Supplementary Information

A Broadband Quarter-Wave Plate Enabled by a Dual-Aluminium Metastructure with Process-Realistic SiO$_2$ Geometry

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In this supplementary information, you will find additional information about the FDTD simulation setting presented in the paper.

1. FDTD simulation setup

Figs. S1(a) and S1(b) show the two-dimensional (2D) simulation geometries corresponding to the xy- and xz-views, respectively, while Fig. S1(c) presents the three-dimensional (3D) simulation setup in the xyz-view. The blue, green, and violet arrows indicate the directions of the electric field ($\vec{E}$), magnetic field ($\vec{H}$), and wave propagation ($\vec{k}$), respectively. The orange and sky-blue regions represent the perfectly matched layer (PML) and the periodic boundary condition (PBC), respectively. The 2D yellow regions located above and below the dual-Al NWG correspond to the reflection and transmission monitors, while the 2D grey region denotes the plane-wave light source.
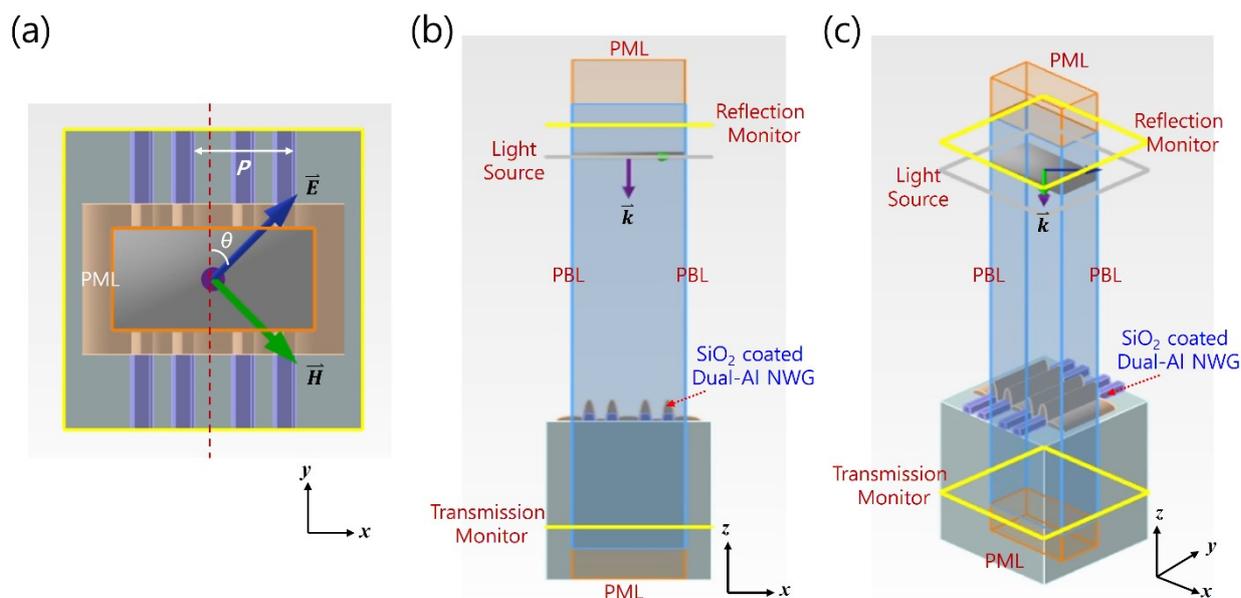
Fig. S1. Schematic illustration of the FDTD simulation setups: (a) xy-view, (b) xz-view, and (c) xyz-view.