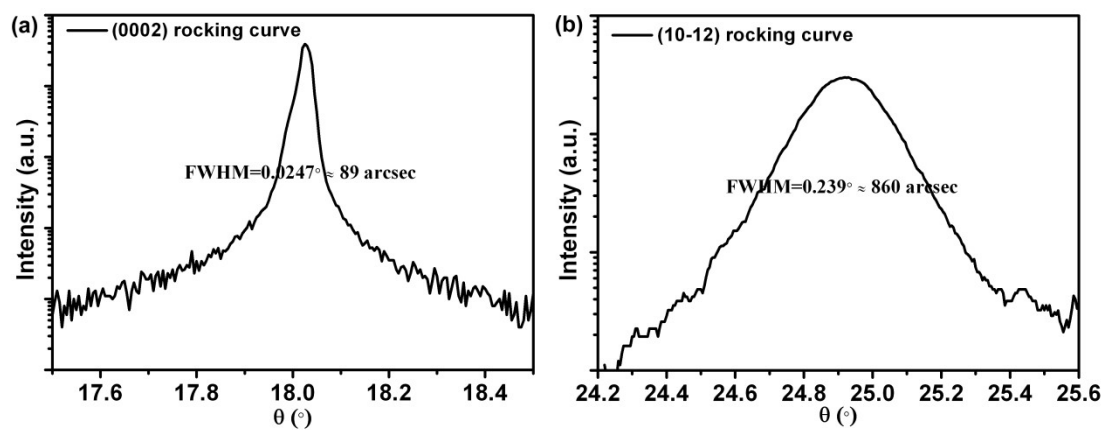


Fig. S3. (a) (0002)-plane and (b) (102)-plane rocking curves of the used AlN template.