

Supporting Information

Broadband Ultraviolet Plasmonic Enhanced AlGaN/GaN Heterojunction Photodetectors with Close-packed Al Nanoparticle Array

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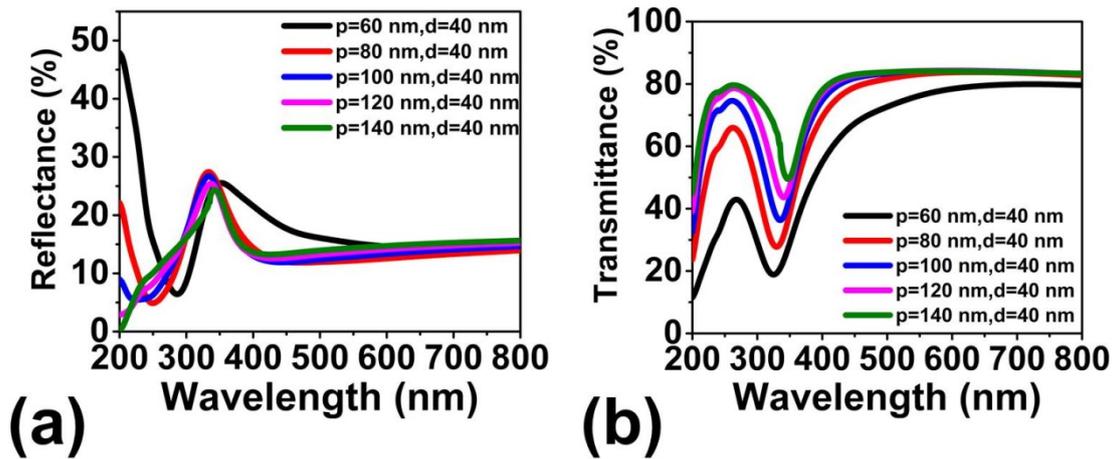


Figure S1. Simulated reflectance (a) and transmittance (b) spectra of the Al NPs array on AlGaIn/GaN substrate as a function of array period for the particle size of $d=40$ nm.

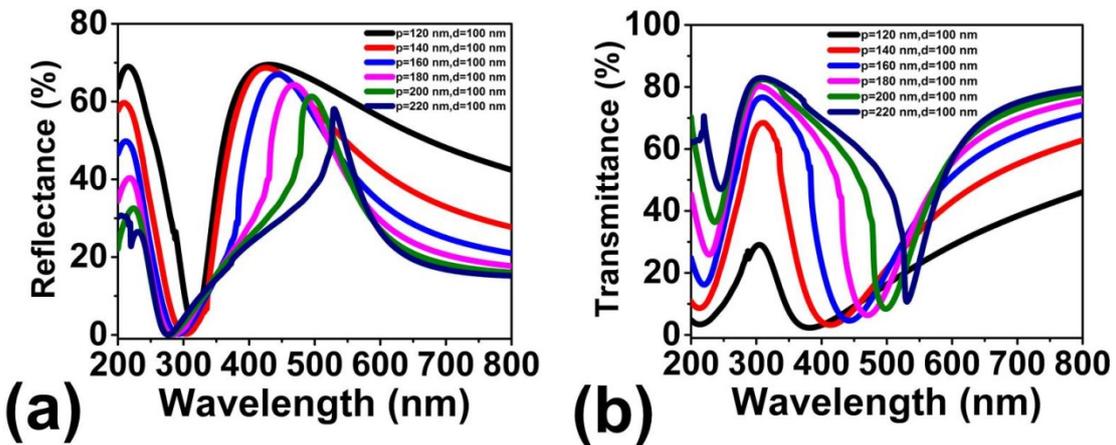


Figure S2. Simulated reflectance (a) and transmittance (b) spectra of the Al NPs array on AlGaIn/GaN substrate as a function of array period for the particle size of $d=100$ nm.

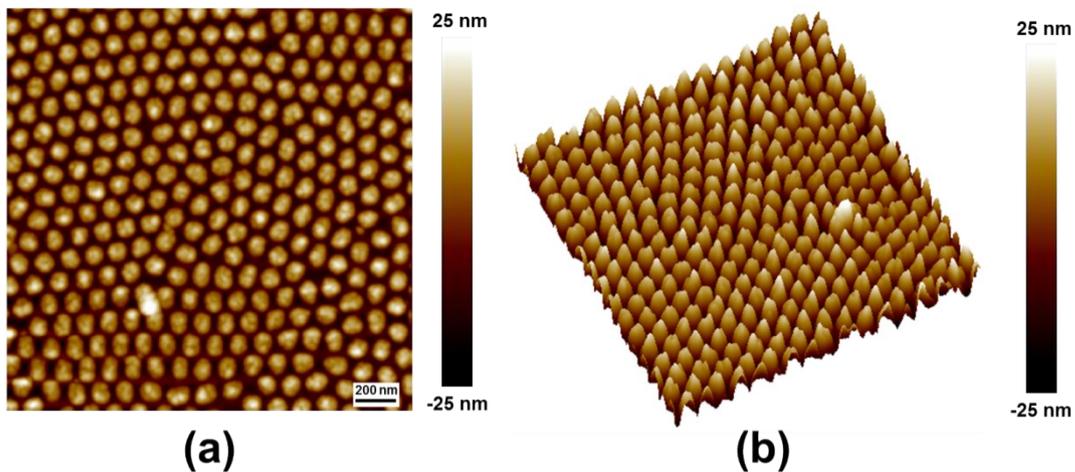


Figure S3. AFM images of the Al NPs array ($p= 120$ nm and $d=100$ nm) on AlGaIn/GaN substrate. (a) Planar view and (b) 3D view of the Al NPs array.

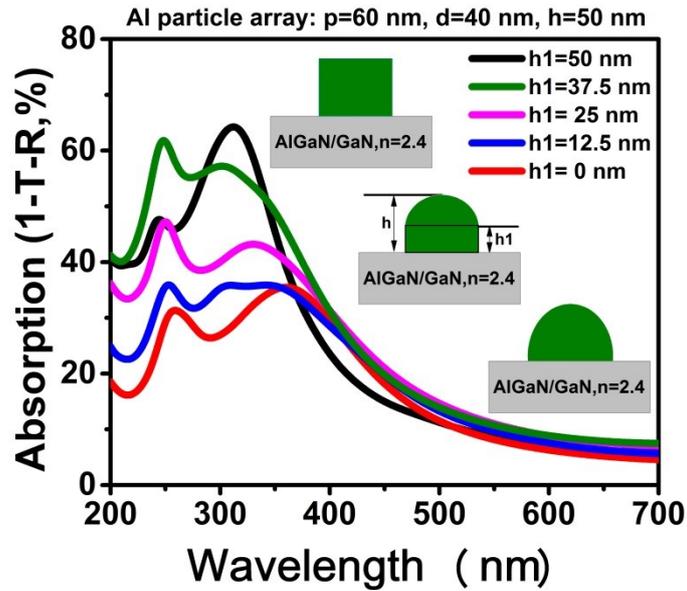


Figure S4. Simulated absorption spectra of the Al NPs array on AlGaIn/GaN substrate with different heights of cylinder for the cylinder-ellipsoid composite Al nanoparticle.

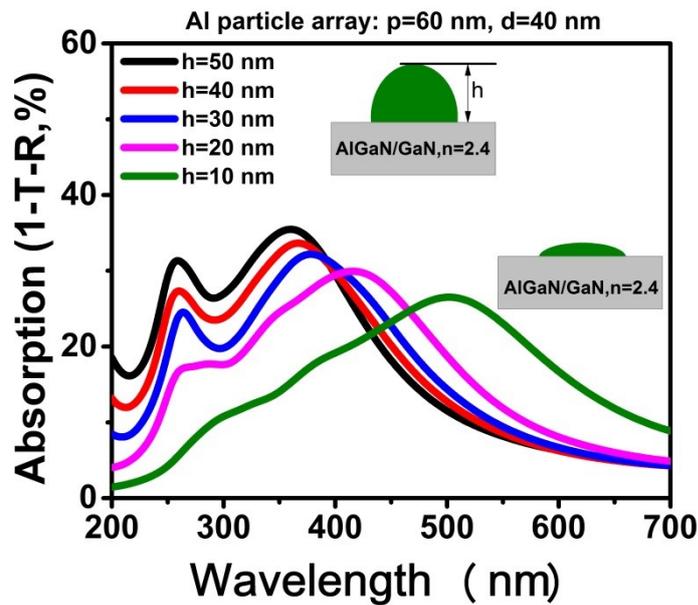


Figure S5 Simulated absorption spectra of the Al NPs array on AlGaIn/GaN substrate with different heights of Al ellipsoid particle.

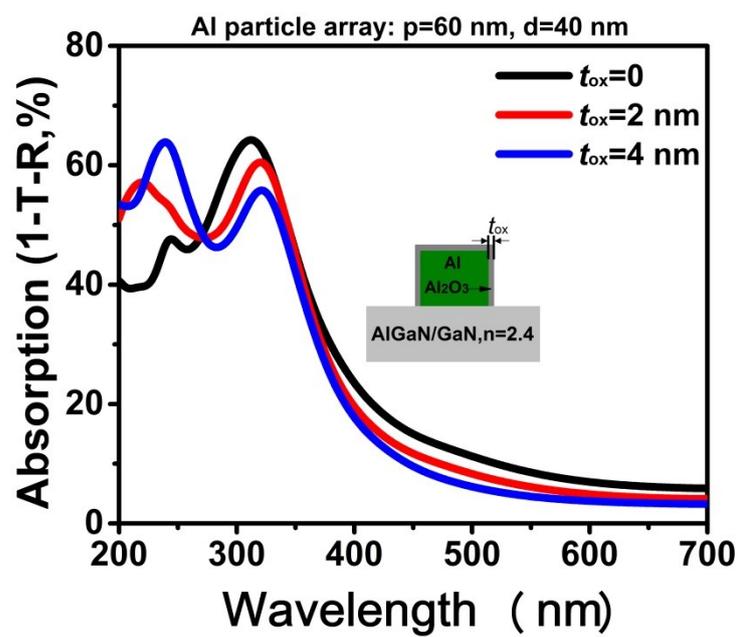


Figure S6 Simulated absorption spectra of the Al NPs array on AlGaIn/GaN substrate with different surface oxide thicknesses t_{ox} .