Supplementary Material

Direct fabrication of record low specific resistivity metal contacts for n-type $Al_xGa_{1-x}N$ ($x \geq 0.8$)

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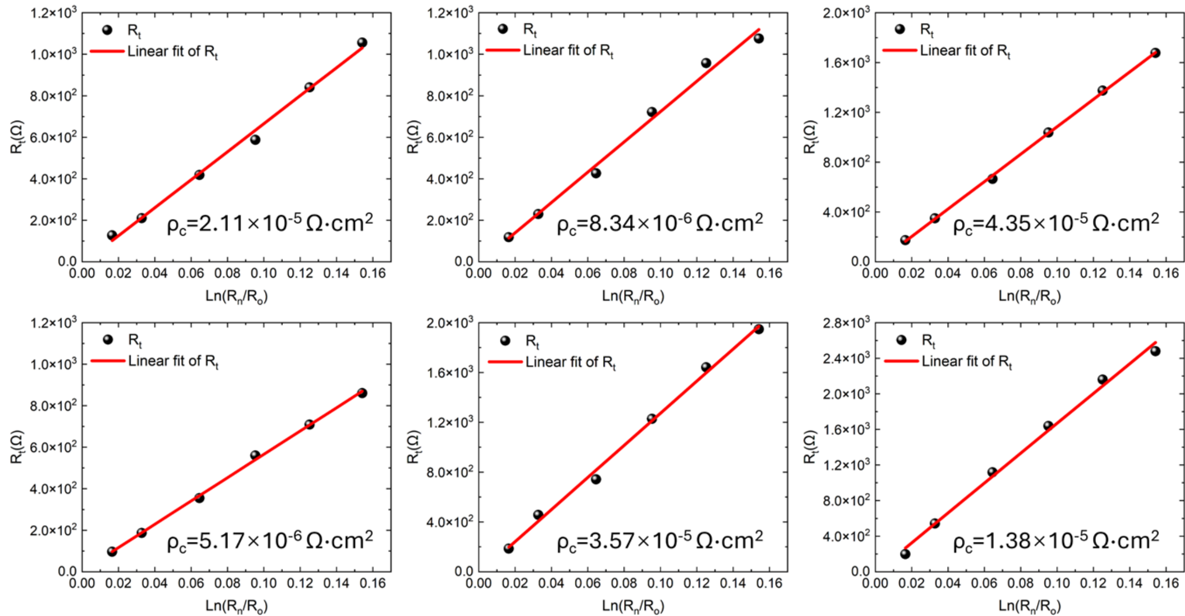

Figure S1. Linear fitting of total resistance Rt versus ln(Rn/R0) for n-Al0.8Ga0.2N shown in the error bar in Figure 4 (a).

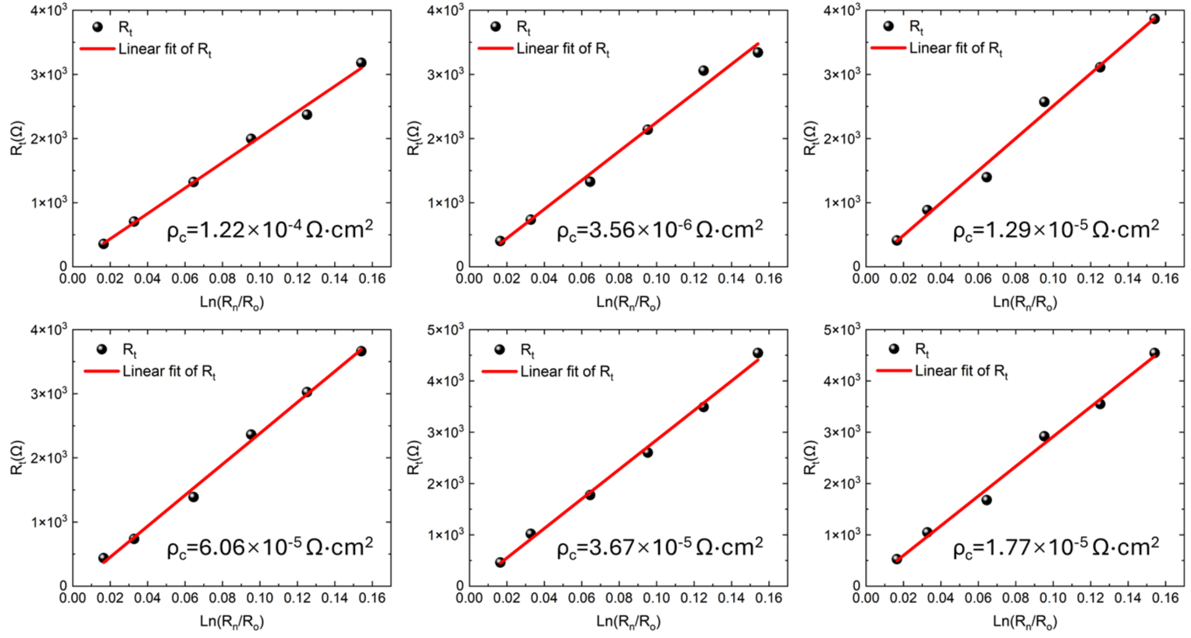

Figure S2 Linear fitting of total resistance Rt versus ln(Rn/R0) for n-Al0.86Ga0.14N shown in the error bar in Figure 4 (a).

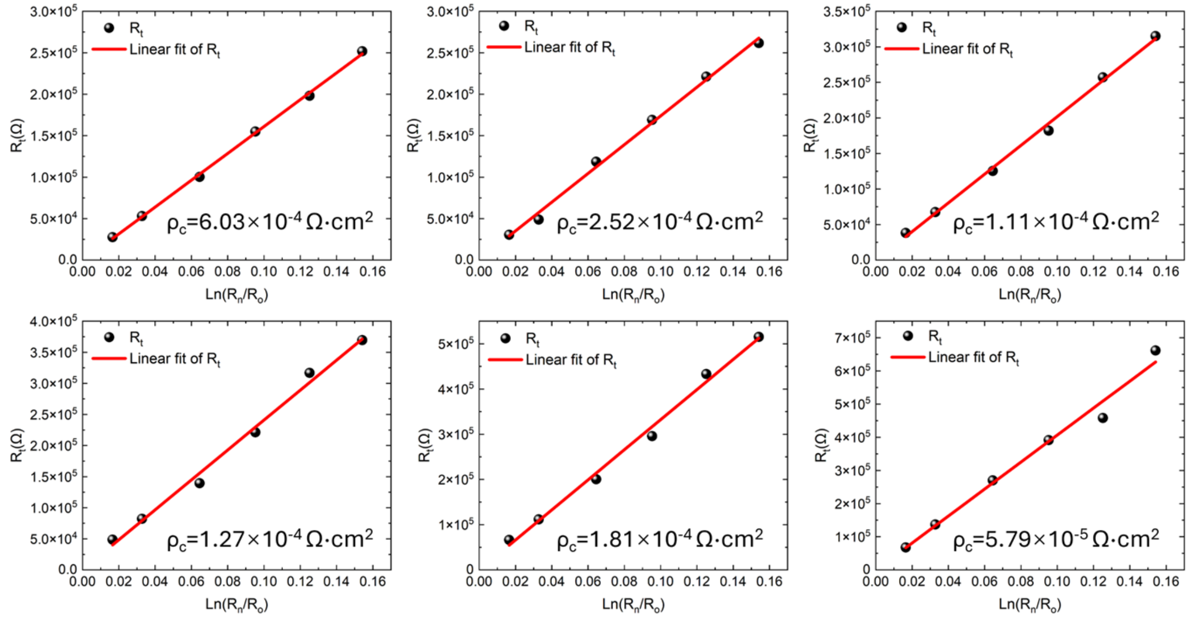

Figure S3 Linear fitting of total resistance Rt versus ln(Rn/R0) for n-Al0.9Ga0.1N shown in the error bar in Figure 4 (a).

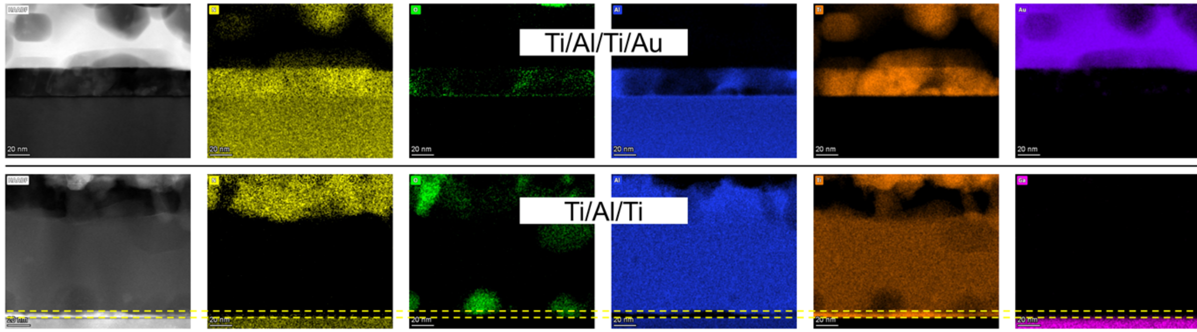

Figure S4 Cross-section EDX results of both samples including HADDF images to indicate the measurement position.

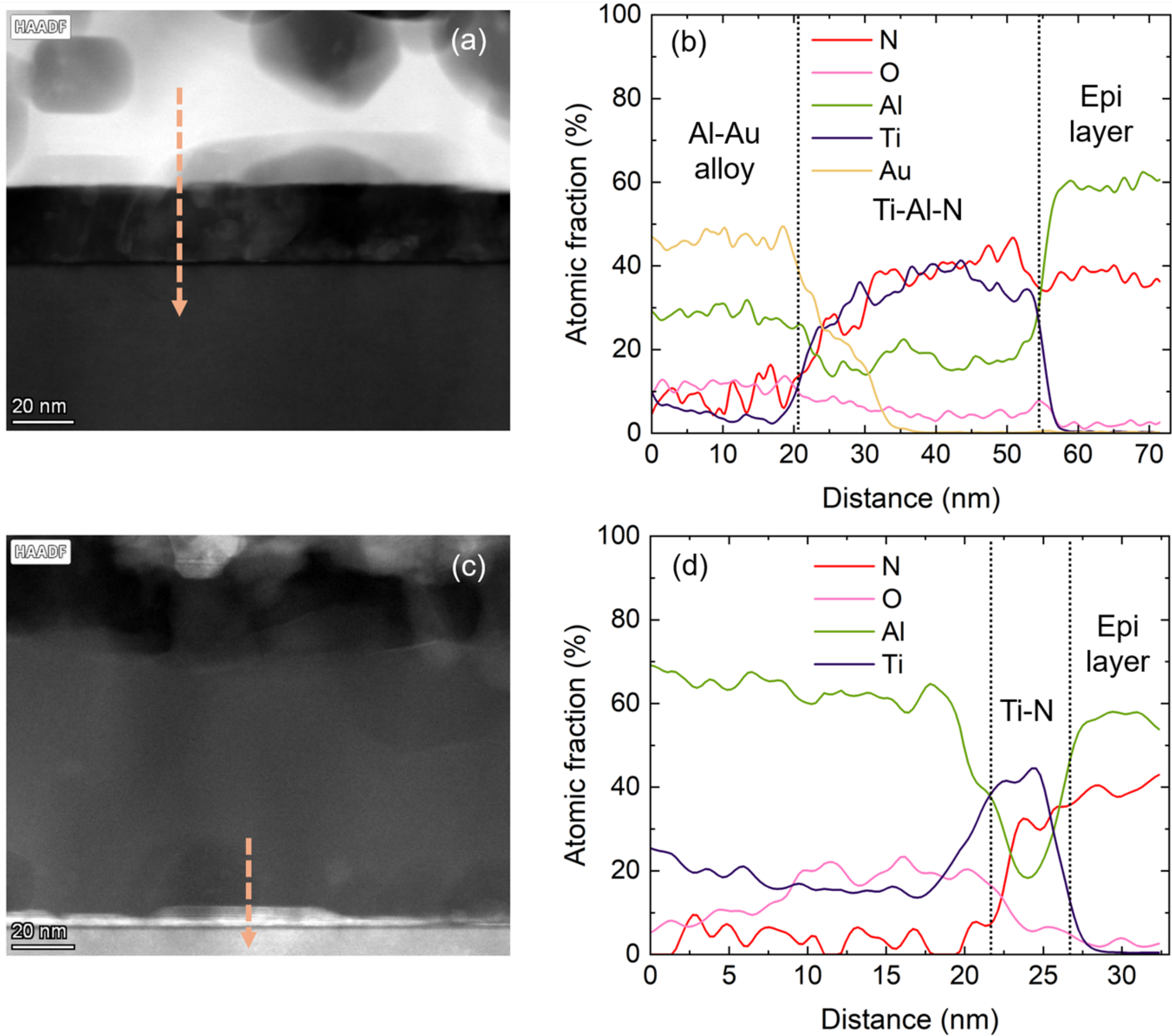

Figure S5 Cross-sectional HAADF-STEM images of the (a) Ti/Al/Ti/Au and (c) Ti/Al/Ti contacts. The orange arrows mark the corresponding EDX line-scan paths, with elemental profiles shown for (b) Ti/Al/Ti/Au and (d) Ti/Al/Ti.

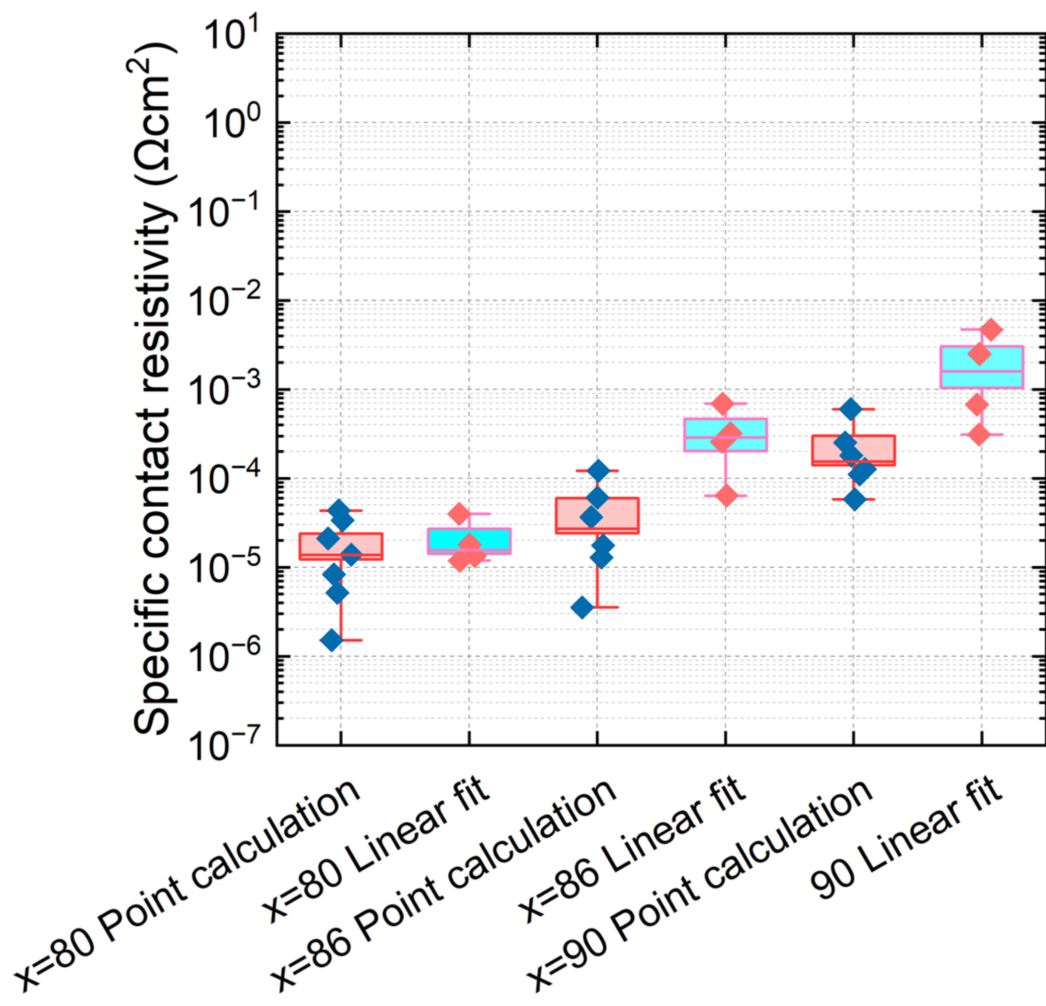

Figure S6 Comparison of calculated contact resistivity of R=V/I at a fixed bias with linear fitting methods.